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UNITED STATES DEPARTMENT OF THE INTERIOR

WATER LEVELS AND ARTESIAN PRESSURE
IN OBSERVATION WELLS IN THE
UNITED STATES IN 1944

PART 6. SOUTHWESTERN STATES AND
TERRITORY OF HAWAII

Prepared in cooperation with the States of
ARIZONA, CALIFORNIA, and NEW MEXICO, the Territory of HAWAII
and other agencies

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1021

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HYDROLOGY

UNITED STATES DEPARTMENT OF THE INTERIOR
J. A. Krug, Secretary
GEOLOGICAL SURVEY
W. E. Wrather, Director

Water-Supply Paper 1021

WATER LEVELS AND ARTESIAN PRESSURE
IN OBSERVATION WELLS IN THE
UNITED STATES IN 1944

PART 6. SOUTHWESTERN STATES AND
TERRITORY OF HAWAII

BY
A. N. SAYRE
and others

Prepared in cooperation with the States of
ARIZONA, CALIFORNIA, and NEW MEXICO
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and other agencies



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WATER LEVELS AND ARTESIAN PRESSURE IN OBSERVATION WELLS IN THE UNITED STATES IN 1944

Part 6. SOUTHWESTERN STATES

INTRODUCTION

By A. N. Sayre and others

Significance of records of water level and artesian pressure

The rock formations of the earth are great natural underground reservoirs in which a part of the water derived from rain and snow is stored to supply wells and springs and to maintain the flow of streams during periods of fair weather. Water levels in wells register the stages of these natural reservoirs; they show the extent to which water supplies are depleted by drought or by heavy pumping, whether for public waterworks, irrigation, or industrial uses, and the extent to which they are replenished in seasons of abundant rainfall or melting snow. The changes in pressure recorded on flowing wells indicate depletion or replenishment of the artesian reservoirs.

Annual publication of records by Geological Survey

The regular publication of records of water level and artesian pressure in the United States was begun by the Geological Survey in 1938 and has continued yearly since. The records for the entire country were published in a single volume each year through 1939. Beginning with 1940 the records have been published in six volumes, covering the northeastern, southeastern, north-central, south-central, northwestern, and southwestern sections of the country. Hawaii is included in the southwestern section. (See fig. 1.) The following table gives the numbers of these reports. This series of water-supply papers is in a sense an inventory, year by year, of the ground-water supplies of such parts of the country as have been covered.

Water-supply papers on water levels and artesian pressure in observation wells in the United States

Year	North-eastern States	South-eastern States	North-central States	South-central States	North-western States	South-western States and Hawaii
1935	777	777	777	777	777	777
1936	817	817	817	817	817	817
1937	840	840	840	840	840	840
1938	845	845	845	845	845	845
1939	886	886	886	886	886	886
1940	906	907	908	909	910	911
1941	936	937	938	939	940	941
1942	944	945	946	947	948	949
1943	986	987	988	989	990	991
1944	1016	1017	1018	1019	1020	1021

Scope of present volume

The present volume covers the southwestern States and gives records of water level and artesian pressure in about 1,960 observation wells of the Geological Survey and cooperating agencies in Arizona, California, Hawaii, and New Mexico. Of these wells, 54 are equipped with automatic water-stage recorders. For some wells not previously reported complete records of water level are given in this volume, including those of the years before 1944. For wells whose previous records have been published this volume gives only the current records. If a complete description of a well has been published in a previous report, only the well number or the well number and a brief identifying description are given in this report. The numbers in parentheses immediately following a well number are those of the water-supply papers in which earlier records of that well are given and the pages on which they appear. An asterisk indicates that a description of the well is given in the paper whose number is so marked. This report includes about 13,140 individual determinations of water level and artesian pressure.

Land-surface datum

Before 1943, in Geological Survey reports, the water levels and artesian pressures for some wells were given in feet above or below the measuring points and for other wells in feet above or below sea level or above or below various assumed datum planes. It had been considered inadvisable to adopt a standard procedure in expressing water levels and artesian heads until after a period of trial with datum planes of different kinds. In 1943, however, it was decided that uniform practice should be adopted.

Accordingly precise datum planes were established approximating the land surface at each well. The water levels and artesian heads for all wells listed in this report are given in reference to land-surface datum planes. If the water levels or artesian heads are referred to land-surface datum

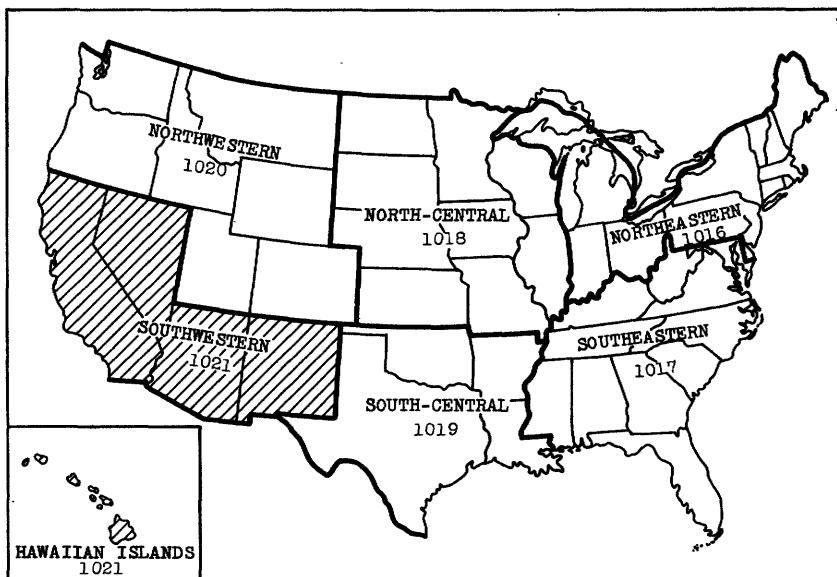


Figure 1.--Outline map of the United States showing sections of the country covered by the six water-supply papers on water levels and artesian pressure in observation wells in 1944. The shaded section represents the part of the country covered by this volume.

for the first time, a conversion factor is given in the descriptive matter preceding them in order to facilitate comparison of the older and newer records. Wherever the conversion factor is given in earlier reports it is not repeated in this report. New data as to the positions of the measuring point and of the bench marks, in feet above or below land-surface datum plane, will be published in succeeding annual reports.

Network of key observation wells

During 1942 the Geological Survey established a network of key observation wells in order to make available current information on general ground-water conditions over the country. These wells were selected

because the fluctuations of water level in them are believed to be typical, and they represent the general fluctuations that occur in the parts of the country in which the wells are situated. At the end of 1944 the network included about 160 wells in 45 States. About 40 of the wells were established expressly for the network in 1942 and about 20 were established in 1943; the other 100 were selected from wells measured regularly in connection with cooperative ground-water investigations. The coverage of the country is still far from adequate, and it is expected that some wells not now included will be added to the network from time to time.

Changes in ground-water level in 1944 in the southwestern part of the United States

In 1944 the precipitation in California was about normal and in Arizona and New Mexico it was slightly above normal. However, the precipitation in Hawaii was below normal and 4.57 inches below the average for 1943. The fluctuations of both water level and artesian pressure in wells depend, however, on many factors besides the amount of precipitation. In certain of the observation wells there are fluctuations caused by differences in the rate of pumping or artesian flow from other wells in the area, but most of the observation wells are not noticeably affected by pumping or artesian flow. A summary of the changes in ground-water level is given in the chapters for each State.

Acknowledgments

Acknowledgments for effective services in the preparation of this water-supply paper are due Miss Dorothy M. Ireland, Rodney Hart, and Misses Gladys Case, Nauvoo Morris, and Frances Head. Miss Ireland had general charge of the assembling of the several reports and did most of the editing; Mr. Hart prepared the illustrations; and Misses Case, Morris, and Head did the offset typing.

ARIZONA

PROGRAM OF WORK

By S. F. Turner

The investigation of ground-water resources in Arizona was continued during 1944 in cooperation with the State Land Commissioner.

About 873,800 acre-feet of water, or an average of about 780 million gallons a day, was pumped from wells in 1944, chiefly for irrigation, in the drainage basin of the Gila River above its confluence with the Salt River, including the Santa Cruz Basin and all wells in the Queen Creek area east of those of the Salt River Valley Water Users. This was an increase of about 27,600 acre-feet over the pumpage in 1943, and about 350,000 acre-feet over the pumpage in 1943, and about 350,000 acre-feet over that in 1941.

The following table shows the pumpage from wells in this region since the beginning of the cooperative ground-water investigation in Arizona:

Pumpage from wells in southern Arizona, in acre-feet ^{1/}					
Year	1940	1941	1942	1943	1944
Safford Valley, Graham Co.	24,600	8,685	18,900	36,000	52,000
Santa Cruz River Basin in Pima and Santa Cruz Counties	.....	90,000	100,000	115,000	118,500
Santa Cruz and Gila River Basins in Pinal County	372,000	351,000	500,000	515,000	530,000
Queen Creek Area, including all wells between the Salt and the Gila Rivers, east of the Salt River Valley Water Users	112,670	82,450	156,000	173,200	163,800
Duncan-Virden Valley in Greenlee County, Arizona, and Hidalgo County, New Mexico	2,436	1,348	1,600	7,000	9,500
Totals	a 511,706	523,483	776,500	846,200	873,800

^{1/} One thousand acre-feet is equal to about 893,000 gallons a day for a period of one year.

a Not including the pumpage in the Santa Cruz River Basin in Pima and Santa Cruz Counties.

The upward trend in pumpage each year and the resulting gradual drop in water levels, as measured in key observation wells, clearly indicate

that the withdrawals of ground water greatly exceed the safe annual yield and that large amounts of water are being withdrawn from storage. This fact is especially evident in localities solely dependent on ground water for irrigation use. Where surface water is being brought into an area for irrigation the ground-water supplies are not being depleted as rapidly because some recharge to the ground-water reservoir occurs from canal seepage and irrigation with surface water.

The following table shows the amount of water pumped in excess of the annual safe yield in two heavily developed areas of southern Arizona.

	Annual safe yield in acre-feet 2/	Acre-feet pumped in excess of annual safe yield				
		1940	1941	1942	1943	1944
Santa Cruz River Basin in Pima and Santa Cruz Counties	80,000	Not measured	.....	20,000	35,000	38,500
Santa Cruz and Gila River Basins in Pinal County	135,000	237,000	216,000	365,000	380,000	395,000

2/ From the report entitled "Ground-water resources of the Santa Cruz Basin, Arizona" by S. F. Turner and others, which was released in mimeographed form by the Geological Survey on May 14, 1943.

The project to investigate the amount of water used by river-bottom vegetation in the Gila River Valley in Graham County was started in March 1943, at the request of the Defense Plant Corporation, United States Department of Commerce, and their agent, the Phelps-Dodge Corporation. It was practically completed by the end of the year and a report was being prepared. As a part of this project many additional water-level measurements were made in the established observation wells in the valley, and these measurements appear in this report. The measurements made in wells especially installed for the above investigation are not included in this report, but they may be consulted in the "open file" of the Geological Survey, in Tucson, Arizona.

Intermittent cooperation with the United States Army Engineers continued during the year with regard to the water supplies for various Army camps and airfields. Several special investigations were made under the war program of the Geological Survey. These pertained to increased water supplies for important mines and industries.

An intensive investigation for and in cooperation with the city of Phoenix was begun in May 1944 to determine the ground-water resources of

the Verde River Valley near Fort McDowell, Arizona. The area studied included that portion of the Verde River Valley from Camp Creek to the junction with the Salt River. The purpose of the investigation was to determine (1) the quantity, source, and direction of movement of water in the

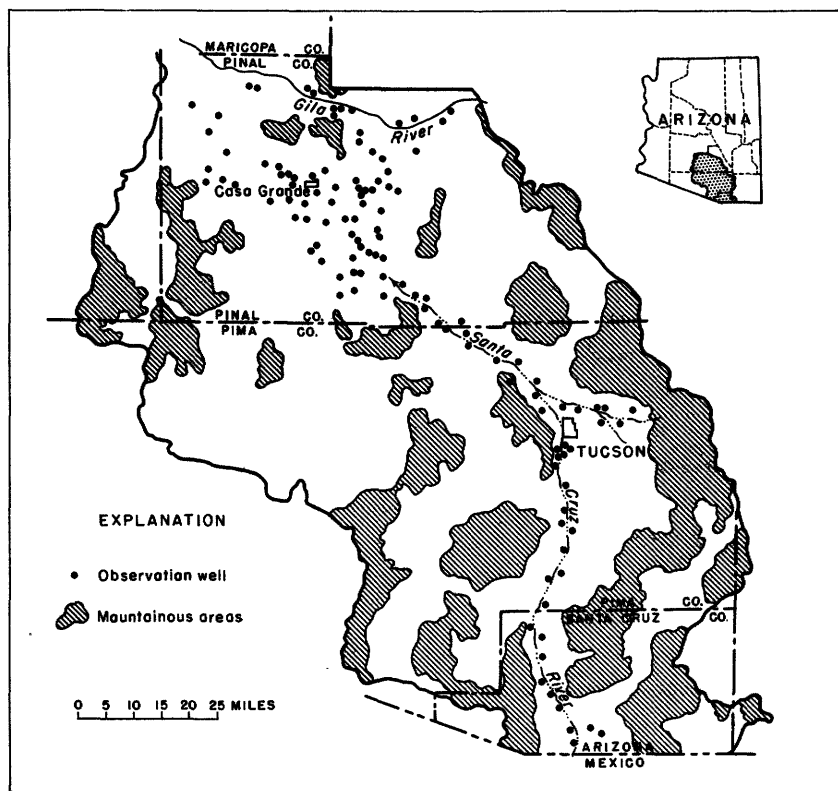


Figure 2.--Map of Santa Cruz River Basin, Arizona, showing location of observation wells.

valley; (2) the effect on the recharge to the shallow aquifers of the suspended solids carried at times by the surface flow of the river; (3) interference between existing wells or between the wells and the infiltration gallery; (4) the quantity of water in storage in the aquifers which furnish water to the present wells, and the factors affecting the replenishment and depletion of this storage; (5) the amount of probable increase of storage and recharge by utilizing additional wells.

In all, 3,846 measurements of water level were made in 352 selected observation wells in 1944.

Acknowledgments

The writers are much indebted to the officials of the San Carlos Irrigation District, the Office of Indian Affairs, United States Department of the Interior, the Salt River Valley Water Users Association, the Roosevelt Water Conservation District, the Arizona Edison Electric Co., the Tucson Gas & Electric Co., and the Citizens Utilities Co. of Nogales, and to the owners of many wells in the Santa Cruz and Gila River Basins who furnished information for this report.

GRAHAM COUNTY (SAFFORD VALLEY)

By R. L. Cushman

Ground-water investigations in Safford Valley during 1944 by the Federal Geological Survey consisted of two distinct projects. One was the State cooperative program and the other was a continuation from 1943 of the investigation requested by the Defense Plant Corporation.

The State cooperative program, which is continued from year to year, involved water-level measurements, collection of information for the pumpage inventory of the entire valley, and operation of an experiment station just north of Safford. Under this program 3,148 water-level measurements were made during the year in 152 wells, 3 of which are equipped with water-stage recorders.

The Defense Plant Corporation project involved measurements of water-level and studies of evapo-transpiration by several methods in lower Safford Valley. The water-level measurements made in wells other than the wells used in the State program are not included in this report.

Fluctuations of water level

During 1943 the average ground-water level declined 0.9 foot; in 1944 it declined 0.5 foot. This decline of the ground-water level was a result of deficient rainfall and increased use of ground water. Precipitation during both years was insufficient to provide an adequate river flow to meet the increased irrigation needs occasioned by the war, and therefore ground water was pumped to supplement the surface supply. During 1944 the pumpage amounted to approximately 52,000 acre-feet, or one and one-half times the volume pumped in 1943, and two and one-half times the amount

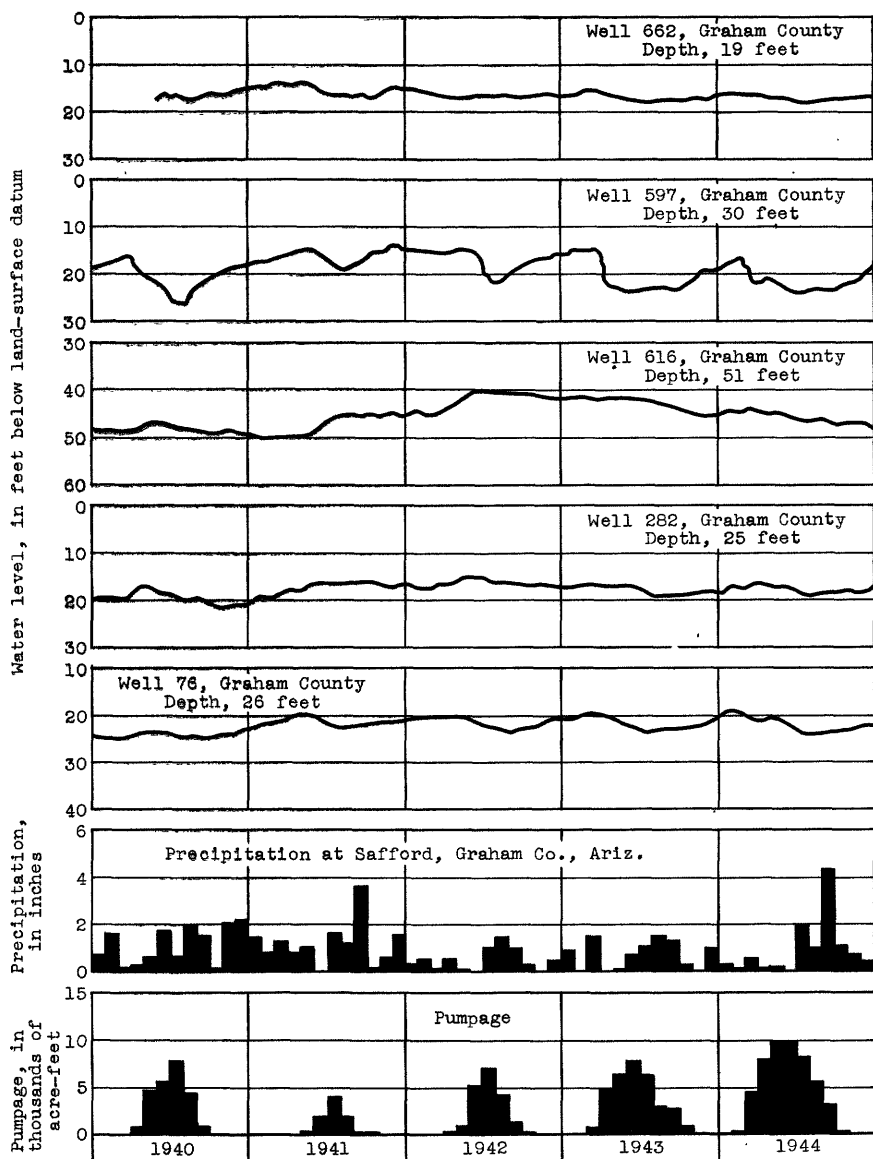


Figure 3.--Graphs showing fluctuations of water level in observation wells in the Safford Valley, Graham County, Arizona.

pumped in 1942. Although the 1944 rainfall was probably normal, about 60 percent of the total fell during the last 4 months of the year and about 40 percent fell between September 23 and 26.

The early heavy draft on ground water to supplement the surface irrigation supply is reflected in the graphs of several typical wells shown in figure 3. Many of the irregularities in the graphs do not indicate regional conditions but are the result of local pumping for irrigation.

Well 662 is situated in the eastern or upstream section of the valley and is not influenced by local pumping. The stage of the river and transpiration by mesquite near the well exercise the greatest influence on water-level fluctuations in this well.

Well 597 is situated in the heaviest pumped area in the valley. The abrupt changes occurring in the graph, caused by two irrigation wells within a 150-yard radius of well 597, do not obscure the general regional trend. There is a definite decline starting near the end of February and continuing into September. The heavy rains of September 23 to 26, which stopped most of the pumping, are indicated by the definite upward swing of the graph.

Well 616 is away from the immediate effects of pumping and near a canal. Except for January the graph trends downward, showing that the loss from the ground-water reservoir exceeded the recharge.

The graph of well 282 shows fluctuations in a well affected by canal and irrigation recharge without the immediate counter effects of nearby pumping. The graph of well 76 shows fluctuations in an area away from pumped wells. The transpiration by the heavy mesquite growth nearby, caused daily as well as seasonal water-level fluctuations in this well, which were indicated by the charts of the water-stage recorder with which the well is equipped.

Well descriptions and water-level measurements

8 (*911, p. 13; *941, p. 11; 949, p. 11; *991, p. 12). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 28	7.54	June 30	8.76	July 14	8.94
Mar. 6	7.55	July 4	8.33	18	8.99
Apr. 18	7.67	7	8.89	19	9.03
May 15	7.90	10	8.91	20	9.00
June 14	8.42	11	8.92	22	8.97
				July 25	8.93
				28	8.92
				Aug. 1	8.97
				4	9.01
				8	9.06

8. U. S. Indian Service--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Aug. 11	9.05	Sept. 1	8.70	Sept. 19	8.80	Oct. 13	7.68
15	9.06	5	8.74	22	8.87	17	7.71
17	9.08	7	8.75	Oct. 1	7.75	20	7.73
22	8.84	9	8.78	3	7.61	24	7.77
24	8.73	12	8.82	6	7.59	27	7.76
26	8.69	15	8.34	10	7.65	31	7.72
29	8.88						

9 (*911, p. 13; *941, p. 11; 949, p. 11; *991, p. 12). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

Water level, in feet below land-surface datum, 1944

Jan. 28	6.44	July 19	8.03	Aug. 22	7.49	Sept. 22	7.77
Mar. 6	6.47	20	7.94	24	7.43	Oct. 1	5.79
Apr. 13	6.67	22	7.89	26	7.39	3	5.91
May 15	6.37	25	7.83	29	7.49	6	6.12
June 14	7.39	28	7.30	Sept. 1	7.54	10	6.32
30	7.78	Aug. 1	7.90	5	7.62	13	6.40
July 4	7.36	4	7.96	7	7.58	17	6.50
7	7.92	8	8.06	9	7.63	20	6.55
10	7.93	11	7.98	12	7.72	24	6.53
11	7.83	15	8.02	15	7.72	27	6.57
14	7.92	17	8.01	19	7.67	31	6.50
18	8.01						

10 (*911, p. 13; 941, p. 11; 949, p. 11; *991, p. 12). U. S. Indian Service. Measurements discontinued after July 6, 1943.

11 (*911, p. 14; *941, p. 11; 949, p. 11; *991, p. 12). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

Water level, in feet below land-surface datum, 1944

Jan. 28	5.03	July 19	6.62	Aug. 22	5.63	Sept. 22	6.33
Mar. 6	5.10	20	6.41	24	5.73	Oct. 1	3.08
May 15	5.47	22	6.46	26	5.76	3	3.62
June 14	5.99	25	6.34	29	5.94	6	4.15
30	6.46	28	6.37	Sept. 1	6.00	10	4.58
July 4	6.54	Aug. 1	6.48	5	6.13	13	4.30
7	6.60	4	6.57	7	6.04	17	4.89
10	6.51	8	6.70	9	6.13	20	4.95
11	6.39	11	6.51	12	6.26	24	4.92
14	6.57	15	6.60	15	6.24	27	5.02
18	6.67	17	6.53	19	6.20	31	4.99

12 (*911, p. 14; *941, p. 11; 949, p. 11; *991, p. 12). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

Water level, in feet below land-surface datum, 1944

Jan. 29	5.30	July 20	6.48	Aug. 24	5.78	Oct. 1	4.13
Mar. 6	5.35	22	6.60	26	5.97	3	4.46
May 15	5.67	25	6.41	29	6.04	6	4.76
June 14	6.20	28	6.56	Sept. 1	6.13	10	5.01
30	6.63	Aug. 1	6.67	5	6.27	13	5.13
July 4	6.76	4	6.76	7	6.13	17	5.18
7	6.80	3	6.94	9	6.27	20	5.23
10	6.63	11	6.62	12	6.40	24	5.26
11	6.51	15	6.75	15	6.39	27	5.27
14	6.76	17	6.51	19	6.34	31	5.10
18	6.89	22	5.55	22	6.48		

13 (*911, p. 14; *941, p. 12; 949, p. 12; *991, p. 13). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

13. U. S. Indian Service--Continued.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 28	9.81	July 20	11.23	Aug. 24	10.73
Mar. 6	9.89	22	11.22	26	10.68
May 15	10.19	25	11.16	29	10.74
June 14	10.72	28	11.13	Sept. 1	10.79
30	11.08	Aug. 1	11.22	5	10.89
July 4	11.15	4	11.28	7	10.86
7	11.22	8	11.37	9	10.90
10	11.24	11	11.29	12	11.00
11	11.18	15	11.33	15	11.03
14	11.26	17	11.32	19	11.00
18	11.31	22	10.76	22	11.04
				Oct. 1	9.57
				3	9.56
				6	9.64
				10	9.80
				13	9.87
				17	9.94
				20	9.98
				24	10.00
				27	9.94
				31	9.83

14 (#911, p. 14; #941, p. 12; 949, p. 12; #991, p. 13). U. S. Indian Service. On San Carlos Indian Reservation, at Calva.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 28	10.36	July 20	11.83	Aug. 24	11.57
Mar. 6	10.54	22	11.83	26	11.48
May 15	10.70	25	11.76	29	11.46
June 14	11.30	28	11.74	Sept. 1	11.46
30	11.58	Aug. 1	11.83	5	11.53
July 4	11.64	4	11.82	7	11.57
7	11.70	8	11.89	9	11.59
10	11.74	11	11.89	12	11.65
11	11.72	15	11.90	15	11.68
14	11.79	17	11.91	19	11.67
18	11.81	22	11.68	22	11.72
				Oct. 1	10.93
				3	10.73
				6	10.64
				10	10.64
				13	10.64
				17	10.65
				20	10.67
				24	10.73
				27	10.62
				31	10.54

17 (#911, p. 15; #941, p. 12; 949, p. 12; #991, p. 13). U. S. Indian Service. On San Carlos Indian Reservation, at Bylas.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 28	6.30	July 20	7.45	Aug. 26	7.21
Mar. 6	6.39	22	7.46	29	7.36
Apr. 18	6.59	25	7.35	Sept. 1	7.48
May 15	6.88	28	7.47	5	7.57
June 14	7.30	Aug. 1	7.66	7	7.46
July 4	7.55	4	7.69	9	7.46
7	7.57	8	7.67	12	7.63
10	7.46	11	7.53	15	7.53
11	7.49	15	7.67	19	7.44
14	7.56	22	7.19	22	7.60
18	7.58	24	7.17		
				Oct. 1	5.30
				3	5.75
				6	6.17
				10	6.56
				13	6.76
				17	6.83
				20	6.93
				24	7.00
				27	6.99
				31	6.79

18 (#911, p. 15; #941, p. 12; 949, p. 12; #991, p. 13). U. S. Indian Service. On San Carlos Indian Reservation, at Bylas.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 28	7.44	July 19	8.56	Aug. 22	8.24
Mar. 6	7.59	20	8.50	24	8.24
Apr. 18	7.80	22	8.52	26	8.25
May 15	8.01	25	8.46	29	8.41
June 14	8.41	28	8.54	Sept. 1	8.52
30	8.61	Aug. 1	8.70	5	8.62
July 4	8.58	4	8.74	7	8.54
7	8.62	8	8.74	9	8.54
10	8.50	11	8.60	12	8.57
11	8.52	15	8.73	15	8.63
14	8.62	17	8.66	19	8.53
18	8.63				
				Oct. 1	8.62
				3	8.49
				6	8.85
				10	7.25
				13	7.62
				17	7.79
				20	7.88
				24	8.07
				27	8.09
				31	7.90

19 (#911, p. 15; 941, p. 12; 949, p. 12; #991, p. 13). U. S. Indian Service. No measurements made in 1944.

20 (*911, p. 16; *941, p. 13; 949, p. 13; *991, p. 13). U. S. Indian Service. On San Carlos Indian Reservation, at Bylas.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	7.93	July 19	9.10	Aug. 22	8.83	Sept. 22	9.17
Mar. 6	8.05	20	9.00	24	8.79	Oct. 1	7.48
Apr. 18	8.25	22	9.02	26	8.81	3	7.60
May 15	8.45	25	8.99	29	8.99	6	7.83
June 14	8.85	28	9.01	Sept. 1	9.02	10	8.08
30	9.04	Aug. 1	9.13	5	9.03	13	8.23
July 4	9.06	4	9.18	7	9.09	17	8.32
7	9.09	8	9.20	9	9.07	20	8.41
10	9.04	11	9.11	12	9.17	24	8.49
11	9.02	15	9.17	15	9.16	27	8.50
14	9.09	17	9.18	19	9.08	31	8.42
18	9.12						

21 (*911, p. 16; *941, p. 13; 949, p. 13; *991, p. 14). U. S. Indian Service. On San Carlos Indian Reservation, at Bylas.

Water level, in feet below land-surface datum, 1944

Jan. 28	10.50	June 14	11.19	July 7	(a)	Oct. 6	b 9.59
Mar. 6	10.40	30	11.36	Oct. 1	b 9.60	10	b 9.59
Apr. 18	10.60	July 4	11.40	3	b 9.60	13	b 9.59
May 15	10.82						

a Tape would not pass obstruction in pipe.

b Well probably plugged.

51 (*911, p. 16; 941, p. 13; 949, p. 13; *991, p. 14). Bert Hinton. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 4 S., R. 22 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	18.57	Apr. 19	(a)	July 14	20.01	Oct. 10	19.12
27	18.16	May 4	18.95	27	20.02	23	18.91
Feb. 12	18.05	17	(a)	Aug. 16	20.78	Nov. 15	18.73
26	18.27	June 2	19.30	29	20.43	30	18.59
Mar. 16	18.64	14	19.88	Sept. 13	20.37	Dec. 20	18.53
Apr. 4	18.47	28	19.80	29	19.96		

a Pumping.

52 (*911, p. 17; 941, p. 13; 949, p. 13; *991, p. 14). Bert Hinton. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 4 S., R. 22 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	(a)	Apr. 19	b 17.88	July 14	(a)	Oct. 10	17.92
27	18.85	May 4	(a)	27	18.66	23	17.66
Feb. 12	18.30	17	b 17.75	Aug. 16	(a)	Nov. 15	17.46
26	17.59	June 2	18.00	29	19.18	30	(a)
Mar. 16	17.15	14	18.52	Sept. 13	19.15	Dec. 20	17.04
Apr. 4	17.19	28	18.34	29	18.81		

a Pumping.

b Well 51 pumping.

55A. J. G. Willis. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 4 S., R. 23 E. On north bank of Goodwin Wash, 50 feet east of county road, 0.25 mile south of Geronimo. Used drilled domestic and stock well, diameter 6 inches, depth 48 feet. Measuring point, top of casing, 1.8 feet above land-surface datum. Equipped with windmill.

Water level, in feet below land-surface datum, 1944

Feb. 15	29.68	June 2	30.55	Aug. 16	(a)	Oct. 23	31.71
Apr. 4	29.41	14	30.82	29	32.20	Nov. 15	31.38
19	29.85	28	(a)	Sept. 13	32.31	30	31.28
May 4	29.88	July 14	31.37	29	32.09	Dec. 20	31.22
17	29.90	27	31.58	Oct. 10	31.83		

a Pumping.

56 (*911, p. 17; 941, p. 13; 949, p. 13; *991, p. 14). Eliza Allen. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 4 S., R. 22 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	41.72	Apr. 19	33.84	July 14	a 26.66	Oct. 10	33.73
27	40.93	May 4	a 24.06	27	a 24.44	23	35.38
Feb. 14	42.15	17	27.14	Aug. 16	33.42	Nov. 15	36.96
26	42.22	June 2	28.34	29	a 22.90	30	37.84
Mar. 16	41.36	14	a 20.48	Sept. 13	31.45	Dec. 20	36.72
Apr. 4	a 35.37	28	31.44	29	30.72		

a Nearby field irrigated recently.

60 (*941, p. 13; 949, p. 13; *991, p. 15). Pat Hinton. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 4 S., R. 22 E. Water level, in feet below land-surface datum, 1944: June 14, 25.60.

71 (*911, p. 18; *941, p. 14; 949, p. 13; *991, p. 15). Ed McEuen. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	17.72	May 26	18.99	July 19	19.56	Sept. 11	19.35
28	17.77	June 1	19.24	21	19.59	15	19.38
Mar. 6	17.91	7	19.29	27	19.73	18	19.49
15	18.22	15	19.28	Aug. 2	20.07	Oct. 4	17.65
Apr. 5	18.75	21	19.30	11	(a)	10	17.98
May 2	19.20	27	19.45	28	19.37	17	18.02
11	18.85	July 5	19.47	Sept. 4	19.34	28	17.94
18	18.85	13	19.69				

a Dry.

72 (*911, p. 18; *941, p. 14; 949, p. 13; *991, p. 15). Ed McEuen. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	3.97	Apr. 19	4.57	June 26	5.22	Aug. 28	4.93
15	4.05	May 4	4.67	July 3	5.16	Sept. 4	5.24
28	3.91	8	4.67	10	5.25	11	5.28
Feb. 8	4.00	15	4.73	17	5.50	18	5.27
17	4.18	22	4.77	24	5.62	25	4.61
Mar. 2	4.23	29	4.89	31	5.76	Oct. 2	3.03
6	4.25	June 5	4.98	Aug. 7	5.90	9	3.83
15	4.39	12	5.12	14	5.93	16	4.09
Apr. 3	4.49	19	5.13	21	3.93	27	4.27

74 (*911, p. 19; 941, p. 14; 949, p. 14; *991, p. 15). Graham County. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 9	4.98	June 5	6.38	July 24	(a)	Sept. 11	6.95
Mar. 2	5.32	12	6.80	31	(a)	18	6.93
Apr. 3	5.58	19	6.88	Aug. 7	(a)	25	6.68
May 4	6.06	26	7.03	14	(a)	Oct. 2	4.96
8	5.95	July 3	(a)	21	6.71	9	5.47
15	5.99	10	(a)	28	6.48	16	5.72
22	6.05	17	(a)	Sept. 4	7.00	27	5.87
29	6.40						

a Dry.

76 (*911, p. 19; 941, p. 15; *949, p. 14; *991, p. 15). E. W. Black. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 4 S., R. 23 E.

Daily noon water level, in feet below land-surface datum, 1944 (From recorder charts)							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	20.72	Jan. 5	20.78	Jan. 9	20.65	Jan. 13	20.68
2	20.74	6	20.75	10	20.63	14	20.62
3	20.75	7	20.74	11	20.65	15	20.58
4	20.78	8	20.71	12	20.68	16	20.58

76. E. W. Black--Continued.

Daily moon water level, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17	20.58	Feb. 12	20.06	Mar. 8	20.44	June 28	a 22.86
18	20.59	13	20.11	9	20.45	July 3	a 23.03
19	20.58	14	20.12	10	20.46	10	a 23.20
20	20.57	15	20.13	11	20.47	17	a 23.40
21	20.56	16	20.16	12	20.47	24	a 23.42
22	20.54	17	20.17	13	20.48	27	a 23.54
23	20.49	18	20.15	20	a 20.53	31	a 23.62
24	20.35	19	20.15	27	a 20.63	Aug. 7	a 23.62
25	19.90	20	20.16	Apr. 3	a 20.51	14	a 23.78
26	19.48	21	20.20	10	a 20.51	21	a 23.83
27	19.11	22	20.21	17	a 20.61	28	a 23.74
28	19.24	23	20.22	24	a 20.62	Sept. 4	a 23.86
29	19.43	24	20.22	27	a 20.56	11	a 23.91
30	19.56	25	20.24	May 1	a 20.62	18	a 23.86
31	19.65	26	20.30	8	a 20.80	25	a 23.69
Feb. 1	19.71	27	20.32	15	a 21.00	26	a 23.67
2	19.75	28	20.35	22	a 21.29	Oct. 2	a 23.22
3	19.78	29	20.35	26	a 21.47	9	a 23.00
4	19.82	Mar. 1	20.36	29	a 21.57	16	a 22.92
5	19.87	2	20.37	June 2	a 21.75	26	a 22.89
6	19.86	3	20.41	5	a 21.86	27	a 22.90
7	19.89	4	20.41	12	a 22.12	Nov. 27	a 22.63
8	19.94	5	20.41	14	a 22.22	30	a 20.46
9	19.97	6	20.43	19	a 22.42	Dec. 20	a 20.51
10	20.01	7	20.45	26	a 22.71	26	a 22.26
11	20.07						

a Tape measurements at odd hours.

77 (*911, p. 20; 941, p. 15; 949, p. 14; *991, p. 16). E. M. Claridge. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	(a)	Apr. 19	(a)	July 14	(a)	Oct. 10	38.21
27	33.97	May 4	(a)	27	(a)	23	(a)
Feb. 14	33.63	17	33.71	Aug. 16	(a)	Nov. 15	37.90
26	(a)	June 2	34.16	29	36.70	30	(a)
Mar. 16	(a)	14	34.58	Sept. 13	36.86	Dec. 20	37.94
Apr. 4	(a)	28	35.02	29	37.16		

a Pumping.

80 (*911, p. 20; 941, p. 15; 949, p. 14; *991, p. 16). Fay Rabb. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	15.07	May 17	(a)	July 24	16.67	Sept. 18	16.44
27	14.99	June 2	(a)	31	(a)	25	16.15
Feb. 14	14.90	14	16.65	Aug. 7	17.37	Oct. 2	15.22
26	15.10	19	15.54	14	16.71	9	15.79
Mar. 16	15.35	26	17.20	21	15.73	16	16.08
Apr. 4	15.26	July 3	(a)	28	16.04	27	16.33
19	15.42	10	16.74	Sept. 4	16.42	Nov. 30	19.57
May 4	(a)	17	16.86	11	16.46	Dec. 20	19.51

a Pumping.

81 (*911, p. 20; 941, p. 15; 949, p. 14; *991, p. 16). Mrs. J. B. Blessing. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 3	26.89	Feb. 23	26.48	Apr. 3	26.91	May 4	27.71
13	26.82	28	26.57	4	26.95	8	27.45
18	26.74	Mar. 6	26.62	10	27.00	15	27.41
27	26.60	13	26.69	17	26.93	17	27.40
Feb. 1	26.54	16	26.69	19	26.90	22	27.94
7	26.67	20	26.73	24	27.33	29	28.33
14	26.65	27	26.79	May 1	27.62	June 2	28.33

81. Mrs. J. B. Blessing--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 5	28.34	July 10	29.32	Aug. 21	29.62	Oct. 2	29.38
12	28.71	17	29.68	30	29.55	9	29.22
14	28.60	24	29.26	Sept. 4	29.58	27	29.07
19	28.56	31	30.05	11	29.69	Nov. 27	(a)
26	29.02	Aug. 7	30.22	18	29.66	Dec. 20	28.56
July 3	28.80	14	29.81	25	29.63		

a Pumping.

82-A. Fay Rabb. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 4 S., R. 23 E. In the southwest corner of field, 1,100 feet north of Fort Thomas School, immediately outside the northwest limits of Fort Thomas. Unused drilled irrigation well, diameter 16 inches, depth 64 feet. Measuring point, top of casing, 1.4 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 15	17.90	Aug. 16	17.70	Sept. 29	16.22	Nov. 15	15.63
28	18.22	29 a	19.04	Oct. 10	15.59	30	15.60
July 27 a	18.86	Sept. 13	17.72	23	15.99	Dec. 20	15.58

a Several buckets of water taken from well recently.

91 (*911, p. 21; 941, p. 15; 949, p. 14; *991, p. 17). Ben Montierth. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	49.09	Apr. 19	(a)	July 27	51.72	Oct. 10	51.66
27	48.90	May 4	(a)	Aug. 16	50.02	23	51.03
Feb. 14	48.66	June 2	(a)	29	51.58	Nov. 15	50.56
Mar. 6	48.51	14	(a)	Sept. 13	51.77	30	50.24
16	48.45	July 14	52.28	29	51.79	Dec. 20	50.17
Apr. 4	48.67						

a Pumping.

92 (*911, p. 21; 941, p. 15; 949, p. 14; *991, p. 17). Wendell Montierth. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	58.42	Apr. 19	(a)	July 27	61.17	Oct. 10	60.27
27	58.27	May 4	(a)	Aug. 16	60.80	23	60.90
Feb. 12	58.13	17	(a)	29	(a)	Nov. 15	59.71
Mar. 6	57.90	June 2	(a)	Sept. 13	60.94	30	59.54
16	57.85	14	(a)	29	60.39	Dec. 20	59.43
Apr. 4	57.34	July 14	(a)				

a Pumping.

93 (*911, p. 21; 941, p. 16; 949, p. 14; *991, p. 17). Graham County. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 10	13.16	June 15	14.07	July 31	14.62	Sept. 11	14.40
12	13.14	21	14.19	Aug. 3	14.62	14	14.46
28	13.05	26	14.46	7	14.65	18	14.41
Feb. 4	12.99	29	14.55	10	14.68	21	14.41
Mar. 4	12.95	July 3	14.45	14	14.60	29	13.86
6	12.95	6	14.54	17	14.60	Oct. 4	13.55
Apr. 7	13.07	10	14.69	23	14.38	10	13.32
May 8	13.13	13	14.79	28	14.33	12	13.29
18	13.10	17	14.37	31	14.33	17	13.45
26	13.59	20	14.73	Sept. 4	14.35	19	13.46
June 2	13.82	24	14.74	7	14.42	26	13.38
7	13.92	27	14.66				

94 (*911, p. 21; 941, p. 16; 949, p. 15; *991, p. 17). Graham County. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 10	9.29	June 15	10.25	July 31	10.76	Sept. 11	10.56
12	9.27	21	10.31	Aug. 3	10.78	14	10.61
28	9.19	26	10.50	7	10.90	18	10.53
Feb. 4	9.13	29	10.59	10	10.76	21	10.54
Mar. 4	9.14	July 3	10.56	14	10.70	29	9.35
6	9.14	6	10.62	17	10.68	Oct. 4	9.16
Apr. 7	9.29	10	10.70	23	10.36	10	9.28
May 8	9.37	13	10.78	28	10.40	12	9.33
18	9.43	17	10.97	31	10.46	17	9.44
26	9.73	20	10.78	Sept. 4	10.50	19	9.46
June 2	9.95	24	10.76	7	10.56	26	9.49
7	10.08	27	10.72				

95 (*911, p. 22; 941, p. 16; 949, p. 15; *991, p. 18). Graham County. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 10	10.01	June 15	11.11	July 27	11.52	Sept. 7	11.30
12	9.99	21	11.19	31	11.62	11	11.45
28	9.97	26	11.30	Aug. 3	11.66	14	11.48
Feb. 4	9.92	29	11.35	7	11.71	18	11.34
Mar. 4	10.03	July 3	11.35	10	11.55	21	11.32
6	10.04	6	11.42	14	11.55	29	8.06
Apr. 8	10.25	10	11.42	17	11.44	Oct. 4	9.23
May 8	10.41	13	11.53	23	10.88	12	9.79
18	10.56	17	11.61	28	11.15	17	9.95
26	10.67	20	11.44	31	11.28	19	10.00
June 2	10.83	24	11.51	Sept. 4	11.49	28	10.04
7	10.97						

98 (*911, p. 23; 941, p. 16; 949, p. 15; *991, p. 18). Graham County. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	3.82	May 15	4.45	July 10	5.54	Sept. 4	5.62
27	3.76	22	4.54	17	5.73	11	5.72
28	3.75	29	4.78	24	5.58	18	5.40
Feb. 4	3.73	June 5	4.97	31	5.73	25	5.20
Mar. 4	3.77	12	5.18	Aug. 7	5.85	Oct. 2	3.32
6	3.83	19	5.30	14	5.67	9	3.94
Apr. 7	4.01	26	5.46	21	6.32	16	4.23
May 9	4.31	July 3	5.45	28	5.47	27	4.45

100 (*911, p. 23; 941, p. 17; 949, p. 15; *991, p. 18). G. N. Higgins. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 28	9.90	June 2	11.55	Sept. 29	10.96	Nov. 15	11.01
Mar. 6	10.09	July 27	12.03	Oct. 10	10.88	30	10.97
Apr. 4	10.95	Aug. 16	(a)	23	11.16	Dec. 20	10.95
May 4	11.18	Sept. 13	12.21				

a Pumping.

105 (*911, p. 24; *941, p. 17; 949, p. 15; *991, p. 18). Edward McEuen. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	42.92	Apr. 19	42.42	July 27	45.59	Oct. 10	45.94
27	42.16	May 4	42.62	Aug. 16	45.74	23	45.81
Feb. 12	42.10	17	42.90	29	45.99	Nov. 15	45.97
Mar. 6	42.20	June 2	43.24	Sept. 13	45.88	30	46.06
16	42.23	14	43.67	29	45.97	Dec. 20	46.01
Apr. 5	42.31	July 14	45.54				

106 (*911, p. 24; 941, p. 17; 949, p. 15; *991, p. 19). L. L. Morrison. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 4 S., R. 23 E. No measurements made in 1944.

107 (*911, p. 24; 941, p. 17; 949, p. 15; *991, p. 19). Port McEuen. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	37.78	May 4	38.53	Aug. 16	40.98	Oct. 23	39.21
27	37.90	June 14	39.62	29	41.37	Nov. 15	40.09
Mar. 6	38.04	28	40.09	Sept. 13	41.44	30	40.81
Apr. 18	38.35	July 27	40.91	Oct. 10	40.36	Dec. 20	40.73

108 (*911, p. 25; 941, p. 17; 949, p. 15; *991, p. 19). W. O. Tyler. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Mar. 16	14.90	June 14	(a)	Aug. 16	16.92	Oct. 23	(a)
Apr. 19	14.90	28	(a)	Sept. 13	17.29	Nov. 15	16.44
May 4	15.25	July 14	(a)	29	17.04	30	16.52
17	15.47	28	17.34	Oct. 10	16.57	Dec. 20	16.57

a Pumping.

122-A. Elliot Montierth. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 4 S., R. 23 E., 50 feet northeast of U. S. Highway 70, 1.3 miles southeast of Geronimo. Used drilled irrigation well, diameter 14 inches, depth 55 feet. Measuring point, top of casing, 0.3 foot above land-surface datum. Equipped with turbine and tractor.

Water level, in feet below land-surface datum, 1944							
Feb. 17	31.21	May 17	33.50	July 27	34.47	Oct. 10	33.57
Mar. 16	31.33	June 2	(a)	Aug. 16	34.97	23	(a)
Apr. 4	(a)	14	(a)	29	34.15	Nov. 15	33.12
19	32.20	28	34.71	Sept. 13	34.06	30	32.99
May 4	32.98	July 14	(a)	29	33.79	Dec. 20	32.74

a Pumping.

124-A (*991, p. 19). Mr. Willis. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 4 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Jan. 13	33.72	Apr. 20	33.90	July 14	36.47	Oct. 10	36.66
27	33.62	May 4	33.51	27	35.57	23	(a)
Feb. 12	33.50	17	34.38	Aug. 16	(a)	Nov. 15	35.75
Mar. 6	33.44	June 2	34.90	29	35.46	30	34.68
16	33.50	14	35.24	Sept. 13	35.65	Dec. 20	34.39
Apr. 4	33.46	28	35.38	29	36.39		

a Pumping.

126 (*911, p. 25; 941, p. 17; 949, p. 15; *991, p. 19). YL Ranch. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 5 S., R. 21 E. Water level, in feet below land-surface datum, 1944: June 14, 72.60.

143 (*911, p. 25; 941, p. 18; 949, p. 16; *991, p. 19). R. S. Snedigar. NW $\frac{1}{4}$ S $\frac{1}{4}$ sec. 25, T. 5 S., R. 22 E. Water level, in feet below land-surface datum, 1944: May 4, 47.85.

156 (*911, p. 25; 941, p. 18; 949, p. 16; *991, p. 20). Roy Layton. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Jan. 13	11.38	Apr. 20	(a)	July 28	13.49	Oct. 10	12.41
26	11.59	May 17	(a)	Aug. 16	b 14.50	23	13.09
Feb. 11	11.41	June 2	12.78	28	13.30	Nov. 15	12.39
25	10.93	14	(a)	Sept. 13	13.44	30	11.69
Mar. 16	11.14	28	(a)	29	(a)	Dec. 20	11.87
Apr. 5	11.71	July 14	13.49				

a Pumping.

b Pumping stopped a few hours previously.

157 (*991, p. 20). M. J. Ferguson. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	13.91	Mar. 13	13.70	May 17	14.82	Aug. 1	16.27
12	13.98	16	13.73	22	14.96	7	16.29
13	13.97	20	13.71	29	15.14	14	16.33
18	13.94	27	14.49	June 2	15.36	21	16.24
25	13.99	Apr. 3	13.91	5	15.46	29	16.01
26	14.09	5	13.96	13	15.48	Sept. 5	16.10
Feb. 1	14.00	10	14.00	14	15.52	12	16.15
7	13.76	17	14.08	19	15.59	19	16.25
11	13.70	20	14.11	26	15.88	28	16.00
14	13.64	24	14.19	July 3	16.07	Oct. 2	15.79
23	13.55	May 1	14.50	10	16.10	16	15.76
25	13.60	4	14.62	17	16.22	Nov. 30	13.99
28	13.62	8	15.08	24	16.28	Dec. 20	14.07
Mar. 6	13.67	15	14.74				

158 (*911, p. 26; 941, p. 18; 949, p. 16; *991, p. 20). W. C. Rhodes. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	35.82	Apr. 19	37.45	July 14	42.08	Oct. 10	a 43.99
26	35.69	May 4	a 41.56	28	41.89	23	43.59
Feb. 11	35.53	17	a 40.40	Aug. 16	(b)	Nov. 15	a 44.60
25	35.52	June 2	43.82	29	c 41.93	30	44.13
Mar. 16	35.67	14	40.83	Sept. 13	42.07	Dec. 20	44.09
Apr. 5	37.40	28	a 43.86	29	42.52		

a Nearby irrigation well pumping.

b Pumping.

c Nearby irrigation well pumped recently.

160 (*911, p. 26; *941, p. 18; 949, p. 16; *991, p. 20). W. O. Tyler. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	24.64	May 4	25.68	July 14	28.71	Oct. 10	28.76
27	24.74	17	(a)	27	28.94	23	29.08
Feb. 12	24.60	June 2	27.19	Aug. 16	28.99	Nov. 15	28.83
Mar. 16	24.88	14	(a)	Sept. 13	29.14	30	29.03
Apr. 5	25.09	28	28.37	29	29.09	Dec. 20	29.09
19	25.34						

a Pumping.

164 (*911, p. 26; *941, p. 18; 949, p. 16; *991, p. 20). Don Steele. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 11, T. 5 S., R. 23 E. Measurements discontinued after Oct. 26, 1942.

166 (*911, p. 26; *941, p. 18; *949, p. 16; *991, p. 20). Mrs. Albert Todd. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 5 S., R. 23 E. Well filled with trash; measurements discontinued after May 23, 1943.

194 (*911, p. 27; 941, p. 18; 949, p. 16; *991, p. 21). Virgil McEuen. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	18.68	Feb. 28	18.38	Apr. 19	18.30	June 15	18.82
12	18.54	Mar. 6	18.36	24	18.29	16	18.82
19	18.55	13	18.26	May 1	18.36	21	18.94
26	18.42	16	18.28	4	18.39	29	19.11
27	18.46	20	18.32	11	18.42	July 6	19.19
Feb. 3	18.35	27	18.11	18	18.47	13	(a)
8	18.33	Apr. 3	18.17	26	18.56	20	(a)
15	18.32	7	18.26	30	18.57	27	(a)
23	18.40	10	18.24	June 2	18.63	Aug. 2	(a)
25	18.32	18	18.28	8	18.68	9	(a)

a Dry at 19.3 feet.

194. Virgil McEuen--Continued.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Aug. 16	(a)	Sept. 5	(a)	Sept. 29	(a)
23	(a)	20	(a)	Oct. 5	(a)

a Dry at 19.3 feet.

195 (*911, p. 27; *941, p. 18; 949, p. 16; *991, p. 21). Fay Rabb. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 5 S., R. 23 E.

Water level, in feet below land-surface datum, 1944					
Jan. 3	15.97	Apr. 5	15.96	June 28	16.98
13	(a)	17	16.06	July 14	17.28
27	15.93	20	16.04	21	17.39
28	15.97	May 4	16.21	28	17.41
Feb. 11	15.91	18	16.40	Aug. 16	17.22
25	15.87	June 14	16.32	24	16.36
Mar. 16	15.90	16	16.84	28	17.36
				Sept. 13	17.39
				Oct. 12	16.48
				18	16.48
				23	16.53
				Nov. 15	16.41
				30	16.37
				Dec. 20	16.35

a Tape would not pass obstruction in casing.

198-A (*991, p. 21). C. J. Farrington. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Jan. 3	21.92	Apr. 21	21.84	July 14	23.06
Feb. 11	21.67	May 4	22.01	21	23.15
15	21.64	18	22.18	28	23.20
25	21.67	June 2	22.48	Aug. 18	23.37
Mar. 16	21.67	14	22.67	24	23.28
17	21.63	16	22.68	28	23.24
Apr. 15	21.78	28	22.88	Sept. 13	23.29
				Sept. 29	23.12
				Oct. 10	22.81
				18	22.58
				23	22.73
				Nov. 15	22.46
				30	22.31
				Dec. 20	22.19

199 (*991, p. 21). Joe Morgan. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Jan. 12	40.02	Apr. 19	(a)	July 15	(a)
26	39.98	May 4	40.49	28	(a)
Feb. 15	40.16	18	(a)	Aug. 16	(a)
25	40.30	June 2	(a)	30	42.15
Mar. 16	40.12	15	41.40	Sept. 12	42.19
Apr. 7	(a)	28	41.52	30	41.48
				Oct. 11	41.72
				23	42.34
				Nov. 14	41.97
				29	41.69
				Dec. 21	41.64

a Pumping.

200 (*911, p. 27; 941, p. 18; 949, p. 16; *991, p. 22). J. E. Thatcher. SE $\frac{1}{4}$ S $\frac{1}{4}$ sec. 20, T. 5 S., R. 24 E. New measuring point beginning May 12, 1944, top of wood cover at pump base, 0.7 foot above old measuring point and 0.7 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944					
Jan. 7	18.68	Mar. 13	18.20	May 12	18.55
12	18.24	16	18.32	18	18.54
14	18.78	21	18.17	26	18.47
20	18.88	28	18.14	30	18.22
26	18.45	Apr. 3	18.14	June 2	18.65
27	18.78	7	18.31	8	18.68
Feb. 3	18.58	10	18.18	16	18.90
8	18.67	18	18.21	22	19.08
15	19.83	19	18.43	29	19.18
24	18.72	25	18.38	July 6	19.29
28	18.67	May 1	18.40	13	19.69
Mar. 6	18.56	4	18.52		
				Sept. 5	(a)
				20	(a)
				29	(a)
				Oct. 5	(a)
				Dec. 21	19.13

a Dry at 20.0 feet.

202 (*911, p. 27; *941, p. 19; 949, p. 16; *991, p. 22). A. D. Nelson. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 5 S., R. 24 E.

202. A. D. Nelson--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	36.69	Apr. 19	36.23	July 15	37.74	Sept. 30	37.99
26	36.56	May 4	36.27	28	37.85	Oct. 11	38.21
Feb. 15	36.50	18	36.28	Aug. 16	37.92	23	38.16
25	36.40	June 2	36.90	30	38.12	Nov. 14	38.07
Mar. 16	36.18	15	37.09	Sept. 12	38.29	29	38.19
Apr. 7	36.11	28	37.32				

205 (*911, p. 27; 941, p. 19; 949, p. 16; *991, p. 22). W. B. Marshall. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	25.75	Apr. 19	25.37	July 15	26.90	Oct. 11	27.47
26	25.65	May 4	25.30	Aug. 16	27.45	23	27.56
Feb. 15	25.46	18	25.47	30	27.42	Nov. 14	27.61
25	25.43	June 2	25.88	Sept. 12	27.49	29	27.30
Mar. 16	25.20	15	26.20	30	28.25	Dec. 21	27.29
Apr. 7	25.23	28	26.47				

206 (*911, p. 28; 941, p. 19; 949, p. 16; *991, p. 22). J. D. Colvin. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	19.66	Apr. 19	(a)	July 15	20.70	Oct. 11	21.46
26	19.50	May 4	19.55	28	20.91	23	21.51
Feb. 15	19.71	18	19.35	Aug. 16	21.38	Nov. 14	21.54
25	19.77	June 2	19.77	30	21.00	29	21.42
Mar. 16	19.35	15	20.03	Sept. 12	21.29	Dec. 21	20.99
Apr. 7	19.52	28	20.35	30	21.55		

a Pumping.

207 (*911, p. 28; *941, p. 19; 949, p. 16; *991, p. 22). Lamar Kempton. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 5 S., R. 24 E. Measurements discontinued after Sept. 17, 1943.

208 (*911, p. 28; 941, p. 19; 949, p. 16; *991, p. 22). L. W. Farrington. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	23.76	Apr. 20	23.86	July 14	25.05	Oct. 10	24.53
26	23.67	May 4	24.03	28	25.09	23	24.18
Feb. 11	23.59	17	24.14	Aug. 16	25.12	Nov. 15	24.09
25	23.52	June 2	24.46	28	24.70	30	24.01
Mar. 16	23.58	14	24.72	Sept. 13	24.88	Dec. 20	23.97
Apr. 5	23.65	28	24.97	29	25.04		

210 (*911, p. 28; *941, p. 19; 949, p. 16; *991, p. 23). Boyd Hawkins. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	33.59	Apr. 21	34.32	July 14	35.59	Oct. 10	34.01
26	33.26	May 4	34.78	28	34.78	23	33.96
Feb. 12	33.02	18	34.88	Aug. 16	35.89	Nov. 15	33.73
25	32.94	June 2	35.12	28	34.72	30	34.63
Mar. 16	33.02	14	35.40	Sept. 13	34.79	Dec. 20	34.54
Apr. 5	33.80	28	35.55	29	34.10		

211 (*911, p. 28; 941, p. 19; 949, p. 16; *991, p. 23). Producers Ginning Co. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 5 S., R. 24 E. Water levels, in feet below land-surface datum, 1944: Jan. 27, 23.35; Mar. 6, 23.18; Nov. 30, 23.47; Dec. 20, 23.42.

212 (*911, p. 28; 941, p. 20; 949, p. 17; *991, p. 23). Graham County. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 5 S., R. 24 E.

212. Graham County--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	20.99	Mar. 6	20.83	May 25	21.62	June 28	22.30
28	20.99	May 20	21.57	June 7	21.82		

213 (*911, p. 29; 941, p. 20; 949, p. 17; *991, p. 23). Graham County. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 5 S., R. 24 E. Measurements discontinued after June 29, 1943.

214 (*911, p. 29; 941, p. 20; 949, p. 17; *991, p. 23). Graham County. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 1	14.07	Mar. 6	13.57	May 18	14.24	Aug. 24	14.31
12	13.67	21	13.72	June 21	14.80	Oct. 21	14.17
28	13.69	Apr. 22	13.98	July 22	15.03		

216 (*911, p. 30; 941, p. 20; 949, p. 17; *991, p. 23). Graham County. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 12	6.95	Feb. 10	6.69	Apr. 19	7.01	July 18	8.46
15	6.87	Mar. 6	6.61	May 16	7.38	Aug. 22	7.28
28	6.83	13	6.75	June 16	7.99		

217 (*911, p. 30; 941, p. 20; 949, p. 17; *991, p. 24). Graham County. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 12	3.89	Feb. 10	3.54	Apr. 19	3.88	July 18	5.64
15	3.90	Mar. 6	3.58	May 16	4.27	Aug. 22	4.58
28	3.79	13	3.57	June 16	5.05		

218 (*911, p. 30; *941, p. 21; 949, p. 17; *991, p. 24). Graham County. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 12	4.99	Feb. 10	4.43	Apr. 20	4.86	July 18	6.94
15	5.03	Mar. 6	a 4.20	May 16	5.21	Aug. 23	5.94
28	a 4.80	13	4.47	June 16	6.10		

a Surface water standing nearby.

220 (*911, p. 30; 941, p. 21; 949, p. 17; *991, p. 24). Lionel Hancock. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 12	14.49	Apr. 19	14.14	July 15	16.50	Oct. 11	15.38
26	15.15	May 4	12.81	28	16.58	23	15.84
Feb. 15	15.72	18	14.14	Aug. 16	16.02	Nov. 14	(a)
25	15.55	June 2	15.10	30	13.53	29	16.19
Mar. 16	15.33	15	15.56	Sept. 12	13.38	Dec. 21	(a)
Apr. 7	15.57	28	15.96	30	14.78		

a Pumping.

222 (*911, p. 31; 941, p. 21; 949, p. 17; *991, p. 24). Dave Hawkins. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33, T. 5 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Jan. 12	24.07	Apr. 19	23.94	July 15	24.71	Oct. 11	26.14
26	24.29	May 4	23.94	28	24.57	23	26.42
Feb. 15	23.53	18	23.71	Aug. 16	24.84	Nov. 14	26.40
25	24.16	June 2	23.92	30	25.11	29	26.17
Mar. 16	23.89	15	(a)	Sept. 12	25.26	Dec. 20	26.27
Apr. 7	23.68	28	24.25	30	25.62		

a Pumping.

223 (*911, p. 31; 941, p. 21; 949, p. 17; *991, p. 25). E. E. Hancock. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 5 S., R. 24 E. Measurements discontinued after Apr. 13, 1943. See well 223-A for further measurements.

223-A. Ira Hancock. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 5 S., R. 24 E. At south end of concrete tank, 50 feet northwest of red brick house, 250 feet west of Pima-Eden road, 0.6 mile south of Eden. Used dug domestic well, diameter 48 inches, depth 35 feet. Measuring point, top of north side of concrete curb, 1.3 feet above land-surface datum and 2,772.82 feet above mean sea level.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
May 20, 1943	32.11	Nov. 22, 1943	32.40	July 28, 1944	32.94
June 3	(a)	Dec. 6	(a)	Aug. 16	32.93
17	(a)	21	32.31	Sept. 12	33.52
29	33.06	Jan. 12, 1944	31.69	30	33.01
July 28	32.96	26	32.09	Oct. 11	32.92
Aug. 11	32.34	Feb. 15	31.60	23	33.00
30	32.62	25	31.81	Nov. 14	32.87
Sept. 17	(a)	Apr. 7	31.90	19	33.06
Oct. 6	32.00	May 18	31.74	Dec. 21	(b)
21	32.75				

a Pumping.

b Well being repaired.

259. Jesse Udall. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 6 S., R. 24 E. On east bank of diversion ditch, 25 feet north of Pima-Eden road, 1.5 miles northwest of Bryce School, 3.7 miles northwest of Pima. Used drilled irrigation well, diameter 16 inches, depth 60 feet. Measuring point, hole on east side of pump base, 1.6 feet above land-surface datum and 2,805.75 feet above mean sea level.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
May 3, 1943	24.97	Jan. 26, 1944	25.90	July 15, 1944	(a)
June 16	26.95	Feb. 15	25.60	28	28.14
29	27.37	25	25.17	Aug. 16	27.96
July 28	26.71	Mar. 16	24.95	30	27.78
Aug. 16	26.78	Apr. 7	25.75	Sept. 12	27.86
30	27.06	19	26.21	30	27.82
Oct. 7	27.08	May 4	(a)	Oct. 11	27.70
21	27.07	18	27.46	23	27.67
Nov. 8	26.90	June 2	(a)	Nov. 14	27.17
22	26.51	14	(a)	27	26.03
Dec. 6	26.18	28	(a)	Dec. 21	25.89
21	26.01				

a Pumping.

262 (*911, p. 31; 941, p. 21; 949, p. 17; *991, p. 25). J. Hancock. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	16.34	Apr. 7	16.04	July 15	17.75	Sept. 30	17.29
18	16.37	27	16.26	25	17.62	Oct. 11	16.91
26	16.46	May 4	16.43	28	17.60	23	17.24
Feb. 14	16.22	19	16.81	Aug. 15	17.49	26	17.30
15	16.20	23	16.91	26	16.92	Nov. 14	17.11
25	15.86	June 14	17.29	Sept. 12	17.41	29	16.68
Mar. 16	15.95	23	17.36	29	16.47	Dec. 21	16.22
28	15.86	28	17.52				

264 (*911, p. 31; 941, p. 21; *949, p. 18; *991, p. 25). J. Hancock. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 6 S., R. 24 E.

264. J. Hancock--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	13.28	Apr. 19	13.20	July 15	14.60	Oct. 11	13.64
26	13.20	May 4	13.20	28	14.57	23	14.04
Feb. 15	13.34	18	13.58	Aug. 16	14.30	Nov. 14	13.96
25	12.81	June 2	13.93	30	14.10	29	13.93
Mar. 16	12.98	14	(a)	Sept. 12	14.01	Dec. 21	13.04
Apr. 7	13.00	28	14.37	30	14.17		

a Pumping.

267 (*911, p. 32; 941, p. 21; 949, p. 18; *991, p. 25). Wm. Carpenter. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	23.43	Mar. 8	20.71	May 17	a 25.04	July 27	26.39
7	23.37	14	21.39	18	a 25.04	Aug. 3	26.89
12	23.32	16	21.59	19	a 25.37	9	27.11
13	23.34	21	21.87	25	24.73	18	26.18
20	23.26	28	22.66	30	24.83	23	25.74
26	23.14	Apr. 3	22.41	June 2	25.10	29	25.29
28	23.17	7	22.53	8	a 26.34	Sept. 7	26.67
Feb. 3	22.95	12	22.57	14	a 26.79	13	26.01
8	23.08	18	22.53	16	26.46	20	25.48
15	22.64	19	22.54	22	26.74	29	25.18
24	22.56	25	22.51	29	26.53	Oct. 5	24.58
25	22.58	May 2	22.74	July 5	26.78	28	23.96
29	22.55	4	23.01	11	26.96	Nov. 29	24.22
Mar. 7	20.36	12	23.76	20	26.91	Dec. 21	24.24

a Nearly well pumping.

269-A (*991, p. 25). Silas Jarvis. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	24.56	May 4	23.07	July 28	25.43	Oct. 16	25.13
26	24.41	17	23.23	Aug. 16	25.66	23	24.97
Feb. 11	23.48	June 2	23.98	28	25.67	Nov. 15	24.37
Mar. 16	22.43	15	24.15	Sept. 13	(a)	30	24.45
Apr. 5	(a)	28	24.61	29	25.49	Dec. 20	24.53
20	22.78	July 14	24.98				

a Pumping.

270-A (*991, p. 26). M. J. Ferguson. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	51.50	Apr. 20	51.20	July 14	52.51	Oct. 10	53.03
26	51.35	May 4	51.53	Aug. 16	52.37	23	52.96
Feb. 11	51.16	17	51.72	28	53.10	Nov. 15	52.71
25	51.02	June 2	52.00	Sept. 13	53.23	30	52.59
Mar. 16	50.90	14	52.17	29	53.16	Dec. 20	52.51
Apr. 5	50.94	28	52.34				

a Pumping.

273 (*911, p. 32; *941, p. 22; 949, p. 18; *991, p. 26). Eldon Palmer. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	41.81	Apr. 20	45.55	July 14	(a)	Oct. 10	44.63
26	41.81	May 4	45.68	28	(a)	23	43.55
Feb. 11	41.67	17	45.86	Aug. 16	45.22	Nov. 15	42.71
25	41.61	June 2	46.25	28	44.37	30	42.47
Mar. 16	42.94	14	46.49	Sept. 13	44.68	Dec. 20	42.42
Apr. 5	(a)	28	(a)	29	44.03		

a Pumping.

275 (*911, p. 33; 941, p. 22; 949, p. 18; *991, p. 26). Lamar Bellman. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	22.68	Apr. 20	(a)	July 14	(a)
26	22.65	May 4	(a)	28	24.34
Feb. 11	22.75	17	(a)	Aug. 16	25.10
25	22.04	June 2	(a)	28	24.15
Mar. 16	21.75	14	(a)	Sept. 13	24.26
Apr. 5	(a)	28	(a)	29	24.03
				Oct. 10	23.67
				23	23.38
				Nov. 15	22.89
				30	22.78
				Dec. 20	22.76

a Pumping.

276-A (*991, p. 26). M. J. Ferguson. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	35.24	Apr. 20	33.95	July 14	(a)
26	35.00	May 4	33.58	28	38.30
Feb. 11	33.90	17	34.60	Aug. 16	36.38
25	33.66	June 2	(a)	28	36.40
Mar. 16	33.78	14	(a)	Sept. 13	36.21
Apr. 5	33.00	28	45.28	29	36.27
				Oct. 10	37.44
				23	35.71
				Nov. 15	35.32
				30	34.99
				Dec. 20	35.12

a Pumping.

279 (*911, p. 33; 941, p. 22; 949, p. 18; *991, p. 26). Howard McBride. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	4.88	Mar. 7	4.20	Apr. 28	4.89
20	4.97	16	4.82	May 4	5.16
26	5.13	23	5.13	9	4.85
Feb. 11	4.90	Apr. 5	3.36	18	5.48
12	4.92	11	4.78	23	5.72
18	5.06	20	3.94	June 2	5.80
				Dec. 21	5.03
				Aug. 12	6.28
				25	6.86
				30	6.54
				30	6.68

282 (*911, p. 33; 941, p. 22; 949, p. 18; *991, p. 27). Guy Anderson. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	17.18	Apr. 18	16.23	June 30	18.06
26	16.82	27	16.45	July 11	18.35
Feb. 18	16.79	28	16.47	15	18.47
25	16.91	May 9	16.60	25	18.82
Mar. 7	16.76	23	16.95	27	18.77
16	16.32	26	17.07	Aug. 10	18.98
23	16.47	June 14	17.57	15	18.81
27	16.58	17	17.53	28	18.67
Apr. 11	16.24	28	17.98	Sept. 13	19.03
				26	17.63
				29	18.49
				Oct. 10	18.76
				23	18.16
				26	18.13
				Nov. 14	17.91
				27	18.00
				Dec. 20	17.96

285 (*911, p. 33; 941, p. 22; 949, p. 18; *991, p. 27). Guy Anderson. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	28.69	Apr. 21	27.67	July 28	32.20
26	28.81	May 4	(a)	Aug. 15	32.06
Feb. 11	28.51	18	(a)	28	31.92
25	28.50	June 2	(a)	Sept. 13	32.01
Mar. 16	29.60	14	(a)	29	31.85
Apr. 6	28.80	July 15	33.43	Dec. 20	29.81
				Nov. 14	29.97
				30	29.84
				23	31.46

a Pumping.

289 (*949, p. 18; *991, p. 27). W. J. Preston. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 6 S., R. 24 E.

289. W. J. Preston--Continued.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	35.45	Mar. 16	33.94	May 9	33.07
26	35.29	23	33.97	18	(a)
Feb. 12	35.23	Apr. 6	33.84	23	33.30
19	33.80	11	34.09	June 2	33.45
25	(a)	20	33.51	14	(a)
Mar. 7	33.95	28	33.26	17	33.92
				Dec. 20	(a)

a Pumping.

298 (#911, p. 34; 941, p. 23; 949, p. 18; #991, p. 27). Joe Rogers.
NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 25, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	13.40	Apr. 21	15.95	July 27	17.75
26	12.91	May 18	16.23	Aug. 15	(a)
Feb. 11	(a)	June 2	(a)	28	16.70
25	(a)	14	(a)	Sept. 12	(a)
Mar. 16	(a)	July 15	17.20	29	16.29
Apr. 6	14.42			Dec. 20	16.09

a Pumping.

302-A (#991, p. 28). Mattice Bros. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 6 S., R. 24 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	(a)	Apr. 21	46.48	July 15	(a)
26	45.59	May 4	45.17	27	47.25
Feb. 11	44.86	18	44.98	Aug. 15	47.30
25	44.01	June 2	(a)	28	47.55
Mar. 16	44.45	14	45.77	Sept. 12	47.68
Apr. 6	45.65	28	(a)	29	47.73
				Dec. 20	47.76

313 (#911, p. 34; 941, p. 23; 949, p. 19; #991, p. 28). Jack Bryce.
NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 12	58.98	Apr. 19	61.78	July 15	64.10
26	58.91	May 4	(b)	28	61.95
Feb. 15	58.70	18	(a)	Aug. 16	62.32
25	58.43	June 2	(a)	30	61.79
Mar. 16	57.98	15	61.68	Sept. 12	62.18
Apr. 7	(a)	28	(a)	30	62.17
				Dec. 21	61.69

a Pumping.

b Well being repaired.

318 (#941, p. 23; 949, p. 19; #991, p. 28). Vance Marshall.
NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	19.57	May 4	(a)	July 26	23.72
26	19.84	18	22.05	Aug. 15	24.19
Feb. 25	17.45	June 2	(a)	28	24.10
Mar. 16	(a)	14	(a)	Sept. 12	24.23
Apr. 7	21.57	28	25.00	30	24.07
19	21.30	July 15	25.15	Dec. 21	20.52

a Pumping.

320 (#911, p. 35; 941, p. 23; 949, p. 19; #991, p. 28). Vance Marshall.
SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 13	14.17	Feb. 25	13.28	Apr. 19	(a)
26	14.44	Mar. 16	b 14.28	May 18	b 17.30
Feb. 15	12.96	Apr. 7	b 15.65	June 2	(a)
				July 15	18.49

a Pumping.

b Nearby well pumping.

320. Vance Marshall--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	16.52	Sept. 12	16.08	Oct. 25	15.84	Nov. 29	14.85
Aug. 15	16.50	30	14.95	Nov. 14	15.00	Dec. 21	15.09
28	15.74	Oct. 11	(b)				

b Nearby well pumping.

321 (*911, p. 35; 941, p. 23; 949, p. 19; *991, p. 29). Graham County. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	8.24	Mar. 6	7.95	May 10	8.50	July 14	9.76
20	8.28	7	7.97	24	8.58	25	9.65
28	8.55	23	7.87	June 14	9.27	Aug. 8	9.89
Feb. 12	7.71	Apr. 4	7.89	29	9.55	Sept. 16	9.54
18	7.86	19	8.10				

322 (*911, p. 35; *941, p. 24; 949, p. 19; *991, p. 29). Bryce Bros. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	7.25	Mar. 6	7.24	May 10	7.62	July 14	8.58
20	7.29	7	7.26	24	7.87	25	8.22
28	7.26	24	7.11	June 14	8.25	Aug. 8	8.65
Feb. 12	7.03	Apr. 4	7.24	29	8.44	Sept. 16	8.15
18	7.10	19	7.31				

323 (*911, p. 35; 941, p. 24; 949, p. 19; *991, p. 29). Graham County. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	7.07	Mar. 6	7.12	May 10	7.45	July 14	8.32
20	7.14	7	7.13	24	7.89	25	7.82
28	7.08	24	7.10	June 14	7.99	Aug. 8	8.39
Feb. 12	6.90	Apr. 4	7.16	29	8.17	Sept. 16	7.86
18	6.98	19	7.18				

324 (*911, p. 36; 941, p. 24; 949, p. 19; *991, p. 29). Graham County. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	4.06	Mar. 6	4.05	May 10	4.55	July 12	5.58
19	3.32	8	4.11	24	5.05	25	4.79
28	2.74	23	4.27	June 16	5.59	Aug. 8	5.68
Feb. 12	4.03	Apr. 11	4.36	29	5.70	Sept. 16	4.79
19	4.28	28	4.68				

325 (*911, p. 36; 941, p. 24; 949, p. 19; *991, p. 30). Graham County. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E. Pipe was pulled up 0.5 foot. Measuring point, 2.0 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 12	a 3.84	Mar. 6	4.56	Apr. 28	5.29	June 29	6.41
19	4.13	8	4.65	May 10	5.09	July 12	6.25
28	3.47	23	4.83	23	5.77	25	5.76
Feb. 12	4.69	Apr. 11	4.90	June 16	6.31	Aug. 8	6.46
19	4.88						

a Pipe pulled up 0.5 foot.

326 (*911, p. 36; 941, p. 24; 949, p. 19; *991, p. 30). Graham County. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	4.44	Feb. 12	4.47	Mar. 7	4.25	Apr. 28	5.08
20	a 3.82	19	4.69	23	4.51	May 10	4.42
28	a 2.83	Mar. 6	4.19	Apr. 11	4.47	23	5.43

a Surface water standing nearby.

326. Graham County--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 16	6.27	July 12	5.82	Aug. 8	6.40	Sept. 16	5.18
29	6.31	25	5.94				

329 (*911, p. 37; 941, p. 25; 949, p. 20; *991, p. 30). Art Lines. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 6 S., R. 25 E. Measurements discontinued after June 29, 1943.

335 (*911, p. 37; 941, p. 25; 949, p. 20; *991, p. 31). E. B. McBride. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	11.32	Apr. 19	9.80	June 27	11.82	Sept. 12	12.62
26	11.30	21	9.77	29	12.44	13	12.19
Feb. 11	11.12	28	9.69	July 5	12.72	19	12.17
18	9.60	May 4	9.87	11	12.77	26	12.19
24	9.59	5	9.67	15	12.26	29	11.73
Mar. 8	11.24	10	9.68	18	12.35	Oct. 6	12.05
12	11.10	18	9.36	26	12.54	10	11.68
13	11.26	26	9.34	Aug. 1	12.89	11	12.11
16	11.26	June 2	10.65	8	13.00	18	12.09
21	11.28	6	9.76	15	12.14	25	11.85
31	9.09	13	10.90	23	12.19	Nov. 14	12.50
Apr. 6	9.93	15	11.86	28	12.14	29	12.56
7	9.78	20	11.64	Sept. 5	12.34	Dec. 20	12.41
13	9.74						

342 (*911, p. 37; 941, p. 25; 949, p. 20; *991, p. 31). Ed Howard. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 13	24.48	Apr. 19	25.81	July 26	27.34	Oct. 11	26.83
26	24.75	May 4	25.61	Aug. 15	27.55	25	25.78
Feb. 15	23.72	18	25.68	28	27.65	Nov. 15	25.58
25	23.74	June 15	26.34	Sept. 12	27.90	29	25.31
Mar. 16	23.82	28	27.45	30	27.78	Dec. 21	25.09
Apr. 7	25.69	July 15	28.59				

346 (*911, p. 37; 941, p. 25; 949, p. 20; *991, p. 31). Graham County. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	6.24	Mar. 6	6.20	May 11	6.92	July 14	7.70
22	6.43	7	6.21	24	7.03	28	7.94
28	6.39	23	6.09	June 14	7.52	Aug. 8	8.28
Feb. 12	6.14	Apr. 4	6.48	15	7.53	Sept. 23	8.02
22	6.23	19	6.46	30	7.82		

347 (*911, p. 38; 941, p. 26; 949, p. 20; *991, p. 31). Graham County. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	6.89	Mar. 6	7.13	May 11	7.62	July 14	8.44
22	7.19	8	7.15	24	7.76	28	8.55
28	7.03	23	7.04	June 14	8.14	Aug. 8	8.81
Feb. 12	7.07	Apr. 4	7.26	15	8.17	Sept. 23	8.57
22	7.14	19	7.24	30	8.39		

350 (*911, p. 38; 941, p. 26; 949, p. 20; *991, p. 32). Graham County. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Jan. 12	5.39	Mar. 6	5.68	May 10	6.53	July 12	7.75
24	5.52	8	5.67	24	6.85	26	7.61
28	5.45	23	5.62	June 17	7.40	Aug. 8	7.88
Feb. 12	5.64	Apr. 12	5.97	29	7.64	Sept. 23	7.40
23	5.68	29	6.15				

352 (*911, p. 39; 941, p. 27; 949, p. 20; *991, p. 32). Graham County. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	6.54	Mar. 6	6.55	May 10	7.68	July 26	8.96
24	6.48	8	6.68	24	8.00	Aug. 8	9.20
28	6.42	23	6.66	June 17	8.63	Sept. 15	8.53
Feb. 12	6.44	Apr. 12	7.04	29	8.93	16	8.51
23	6.69	29	7.25	July 12	9.07		

354 (*911, p. 40; *941, p. 27; 949, p. 20; *991, p. 32). Ned Daley. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	7.41	Apr. 19	10.60	July 15	(a)	Oct. 10	9.63
26	7.43	May 4	11.84	26	13.96	25	10.86
Feb. 10	7.27	18	12.27	Aug. 15	(a)	Nov. 14	9.58
25	7.26	June 2	(a)	28	11.97	30	8.18
Mar. 16	8.15	15	14.43	Sept. 13	12.18	Dec. 20	7.81
Apr. 6	(a)	29	(a)	29	10.36		

a Pumping.

366 (*911, p. 40; 941, p. 27; 949, p. 21; *991, p. 32). Charles M. Beals. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 6 S., R. 25 E. New measuring point beginning Apr. 6, 1944, bottom edge of 24-inch hole in concrete cover, 0.5 foot below old measuring point, at land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	18.85	Apr. 19	18.22	July 27	20.93	Oct. 10	19.52
26	17.27	May 18	19.27	Aug. 15	21.15	25	19.49
Feb. 11	17.98	June 2	19.32	28	21.24	Nov. 14	19.48
25	18.07	15	19.59	Sept. 13	20.89	29	20.07
Mar. 16	17.90	29	19.64	29	19.81	Dec. 20	19.99
Apr. 6	19.04	July 15	20.40				

372 (*911, p. 41; 941, p. 28; 949, p. 21; *991, p. 33). George Layton. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	34.08	Apr. 19	35.24	July 15	39.50	Oct. 10	42.21
26	33.92	May 4	35.40	26	42.09	25	40.42
Feb. 15	(a)	18	35.86	Aug. 15	(a)	Nov. 14	36.94
25	33.24	June 2	37.11	28	(b)	29	38.17
Mar. 16	33.74	15	37.96	Sept. 13	42.73	Dec. 20	38.11
Apr. 6	34.67	29	38.75	29	42.36		

a Well being repaired.

b Tape would not pass obstruction in well.

408 (*991, p. 33). Roy Saline. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	52.80	Apr. 19	49.98	July 15	50.77	Oct. 10	52.72
26	50.24	May 4	49.80	27	51.00	25	52.68
Feb. 12	52.40	18	49.71	Aug. 15	51.19	Nov. 14	52.28
25	49.87	June 2	50.05	28	52.37	29	52.07
Mar. 16	50.44	14	(a)	Sept. 13	52.54	Dec. 20	52.03
Apr. 6	50.65	29	50.53	29	52.59		

a Pumping.

409 (*991, p. 33). Joe Alder. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	3.97	Mar. 16	a 2.24	May 18	4.22	July 15	6.98
26	3.68	Apr. 6	a 2.88	June 2	4.64	27	6.87
Feb. 11	3.38	19	3.85	15	5.15	Aug. 15	7.29
25	3.98	May 4	3.75	29	6.29	28	a 6.63

a Surface water standing nearby.

409. Joe Alder--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 13	7.06	Oct. 10	5.48	Nov. 14	5.10	Dec. 20	5.20
29	5.02	25	5.24	29	5.21		

410 (*991, p. 33). Smithville Canal Co. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 6 S., R. 25 E. Water levels, in feet below land-surface datum, 1944: Jan. 13, 10.45; Jan. 26, 10.10; Feb. 10, 9.59; Feb. 25, 9.74.

429 (*911, p. 41; 941, p. 28; 949, p. 21; *991, p. 34). Graham County. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 6 S., R. 27 E. Well destroyed, measurements discontinued after June 15, 1944. Water levels, in feet below land-surface datum, 1944: Jan. 27, 8.08; Mar. 30, 8.00; May 15, 8.55; June 15, 9.12.

430 (*911, p. 42; 941, p. 28; 949, p. 21; *991, p. 34). Graham County. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 6 S., R. 27 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 27	9.09	Mar. 30	8.98	June 15	9.96
Feb. 28	9.05	May 15	9.45	Aug. 31	10.05

431 (*911, p. 42; 941, p. 28; 949, p. 21; *991, p. 34). Jesse Tyler. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 6 S., R. 27 E.

Water level, in feet below land-surface datum, 1944					
Jan. 27	4.90	Mar. 30	4.87	June 15	5.62
Feb. 28	4.87	May 15	5.21	Aug. 31	5.50

434 (*911, p. 43; 941, p. 29; 949, p. 22; *991, p. 34). Abel Sanchez. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 6 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 20.55; June 5, 21.80; Aug. 31, 21.36.

452 (*911, p. 43; *941, p. 29; 949, p. 22; *991, p. 34). S. A. Clontz. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 6 S., R. 28 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 22.47; June 5, 23.14; Aug. 31, 22.86.

454 (*911, p. 43; 941, p. 29; 949, p. 22; *991, p. 34). Brown Canal Co. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 6 S., R. 28 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 22.28; June 5, 23.50; Aug. 31, pumping.

506 (*991, p. 34). Roy Layton. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 2, T. 7 S., R. 25 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	25.93	Apr. 20	26.28	July 15	30.69	Oct. 10	30.71
26	25.71	May 4	26.53	26	30.80	25	30.33
Feb. 10	25.24	18	27.30	Aug. 15	31.00	Nov. 14	29.48
25	25.24	June 2	28.48	28	31.42	30	28.91
Mar. 16	24.87	15	28.33	Sept. 13	31.27	Dec. 20	28.90
Apr. 6	26.35	29	29.96	29	31.65		

508 (*911, p. 44; 941, p. 29; 949, p. 22; *991, p. 35). Graham County. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 6 S., R. 25 E.

Water level, in feet below land-surface datum, 1944							
Jan. 13	12.28	Apr. 19	13.09	July 26	17.60	Oct. 10	b 15.35
26	11.52	May 4	13.44	Aug. 15	17.62	25	15.76
Feb. 10	11.59	18	a 11.25	28	16.75	Nov. 14	14.92
25	11.54	June 15	15.91	Sept. 13	16.82	30	15.19
Mar. 16	11.76	29	17.22	29	b 15.40	Dec. 20	15.13
Apr. 6	12.87	Jul 15	17.75				

a Surface water standing nearby.

b Surface water near well recently.

509 (*911, p. 44; 941, p. 30; 949, p. 22; *991, p. 35). Ellis Walker and Eldon Palmer. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 7 S., R. 25 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	33.75	May 4	(a)	July 27	39.39	Oct. 10	39.03
26	33.34	18	34.48	Aug. 15	39.72	25	39.09
Feb. 10	33.22	June 2	(a)	28	39.55	Nov. 14	38.32
25	33.14	15	36.78	Sept. 13	39.44	29	38.61
Apr. 7	(a)	29	(a)	29	39.48	Dec. 20	38.53
20	33.98	July 15	39.36				

a Pumping.

554 (*911, p. 45; 941, p. 30; 949, p. 22; *991, p. 35). Graham Canal Co. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 29, pumping.

557 (*911, p. 45; 941, p. 30; 949, p. 22; *991, p. 35). R. A. Smith. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 6, T. 7 S., R. 26 E. Well filled with rocks; measurements discontinued after Dec. 20, 1943.

564-A (*941, p. 31; 949, p. 22; *991, p. 35). Rose E. Golding. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E. Well sealed, measurements discontinued after May 15, 1944.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	9.97	Mar. 6	9.55	May 15	8.47
Feb. 28	8.89	Apr. 18	9.68		

565-A (*941, p. 31; 949, p. 22; *991, p. 35). Z. C. Prina. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	7.88	Mar. 6	6.04	May 15	7.11	Sept. 23	10.07
Feb. 28	6.21	Apr. 18	6.56	June 15	8.65		

566-A (*941, p. 31; 949, p. 22; *991, p. 36). Z. C. Prina. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	7.29	Mar. 6	6.22	May 15	7.38	Sept. 23	9.37
Feb. 28	5.68	Apr. 18	5.51	June 15	8.74		

567-A (*941, p. 32; 949, p. 22; *991, p. 36). Z. C. Prina. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	4.76	Mar. 6	4.79	May 15	5.12	Sept. 23	7.54
Feb. 28	4.20	Apr. 18	4.29	June 15	6.85		

568-A (*941, p. 32; 949, p. 23; *991, p. 36). Z. C. Prina. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	4.94	Mar. 6	4.98	May 15	4.57	Sept. 23	7.51
Feb. 28	4.45	Apr. 18	4.72	June 15	6.75		

569-A (*941, p. 33; 949, p. 23; *991, p. 36). Graham County. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	4.53	Mar. 6	5.10	May 15	4.51	Sept. 23	6.42
Feb. 28	4.09	Apr. 18	4.73	June 15	6.24		

570 (*911, p. 48; *941, p. 33; 949, p. 23; *991, p. 36). Z. C. Prina.
SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	2.99	Mar. 6	2.10	May 15	1.83
Feb. 28	1.53	Apr. 18	1.98		

574 (*911, p. 48; *941, p. 33; 949, p. 23; *991, p. 36). Z. C. Prina.
SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	4.97	Mar. 6	5.24	May 15	5.93	Sept. 23	6.82
Feb. 28	4.87	Apr. 18	5.03	June 15	7.00		

575 (*911, p. 49; *941, p. 34; 949, p. 23; *991, p. 37). Z. C. Prina.
SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 7 S., R. 26 E.

Daily noon water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.93	5.83	6.59	7.51	9.03	9.26	8.15
2	5.90	5.85	6.63	7.58	9.07	9.28	8.23
3	5.92	5.93	6.68	7.61	9.10	9.29	8.28
4	5.91	6.01	6.72	7.66	9.13	9.27	8.33
5	5.89	6.09	6.75	7.72	9.17	9.28	8.37
6	5.93	6.14	6.78	7.77	9.19	9.28	8.22
7	5.94	6.20	6.81	7.85	9.04	9.32	8.13
8	(a)	6.28	6.86	(b)	9.02	9.38	8.16
9	5.94	6.30	6.88	(b)	8.99	9.39	8.23
10	5.96	6.31	6.79	(b)	9.02	9.33	8.29
11	5.99	6.31	6.78	(b)	9.05	9.21	8.37
12	6.03	6.30	6.77	(b)	9.07	9.14	8.39
13	6.06	6.34	6.85	c 8.63	9.12	9.10	8.33
14	6.03	6.37	6.91	8.67	9.15	9.09	8.26
15	6.08	6.37	6.96	8.69	9.17	9.14	8.21
16	6.13	6.37	6.97	8.68	9.21	9.16	8.14
17	6.09	6.39	6.97	8.67	9.24	9.02	8.08
18	6.09	6.40	7.02	8.67	9.26	8.82	8.08
19	6.06	6.43	7.06	8.67	9.11	8.64	8.14
20	6.02	6.45	7.07	8.68	9.05	8.47	8.20
21	6.13	6.48	7.07	8.72	9.10	8.34	(a)
22	6.17	6.51	7.09	8.77	9.18	8.25	(d)
23	6.18	6.54	7.06	8.80	9.24	8.20	....
24	6.16	6.56	7.04	8.84	9.23	8.18	....
25	6.16	6.57	7.07	8.88	9.11	8.10	....
26	6.18	6.57	7.12	8.92	9.10	8.10	....
27	6.20	6.56	7.18	8.91	9.14	8.09	....
28	6.25	6.57	7.24	8.94	9.18	8.09	....
29	5.94	5.28	6.58	7.32	8.97	9.23	8.09	....
30	6.16	6.57	7.37	9.00	9.26	8.09	....
31	6.06	....	7.43	....	9.27	8.09	....

a No record on recorder chart.

b Dry at 7.9 feet

c Well deepened.

d Recorder removed because of threatening high water in Gila River.

576 (*911, p. 50; *941, p. 35; 949, p. 24; *991, p. 37). Z. C. Prina.
SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	6.15	Mar. 6	6.19	May 15	5.80	Sept. 23	a 6.50
Feb. 28	6.03	Apr. 18	5.85	June 15	a 6.50		

a Tape would not pass obstruction at 6.50 feet.

580 (*911, p. 51; *941, p. 35; 949, p. 24; *991, p. 37). City of Safford. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 9.10; June 5, 11.42; Aug. 31, 13.82.

585 (*911, p. 51; *941, p. 36; 949, p. 24; *991, p. 37). Graham Canal Co. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 7 S., R. 26 E. Water level, in feet below land-surface datum, 1944: Feb. 29, 14.96.

586 (*911, p. 51; 941, p. 36; 949, p. 24; *991, p. 38). Ted Tidwell. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 17.80; June 5, 18.89; Aug. 31, 19.43.

587 (*911, p. 51; 941, p. 36; 949, p. 24; *991, p. 38). Graham County. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 7 S., R. 26 E. Well destroyed; measurements discontinued after Jan. 27, 1944. Water level, in feet below land-surface datum, 1944: Jan. 27, 8.55.

588 (*911, p. 52; 941, p. 36; 949, p. 24; *991, p. 38). Graham County. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 7 S., R. 26 E. Well destroyed; measurements discontinued after Jan. 27, 1944. Water level, in feet below land-surface datum, 1944: Jan. 27, 7.99.

592 (*911, p. 52; 941, p. 37; 949, p. 24; *991, p. 38). E. M. Claridge. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 16.89; June 5, pumping.

593 (*911, p. 53; 941, p. 37; 949, p. 24; *991, p. 38). E. M. Claridge. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 18.15; June 5, pumping; Aug. 31, 22.60.

594 (*911, p. 53; 941, p. 37; 949, p. 25; *991, p. 38). E. M. Claridge. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 10.31; June 5, 12.34; Aug. 31, 12.56.

597 (*911, p. 53; 941, p. 37; 949, p. 25; *991, p. 38). C. M. Pursley. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	16.96	Apr. 26	20.57	July 27	23.47	Oct. 26	21.68
Feb. 26	16.25	May 26	22.46	Aug. 28	22.85	Nov. 27	20.20
Mar. 27	21.92	June 29	23.00	Sept. 26	23.44	Dec. 26	19.33

598 (*911, p. 53; 941, p. 37; 949, p. 25; *991, p. 38). Union Canal Co. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944; Feb. 28, 14.35; June 5, 20.84; Aug. 31, 21.10.

603 (*911, p. 53; 941, p. 37; 949, p. 25; *991, p. 38). L. A. Nelson. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 31.91; June 5, 38.00; Aug. 31, 47.58.

606 (*911, p. 54; 941, p. 37; 949, p. 25; *991, p. 39). Pedro Solas. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 3.15; June 5, 10.4 (dry); Aug. 31, 10.4 (dry).

609 (*911, p. 54; *941, p. 37; 949, p. 25; *991, p. 39). Mrs. Annie Collins. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 24.07; June 5, 23.74; Aug. 31, 25.74.

610 (*911, p. 54; 941, p. 38; 949, p. 25; *991, p. 39). Bert Hatch. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 46.75; June 5, 45.59; Aug. 31, 49.00.

616 (*911, p. 55; *941, p. 38; 949, p. 25; *991, p. 39). Kimball & Greenhalgh. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Jan. 27	44.52	Apr. 26	45.10	July 27	46.10	Oct. 26	47.52
Feb. 26	44.80	May 26	45.37	Aug. 28	46.63	Nov. 27	47.94
Mar. 27	44.95	June 29	45.70	Sept. 26	47.08	Dec. 26	48.32

618 (*941, p. 38; 949, p. 25; *991, p. 39). Willard Welker. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 7 S., R. 26 E. Casing sealed; measurements discontinued after Feb. 28, 1944. Water level, in feet below land-surface datum, 1944: Feb. 28, 34.41.

621 (#941, p. 39; 949, p. 25; #991, p. 39). Lee Johns. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 32.43; June 5, pumping; Aug. 31, 42.23.

623 (#911, p. 56; 941, p. 39; 949, p. 25; #991, p. 39). Lee Johns. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 25.78; June 5, 34.85; Aug. 31, 34.58.

625 (#911, p. 56; 941, p. 39; 949, p. 26; #991, p. 40). Willard Welker. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 31.74; June 5, pumping; Aug. 31, 36.40.

628 (#911, p. 56; #941, p. 39; 949, p. 26; #991, p. 40). Kempton & Larson. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 21.35; June 5, 31.77; Aug. 31, pumping.

530 (#911, p. 57; 941, p. 39; 949, p. 26; #991, p. 40). E. L. Claridge. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 7 S., R. 26 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	18.14	Mar. 30	22.90	Aug. 31	23.35
Feb. 28	18.94	June 5	27.80		

639 (#911, p. 57; 941, p. 39; 949, p. 26; #991, p. 40). Amos Cook. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 7 S., R. 26 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 26.44; June 5, 27.00.

661 (#911, p. 57; 941, p. 39; #949, p. 26; #991, p. 40). Louis Michelena. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 1, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 30.49; June 5, 30.95.

662 (#911, p. 57; 941, p. 40; #949, p. 26; #991, p. 40). Mrs. Jose Somora. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 7 S., R. 27 E.

Daily noon water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16.12	15.95	15.92	16.04	16.26	16.66	17.18	17.41	17.16	16.84	16.50	16.22
2	16.11	15.95	15.91	16.05	16.27	16.67	17.19	17.41	17.16	16.81	16.48	16.20
3	16.10	15.93	15.92	16.06	16.27	16.63	17.20	17.42	17.16	16.78	16.47	16.19
4	16.10	15.93	15.93	16.06	16.28	16.70	17.21	17.42	17.17	16.75	16.47	16.18
5	16.09	15.92	15.92	16.07	16.28	16.72	17.22	17.43	17.18	16.73	16.46	16.17
6	16.08	15.92	15.93	16.08	16.29	16.74	17.24	17.44	17.18	16.71	16.46	16.15
7	16.08	15.91	15.93	16.09	16.29	16.75	17.25	17.45	17.17	16.69	16.45	16.13
8	16.07	15.91	15.93	16.10	16.30	16.77	17.26	17.46	17.17	16.68	16.45	16.12
9	16.06	15.90	15.94	16.11	16.31	16.79	17.27	17.45	17.17	16.67	16.44	16.11
10	16.06	15.90	15.94	16.12	16.32	16.81	17.28	17.44	17.16	16.66	16.43	16.10
11	16.05	15.90	15.94	16.13	16.33	16.83	17.29	17.44	17.16	16.65	16.42	16.09
12	16.04	15.89	15.94	16.13	16.33	16.85	17.30	17.44	17.17	16.64	16.41	16.08
13	16.03	15.89	15.95	16.14	16.34	16.87	17.32	17.43	17.16	16.63	16.40	16.08
14	16.02	15.88	15.95	16.14	16.35	16.89	17.32	17.43	17.16	16.62	16.39	16.07
15	16.01	15.88	15.96	16.15	16.37	16.81	17.33	17.42	17.15	16.61	16.39	16.07
16	16.01	15.88	15.96	16.16	16.38	16.92	17.34	17.42	17.15	16.61	16.38	16.07
17	16.00	15.88	15.95	16.17	16.40	16.94	17.35	17.42	17.13	16.60	16.37	16.06
18	16.00	15.90	15.95	16.18	16.41	16.96	17.36	17.43	17.12	16.60	16.36	16.06
19	15.99	15.90	15.96	16.18	16.43	16.97	17.37	17.41	17.11	16.60	16.35	16.05
20	15.98	15.90	15.96	16.19	16.45	16.99	17.38	17.39	17.10	16.60	16.34	16.04
21	15.98	15.90	15.97	16.20	16.46	17.01	17.38	17.36	17.10	16.61	16.33	16.04
22	15.98	15.90	15.98	16.20	16.47	17.02	17.39	17.33	17.09	16.62	16.32	16.03
23	15.97	15.90	15.98	16.20	16.49	17.04	17.39	17.30	17.09	16.62	16.30	16.02
24	15.96	15.90	15.98	16.21	16.51	17.06	17.39	17.27	17.09	16.62	16.29	16.02
25	15.96	15.91	15.98	16.22	16.53	17.08	17.40	17.24	17.06	16.60	16.29	16.02
26	15.97	15.91	15.99	16.23	16.55	17.10	17.40	17.23	17.03	16.60	16.28	16.01
27	15.97	15.91	16.00	16.24	16.57	17.12	17.40	17.21	16.99	16.59	16.27	16.01
28	15.97	15.92	16.01	16.25	16.59	17.13	17.39	17.19	16.96	16.58	16.26	16.01
29	15.97	15.92	16.02	16.26	16.60	17.15	17.40	17.18	16.92	16.56	16.25	16.00
30	15.96	.....	16.02	16.26	16.62	17.16	17.40	17.17	16.88	16.54	16.23	16.00
31	15.96	.....	16.03	.....	16.64	.....	17.40	17.16	.....	16.52	.....	15.99

664 (*911, p. 58; 941, p. 40; 949, p. 26; *991, p. 41). San Jose Canal Co. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Jan. 27, 17.00; May 18, 18.54.

674 (*911, p. 58; 941, p. 40; 949, p. 26; *991, p. 41). Louis Michelena. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 14.20; June 5, 15.70; Aug. 31, 18.30.

675 (*941, p. 40; 949, p. 26; *991, p. 41). Louis Michelena. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 4, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 11.82; June 5, 13.23; Aug. 31, 15.05.

676 (*911, p. 58; 941, p. 41; 949, p. 26; *991, p. 41). Louis Michelena. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 4, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 13.88; June 5, 15.10; Aug. 31, 15.90.

683 (*911, p. 59; 941, p. 41; 949, p. 26; *991, p. 41). Tom Gardner. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 21.41; June 5, 25.5 (dry); Aug. 31, 25.5 (dry).

685 (*911, p. 59; 941, p. 41; 949, p. 27; *991, p. 41). Brijido Carrasco. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 11, T. 7 S., R. 27 E. New measuring point beginning Feb. 28, 1944, top of wood curb, 1.7 feet below old measuring point and 0.5 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 28, 25.98; June 5, 25.76.

689 (*911, p. 59; 941, p. 41; 949, p. 27; *991, p. 41). San Jose Canal Co. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 42.14; June 5, pumping; Aug. 31, pumping.

696 (*911, p. 59; *941, p. 41; 949, p. 27; *991, p. 41). Louis Carrasco. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 14.52; June 5, 21.26; Aug. 31, 23.10.

699-A (*949, p. 27; *991, p. 41). E. M. Claridge. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 7 S., R. 27 E. Measurements discontinued after Dec. 22, 1943.

700-A (*949, p. 27; *991, p. 42). Graham County. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 7 S., R. 27 E. Measurements discontinued after Dec. 22, 1943.

701 (*911, p. 60; 941, p. 42; 949, p. 27; *991, p. 42). Graham County. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 7 S., R. 27 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	7.99	Mar. 30	8.22	June 15	11.95
Feb. 28	8.07	May 15	9.92	Aug. 31	11.99

702 (*911, p. 61; 941, p. 42; 949, p. 27; *991, p. 42). William Waldrom. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 7 S., R. 27 E. Well obstructed with trash; measurements discontinued after Dec. 20, 1943.

703 (*911, p. 61; 941, p. 42; 949, p. 27; *991, p. 42). William Waldrom. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, pumping; June 5, pumping; Aug. 31, pumping.

705 (*911, p. 61; 941, p. 42; 949, p. 27; *991, p. 42). J. M. Hatfield. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 22.05; June 5, 19.74; Aug. 31, 20.60.

708 (*911, p. 61; *941, p. 42; 949, p. 28; *991, p. 42). Pete Bertaldo. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 37.89; June 5, 38.96; Aug. 31, 38.99.

709 (*911, p. 61; 941, p. 42; 949, p. 28; *991, p. 42). E. E. Taylor. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 30, T. 7 S., R. 27 E. Water levels, in feet below land-surface datum, 1944: Feb. 28, 21.65; June 5, 21.44; Aug. 31, 21.88.

766 (*911, p. 62; *941, p. 42; 949, p. 28; *991, p. 42). Cluff & Montierth. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 8 S., R. 26 E. Well filled to 47.0 feet and dry; measurements discontinued after Feb. 28, 1944.

791 (*911, p. 62; 941, p. 43; 949, p. 28; *991, p. 42). Howard Olsen. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 8 S., R. 27 E. No measurements made in 1944.

792 (*911, p. 62; *941, p. 43; 949, p. 28; *991, p. 42). Howard Olsen. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 8 S., R. 27 E. No measurements made in 1944.

793 (*911, p. 62; *941, p. 43; 949, p. 28; *991, p. 43). Howard Olsen. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 8 S., R. 27 E. No measurements made in 1944.

GREENLEE COUNTY (DUNCAN VALLEY)

By R. L. Cushman and M. J. Scott

The western portion of the Duncan-Virden Valley lying within Greenlee County is known as the Duncan Valley. The eastern part, known as the Virden Valley, lies within Hidalgo County, New Mexico. Water-level observations in Virden Valley will be found in the New Mexico section of this report. There were 23 water-level measurements made in 20 wells in Duncan Valley during 1944.

Fluctuations of water level

The lowering of the water table began late in March and continued through most of September as a result of withdrawals from the ground-water reservoir for irrigation to supplement the surface supply. Approximately 9,500 acre-feet of ground water was pumped, or 1-1/3 times the volume pumped in 1943. Heavy precipitation occurring late in September caused large river flow and the pumping draft from ground water was lessened. After September the water levels continued to rise so that little or no permanent lowering of the ground-water reservoir occurred during 1944.

Figure 4 shows water-level fluctuations in five typical wells within the Duncan-Virden Valley, together with the volume of ground water pumped, and the monthly precipitation at Duncan. Well 61, situated in an area of heavy pumping, showed the decline in the water-table elevation as a result of ground-water pumpage, and the recharge occurring after pumping was curtailed in September. Although wells 5 and 171 are away from local pumping influences, water-level fluctuations in these wells have a trend similar to those in well 61 but with much less magnitude.

Well descriptions and water-level measurements

5 (*941, p. 45; 949, p. 30; *991, p. 45). Warner Foote. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 6 S., R. 31 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 6.84; July 5, 7.97.

12 (*911, p. 65; 941, p. 45; 949, p. 30; *991, p. 45). Mr. Wilton. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T. 6 S., R. 31 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 23.50.

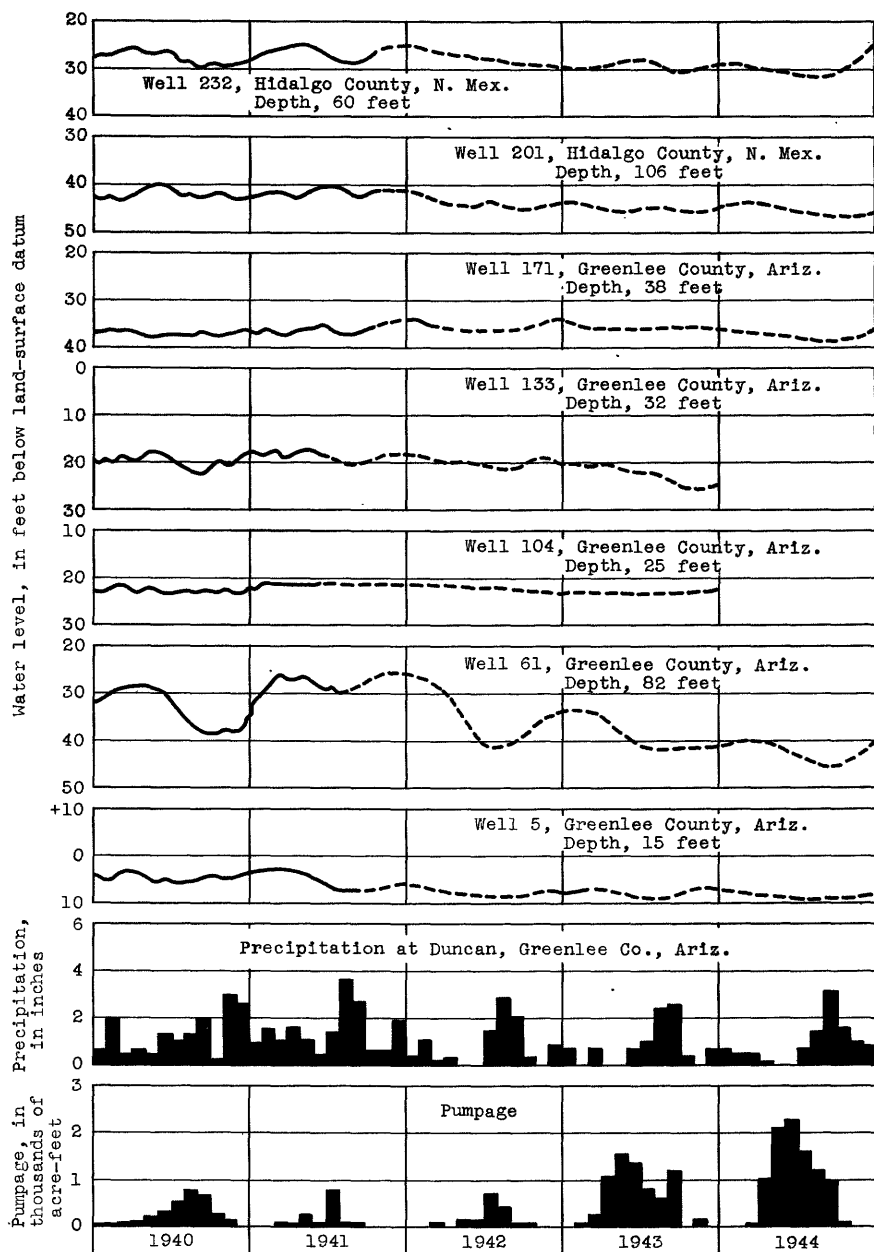


Figure 4.--Graphs showing fluctuations of water level in observation wells in the Duncan-Virden Valley, Greenlee County, Arizona, and Hidalgo County, New Mexico.

14 (#911, p. 65; #941, p. 45; 949, p. 30; #991, p. 45). Victor Rowden. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 6 S., R. 31 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 35.02.

31 (#911, p. 65; 941, p. 45; 949, p. 30; #991, p. 45). J. C. Merritt. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 7 S., R. 31 E. Water level, in feet below land-surface datum, 1944: Mar. 13, pumping.

36 (#911, p. 66; 941, p. 45; 949, p. 30; #991, p. 45). M. M. Cosper. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 7 S., R. 31 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, pumping for domestic use; July 5, 20.14.

43 (#911, p. 66; 941, p. 45; 949, p. 30; #991, p. 45). Ernest Campbell. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 7 S., R. 31 E. New measuring point beginning Mar. 13, 1944, top of wood curb, 0.5 foot above old measuring point and 2.6 feet above land-surface datum. Well has been deepened to 29.4 feet. Water level, in feet below land-surface datum, 1944: Mar. 13, 27.92.

49 (#911, p. 66; 941, p. 45; 949, p. 30; #991, p. 45). W. M. Zumwalt. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 7 S., R. 31 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 50.67.

61 (#911, p. 66; 941, p. 46; 949, p. 30; #991, p. 45). M. W. McKelvey. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 8 S., R. 31 E. Casing broken off at land surface. New measuring point beginning Mar. 13, 1944, top of casing on the east side, 0.8 foot below old measuring point, at land-surface datum. Water level, in feet below land-surface datum, 1944: Mar. 13, 39.95.

63 (#911, p. 67; 941, p. 46; 949, p. 30; #991, p. 45). M. W. McKelvey. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 8 S., R. 31 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 59.45; July 5, 61.03.

72 (#911, p. 67; 941, p. 46; 949, p. 30; #991, p. 45). J. C. Campbell. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 8 S., R. 31 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 48.20; July 5, 52.45.

92 (#911, p. 68; 941, p. 46; 949, p. 30; #991, p. 46). Raymond Davis. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 67.39.

96 (#911, p. 68; 941, p. 46; 949, p. 30; #991, p. 46). L. Deane. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 28.50.

100 (#911, p. 68; 941, p. 46; 949, p. 30; #991, p. 46). W. M. Zumwalt. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 19, T. 8 S., R. 32 E. Measurements discontinued after Dec. 16, 1942.

104 (#911, p. 68; 941, p. 47; #949, p. 31; #991, p. 46). Bill Cosper. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 8 S., R. 32 E. Well cannot be entered; measurements discontinued after Dec. 27, 1943.

111 (#911, p. 68; 941, p. 47; 949, p. 31; #991, p. 46). Franklin Irrigation District well 8. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 6.80.

120 (#911, p. 69; 941, p. 47; 949, p. 31; #991, p. 46). D. E. Wilkins. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 10.65.

122 (#911, p. 69; 941, p. 47; 949, p. 31; #991, p. 46). Delbert Moyers. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 23.65.

125 (#911, p. 69; 941, p. 47; 949, p. 31; #991, p. 46). V. L. Crofts. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 20.67.

131 (#911, p. 69; #941, p. 47; 949, p. 31; #991, p. 46). Franklin Irrigation District well 2. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 8 S., R. 32 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 20.14; July 5, pumping.

133 (#911, p. 71; 941, p. 47; #949, p. 31; #991, p. 46). Floyd McDaniels. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 8 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, being repaired.

136 (*911, p. 71; 941, p. 47; 949, p. 31; *991, p. 46). Franklin Irrigation District well 1. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 8 S., R. 32 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, pump house locked; July 5, pumping.

160 (*911, p. 71; 941, p. 47; 949, p. 31; *991, p. 46). Franklin Irrigation District well 7. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 9 S., R. 32 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 6.09; July 5, pumping.

161 (*911, p. 71; 941, p. 48; 949, p. 31; *991, p. 47). Franklin Irrigation District well 6. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 9 S., R. 32 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 5.55; July 5, pumping.

162 (*911, p. 72; 941, p. 48; 949, p. 31; *991, p. 47). Franklin Irrigation District well 5. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 9 S., R. 32 E. Water levels, in feet below land-surface datum, 1944: Mar. 13, 17.85; July 5, pumping.

171 (*911, p. 72; 941, p. 48; 949, p. 31; *991, p. 47). John Chapman. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 9 S., R. 32 E. Water level, in feet below land-surface datum, 1944: Mar. 13, 36.10.

MARICOPA COUNTY (QUEEN CREEK AREA)

By J. F. Hostetter

In 1944 ground-water investigations in Maricopa County were confined to the Verde River and Queen Creek regions. The purpose of the Verde River investigations for the city of Phoenix is discussed in the introduction to this section. The results will be published at a future date.

Data and information presented herein are confined to the Queen Creek area, situated in two counties, Maricopa and Pinal, the major part being in Maricopa County. For the latter reason the entire area is described under the heading "Maricopa County." However, the water-level measurements of the 16 wells in Pinal County are listed with the other wells in that county.

The Queen Creek investigations included the preparation of a pumpage inventory and the measurements of water levels in typical wells. During the year, 58 water-level measurements were made in 28 observation wells.

Fluctuations of water level

Graphs of the fluctuations in four representative wells are shown in figure 5, and are discussed below. Pumpage in the area was about 163,800 acre-feet, and has greatly exceeded the safe annual yield for the past several years. The pumpage inventory contained records from 125 wells, of which 105 were equipped with electric motors, 10 with oil or liquified petroleum gas engines and 10 with natural gas engines. The use of water has doubled since 1941. Records of the amount of water used since 1941 according to figures of the Geological Survey are given, by arbitrarily divided districts, as indicated in the following table:

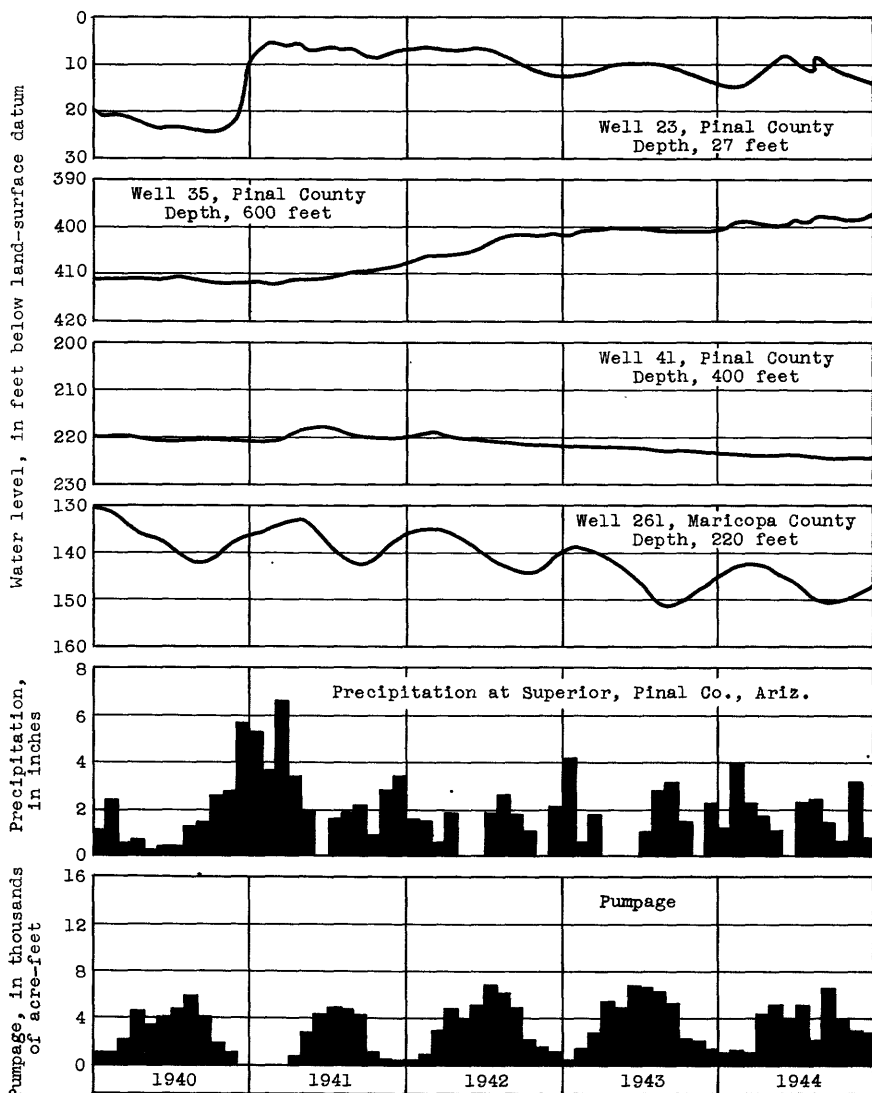


Figure 5.--Graphs showing fluctuations of water level in observation wells in the Queen Creek area, Maricopa and Pinal Counties, Arizona.

Pumpage, in acre-feet, in the Queen Creek area, Ariz., 1941-44

	<u>1941</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>
Roosevelt Water Conservation District.....	45,602	94,900	105,000	99,100
Bulldog-Superstition area.....	5,847	7,500	7,700	8,700
Queen Creek Irrigation district.....	22,920	39,500	44,000	41,000
Chandler Heights Citrus Irrigation district.....	2,478	4,659	5,000	5,000
Magma area.....	5,603	9,439	11,500	10,000
Totals.....	82,450	155,998	173,200	163,800

Well 23, a shallow dug well, is situated in the valley of Queen Creek about 2 miles above the desert plain. Recharge from floods in Queen Creek is quickly registered in this well. (See fig. 5.) During a 24-hour period, August 9 to 10, 1944, the water level rose 2.28 feet, while Queen Creek was in flood. At the end of the year the water level was 0.45 foot higher than in February 1944.

Well 35 is a deep well situated on the desert plain about half a mile from Queen Creek and a few miles downstream from the mouth of the canyon. The water level in this well continued on an upward trend during 1944 and at the end of the year was 2.16 feet higher than in February 1944. The rise in the water level in this well from the spring of 1941, when the rise began, to the end of 1944 totals 13.77 feet.

Well 41 is situated a few hundred feet from the Queen Creek channel on the desert plain and several miles upstream from a heavily pumped area. The effect of pumping is apparent as shown by the steady downward trend of the water level in this well. From the latter part of May 1941 to August 16, 1944, the water level has declined 6.19 feet.

In well 261, in an area of heavy pumping, the water level shows a seasonal lowering as a result of this pumping with only partial recovery after the pumping season. There has been a gradual downward trend of the water level for the past 5 years. (See fig. 5.)

Well descriptions and water-level measurements

1 (*941, p. 51; 949, p. 34; *991, p. 50). Roosevelt Water Conservation District. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 1 N., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 178.90; June 12, 182.26; Aug. 11, 183.25.

10 (*911, p. 74; 941, p. 51; 949, p. 34; *991, p. 50). Win Wylie. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 1 N., R. 6 E. Resetting of pump plugged measuring hole; measurements discontinued.

18 (*911, p. 74; 941, p. 51; 949, p. 34; *991, p. 50). J. Asayd. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 1 N., R. 6 E. Water level, in feet below land-surface datum, 1944: Feb. 8, 141.91. Measurements discontinued after Feb. 8, 1944, in compliance with orders from State Health Department.

- 19 (*911, p. 74; 941, p. 51; 949, p. 34; *991, p. 50). E. D. Edwards. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 1 N., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 135.73; June 12, 137.21; Aug. 11, pumping; Aug. 13, water seeping into well prevented measurement.
- 68 (*911, p. 75; 941, p. 51; 949, p. 34; *991, p. 50). Mr. Schmitt. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 1 N., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 303.21; June 16, 303.46; Aug. 10, 303.56.
- 84 (*911, p. 75; 941, p. 51; 949, p. 34; *991, p. 50). W. A. Anderson. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 11, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 176.86; Aug. 13, 177.24.
- 87 (*911, p. 75; 941, p. 52; 949, p. 34; *991, p. 50). Mrs. Gardner. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 117.22; Aug. 13, 119.01.
- 89 (*911, p. 75; 941, p. 52; 949, p. 34; *991, p. 50). D. Cole. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 116.66; June 15, 117.12; Aug. 13, 117.42.
- 94 (*911, p. 75; 941, p. 52; 949, p. 34; *991, p. 50). "Old Clifford Place". NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 134.80; June 15, 135.17; Aug. 13, 135.41.
- 101 (*911, p. 76; 941, p. 52; 949, p. 34; *991, p. 50). Mr. Gardiner. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 164.80; Aug. 13, 165.37.
- 102 (*911, p. 76; 941, p. 52; 949, p. 34; *991, p. 51). Florence McEntire. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 1 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 119.46; June 15, pumping; Aug. 13, 120.53.
- 125 (*911, p. 77; 941, p. 52; 949, p. 35; *991, p. 51). G. H. Dunn. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 1 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 152.64; June 15, 158.63; Aug. 13, 157.12.
- 128 (*911, p. 77; 941, p. 52; 949, p. 35; *991, p. 51). Roosevelt Water Conservation District. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 1 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 117.28; June 15, pumping; Aug. 14, pumping.
- 136 (*911, p. 77; 941, p. 53; 949, p. 35; *991, p. 51). Roosevelt Water Conservation District. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 1 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 99.99; June 15, 101.10; Aug. 14, 101.62.
- 151 (*911, p. 77; 941, p. 53; 949, p. 35; *991, p. 51). Roosevelt Water Conservation District. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 2 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 54.47; Aug. 14, 69.05.
- 155 (*911, p. 78; 941, p. 53; 949, p. 35; *991, p. 51). F. C. Harris. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 25, T. 2 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, dry; June 15, dry.
- 164 (*911, p. 78; 941, p. 53; 949, p. 35; *991, p. 51). Roosevelt Water Conservation District. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 5, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 78.98; Aug. 14, 82.98.
- 170 (*911, p. 78; 941, p. 53; 949, p. 35; *991, p. 51). A. Sanford. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 100.86; June 15, 104.39; Aug. 14, 103.88.
- 177 (*911, p. 78; 941, p. 53; 949, p. 35; *991, p. 51). J. O. Power. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 2 S., R. 6 E. Water level, in feet below land-surface datum, 1944: Aug. 14, 126.36.
- 185 (*911, p. 78; 941, p. 53; 949, p. 35; *991, p. 51). J. S. Gephart. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 101.83; Aug. 14, 107.64.

205 (#911, p. 79; 941, p. 53; 949, p. 35; #991, p. 51). J. E. Watson. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 24, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 120.39; June 15, pumping; Aug. 14, pumping.

208 (#911, p. 79; 941, p. 53; 949, p. 35; #991, p. 51). H. O. Backer. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 86.44; June 15, 88.68; Aug. 14, 88.73.

217 (#911, p. 79; 941, p. 54; 949, p. 35; #991, p. 51). Chandler Heights Citrus Irrigation District. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, pumping; Aug. 14, pumping.

218 (#911, p. 79; 941, p. 54; 949, p. 35; #991, p. 52). Clyde Fitzgerald. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 99.98; June 15, 103.96; Aug. 14, pumping.

221 (#911, p. 79; 941, p. 54; 949, p. 35; #991, p. 52). Roosevelt Water Conservation District. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 2 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, 47.75; Aug. 14, 45.28.

252 (#911, p. 80; 941, p. 54; 949, p. 35; #991, p. 52). Jack Barnes. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 145.13; June 15, 149.82; Aug. 15, pumping.

254 (#911, p. 80; 941, p. 54; 949, p. 35; #991, p. 52). W. J. Germann. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, nearby well pumping; Aug. 15, 136.68.

260 (#911, p. 80; 941, p. 54; 949, p. 35; #991, p. 52). Lawrence Ellsworth. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 149.24; June 15, pumping; Aug. 15, pumping.

261 (#911, p. 80; 941, p. 54; 949, p. 35; #991, p. 52). Higley Ward School. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 15, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 142.70; June 15, 145.66; Aug. 15, 149.96.

271 (#911, p. 80; 941, p. 54; 949, p. 36; #991, p. 52). Sossaman Bros. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 9, pumping; Aug. 15, pumping.

273 (#911, p. 81; 941, p. 55; 949, p. 36; #991, p. 52). Leo Ellsworth. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, pumping; June 15, 150.38; Aug. 15, pumping.

279 (#911, p. 81; 941, p. 55; 949, p. 36; #991, p. 52). Southern Pacific Railroad. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 2 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 158.23; Aug. 16, 160.21.

PIMA COUNTY

By J. F. Hostetter

During 1944, measurements of water levels in key observation wells and the preparation of an inventory of the amount of water pumped from ground-water sources in the Santa Cruz River Valley were continued by the Geological Survey. The work included 140 tape measurements in 42 observation wells in Pima County. Of this number, 6 were measured at monthly intervals and 36 wells were measured once or more during the year. The locations of all of these wells are shown on figure 2.

Fluctuations of water level

The following table summarizes the trends in ground-water levels in Pima County in the wells that have been measured at monthly intervals since 1940. During the 5-year period a general decline in the water levels has persisted. The drop in water levels during that time ranged from 0.98 foot to 14.62 feet.

Summary of monthly ground-water data in observation wells,
Pima County, Ariz.

Well No.	Year	Depth to water below land-surface, in feet		
		Average level	Highest static level	Lowest static level
1337	1940	80.02	74.71	85.93
	1941	81.46	70.87	89.74
	1942	91.03	80.53	100.48
	1943	94.51	90.20	101.83
	1944	94.64	89.01	100.79
2823	1940	17.64	11.62	19.49
	1941	6.72	2.40	11.66
	1942	9.70	4.63	14.90
	1943	17.54	15.69	18.84
	1944	18.96	16.49	22.15
4156	1940	179.00	178.69	179.31
	1941	179.38	179.18	179.49
	1942	179.28	179.08	179.47
	1943	179.73	179.46	179.99
	1944	180.33	179.91	180.75
4379	1940	33.44	30.70	37.63
	1941	33.02	30.58	35.65
	1942	36.28	32.40	39.00
	1943	38.71	35.31	42.40
	1944	40.91	36.57	45.46
8686	1940	56.22	52.16	61.30
	1941	56.38	53.42	58.88
	1942	58.04	55.80	59.80
	1943	58.40	55.60	60.44
	1944	57.20	56.18	58.13

Precipitation at the University of Arizona, at Tucson, during 1944, totaled 13.32 inches, which was 1.76 inches above normal. About 40 per cent of the total precipitation for the year came during the months of July, August and September, and caused flood flows in the Santa Cruz River and Rillito Creek. Considerable recharge to the ground-water reservoir occurred during these flood flows. Runoff from melting snow also caused some recharge near the edge of the mountains during the spring of 1944.

The quantity of water pumped for irrigation, municipal and industrial use in the Santa Cruz River Valley of Pima County in 1944 was about 106,000 acre-feet, an increase of 6,000 acre-feet over 1943 and 22,000 acre-feet over 1942. The pumpage for the last three years has exceeded the estimated safe annual yield.

Pumping plants considered in the pumpage inventory were as follows: 285 equipped with electric motors of $7\frac{1}{2}$ horsepower or more, 180 equipped with electric motors of 5 horsepower and 20 equipped with oil or liquified petroleum gas engines. The small electric pumping plants were included this year for the first time.

Well 1337 is an unused well in an area of heavy pumping about 16 miles northwest of Tucson. The water level in this well remained fairly constant during January and February, declined in March, and then rose in April and May. This rise is attributed to recharge from runoff of melting snow near the edge of the mountains. During the next three months--the height of the irrigation season--the water level declined about 10 feet. Thereafter the water level rose, indicating the movement of ground water into the depressed pumped area after the end of the pumping season. At the end of the year the water level was 2.18 feet higher than at the beginning of the year.

Well 2823 is an unused dug well, 500 feet north of Rillito Creek, in an area of coarse material. Because of this fact and the proximity of the well to Rillito Creek, the effects of recharge and pumping are quickly registered. During the first quarter of 1944 the water level in the well dropped 0.87 foot and then rose 2.94 feet during April. There was considerable recharge to the ground-water reservoir by runoff from melting snow during April. A decline in the water level, caused by pumping, took place during May, June and July. In August a rise of 2.79 feet was produced by recharge from flood flows in Rillito Creek. From September to the end of December the water level again declined, and at the end of the year was 3.31 feet lower than at the beginning of the year.

Well 4156 is an unused well east of Tucson that taps the deep ground-water horizons. The water level in this well reflects the withdrawals and recharge over a long period of time. The general trend was downward and at the end of the year the water level was 0.63 foot lower than at the beginning of the year, indicating that the water withdrawn from the deeper water-bearing beds in this area is exceeding the recharge.

Well 4379 is an active irrigation well, 4 miles south of Tucson, and about 300 feet east of the Santa Cruz River. The water level in this well is influenced by pumpage for the city of Tucson, and for irrigation

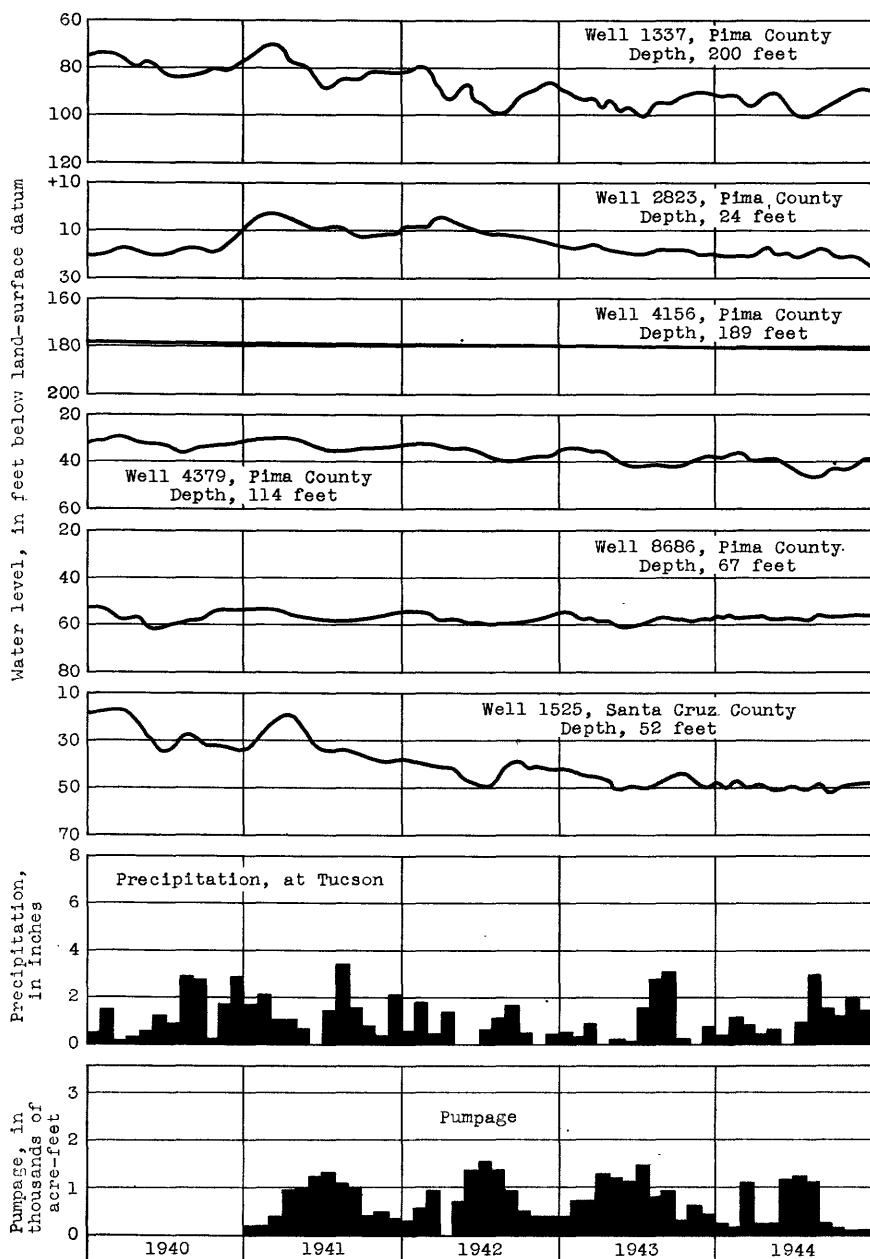


Figure 6.--Graphs showing fluctuations of water level in observation wells in the Santa Cruz Valley, Pima and Santa Cruz Counties, Arizona.

purposes, and by recharge from flood flows in the Santa Cruz River. A decline in the level occurred in January and a rise in February. During the next six months the water level had a downward trend, but as pumpage requirements decreased the last quarter of the year, the water level partially recovered. At the end of the year the water level was 1.74 feet lower than at the beginning of the year.

Well 8686 is a domestic well about one-quarter of a mile south of Sahuarita in a heavily pumped area. The water level rose in January and declined during February and March. During the next six months alternate rises and declines of the water level took place. In the last quarter of 1944 a rise of 1.29 feet in the water level was noted. At the end of the year the water level was 1.20 feet higher than at the beginning of the year, indicating considerable recharge to the ground-water reservoir.

Well descriptions and water-level measurements

454 (*949, p. 39; *991, p. 55). Cortaro Farms. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 11 S., R. 11 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 151.95; July 18, 153.26.

457 (*941, p. 57; *949, p. 39; *991, p. 55). T. J. Smith. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 11 S., R. 10 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, pumping; Sept. 1, pumping.

460 (*941, p. 57; *949, p. 39; *991, p. 55). W. E. Anway. NW $\frac{1}{4}$ sec. 27, T. 11 S., R. 10 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, 142.60; Sept. 1, pumping.

461 (*941, p. 57; *949, p. 39; *991, p. 55). T. V. Valenzuela. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 32, T. 11 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 8, 159.07.

463 (*941, p. 57; *949, p. 39; *991, p. 55). Bud Parker. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 11 S., R. 10 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, pumping; Mar. 9, 166.74; Sept. 1, 167.56.

535 (*911, p. 85; 941, p. 58; *949, p. 39; *991, p. 55). Cortaro Farms. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 11 S., R. 11 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 174.23; July 18, 175.73.

1254 (*911, p. 85; *941, p. 58; *949, p. 39; *991, p. 55). Cortaro Farms. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 12 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 97.25; July 18, 100.03; nearby well pumping.

1337 (*911, p. 85; 941, p. 58; *949, p. 39; *991, p. 55). Cortaro Farms. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 16, T. 12 S., R. 12 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 15	92.65	Mar. 29	96.22	July 18	100.34	Oct. 24	93.35
27	92.87	Apr. 27	93.02	28	100.79	Nov. 28	91.02
Feb. 1	92.30	May 29	91.44	Aug. 27	99.73	Dec. 26	89.01
28	92.37	June 27	97.88	Sept. 26	96.07		

1387 (*911, p. 86; 941, p. 58; *949, p. 39; *991, p. 56). Grady Adams. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 12 S., R. 12 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 129.74; July 18, 133.04.

1425 (*911, p. 86; 941, p. 58; *949, p. 40; *991, p. 56). Cortaro Farms. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 12 S., R. 11 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, dry; July 18, dry.

1430 (*941, p. 58; *949, p. 40; *991, p. 56). J. E. Glover. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 12 S., R. 11 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, 192.90; Sept. 1, 193.95; nearby well pumping.

1432 (*941, p. 59; *949, p. 40; *991, p. 56). P. Johansen. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 12 S., R. 11 E. Water level, in feet below land-surface datum, 1944: Mar. 8, 229.78.

1435 (*941, p. 59; *949, p. 40; *991, p. 56). S. B. Niles. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 12 S., R. 11 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, 301.56; Aug. 31, pumping.

1503 (*941, p. 59; *949, p. 40; *991, p. 56). V. Valenzuela. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 12 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 8, 162.60.

1506 (*941, p. 59; *949, p. 40; *991, p. 56). Harry Alexander. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 12 S., R. 10 E. Water levels, in feet below land-surface datum, 1944: Mar. 8, 194.71; Sept. 1, 196.23.

2708 (*911, p. 87; 941, p. 59; *949, p. 40; *991, p. 56). Cortaro Farms. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 13 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 36.01; July 18, 39.51.

2731 (*911, p. 88; 941, p. 60; *949, p. 40; *991, p. 56). Ralph Wetmore. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 13 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 28.95; July 18, 32.49.

2738 (*911, p. 88; 941, p. 60; *949, p. 40; *991, p. 56). Bruce Knapp. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 13 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 36.09; July 18, 36.24.

2808 (*911, p. 88; 941, p. 60; *949, p. 40; *991, p. 56). Courtright Stables. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 13 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 11.97; July 19, 11.68.

2823 (*911, p. 89; 941, p. 61; *949, p. 41; *991, p. 56). Southern Arizona Polo Association. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 28, T. 13 S., R. 14 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	18.94	Apr. 24	16.77	July 28	19.23	Oct. 26	19.32
26	19.05	May 26	18.15	Aug. 28	16.49	Nov. 28	a 19.97
Feb. 29	19.44	June 27	18.88	Sept. 26	18.19	Dec. 27	22.15
Mar. 28	19.71	July 18	20.20				

a Estimated.

2903 (*911, p. 89; *941, p. 61; *949, p. 41; *991, p. 56). E. L. Urquides. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 13 S., R. 15 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 13.72; July 19, 13.17.

2910 (*911, p. 90; 941, p. 61; *949, p. 41; *991, p. 57). V. C. Crouch. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 13 S., R. 15 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 28.97; July 19, 29.10.

4156 (*911, p. 90; 941, p. 62; *949, p. 41; *991, p. 57). Charles Reynard. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 14 S., R. 15 E.

Water level, in feet below land-surface datum, 1944

Jan. 14	179.91	Apr. 24	180.12	July 28	180.35	Oct. 26	180.60
26	180.06	May 26	180.31	Aug. 28	180.42	Nov. 28	180.75
Feb. 26	180.08	June 27	180.30	Sept. 26	180.53	Dec. 27	180.65
Mar. 23	180.19	July 19	180.40				

4375 (*911, p. 91; 941, p. 62; *949, p. 41; *991, p. 57). Hal Manning. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 14 S., R. 13 E. Water level, in feet below land-surface datum, 1944: Jan. 14, 37.67; July 18, pumping.

4379 (*911, p. 91; 941, p. 62; *949, p. 41; *991, p. 57). Hal Manning. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 35, T. 14 S., R. 13 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	37.82	Apr. 25	38.86	July 29	45.46	Oct. 27	43.47
26	36.98	May 26	39.99	Aug. 29	45.36	Nov. 29	40.26
Feb. 26	36.57	June 28	(a)	Sept. 28	43.79	Dec. 29	39.60
Mar. 28	38.59	July 18	45.07				

a Pumping.

4450 (*941, p. 62; *949, p. 41; *991, p. 57). Pima County. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 6, T. 14 S., R. 12 E. Water level, in feet below land-surface datum, 1944: Mar. 9, 68.36.

4452 (*941, p. 62; *949, p. 41; *991, p. 57). Pima County. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 14 S., R. 12 E. Water level, in feet below land-surface datum, 1944: Mar. 9, pumping.

4453 (*941, p. 62; *949, p. 41; *991, p. 57). Pima County. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 14 S., R. 12 E. Water level, in feet below land-surface datum, 1944: Mar. 9, 58.18.

4601 (*941, p. 63; *949, p. 42; *991, p. 57). J. Burrell. Sec. 10, T. 14 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 9, 20.62.

4602 (*941, p. 63; *949, p. 42; *991, p. 57). J. Burrell. Sec. 10, T. 14 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 10, 15.20.

4604 (*941, p. 63; *949, p. 42; *991, p. 57). Frank R. Rendon. SW $\frac{1}{4}$ sec. 24, T. 14 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 10, 306.62.

6404 (*941, p. 63; *949, p. 42; *991, p. 57). Everett Inscho. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 15 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 10, 144.56.

6405 (*941, p. 63; *949, p. 42; *991, p. 57). C. W. Van Camp. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 15 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 10, pumping.

6410 (*941, p. 63; *949, p. 42; *991, p. 57). C. W. Van Camp. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 15 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Mar. 10, 213.51.

6575 (*911, p. 91; 941, p. 63; *949, p. 42; *991, p. 58). H. C. Barker. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 15 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 52.40; Jan. 19, 53.33, pumped recently.

6582 (*911, p. 91; 941, p. 64; *949, p. 42; *991, p. 58). San Xavier School. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 15 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 38.73; July 18, 41.65.

6593 (*911, p. 92; 941, p. 64; *949, p. 42; *991, p. 58). U. S. Indian Service. San Xavier Reservation. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 15 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 29.70; July 18, 31.61.

6612 (*949, p. 42; *991, p. 58). City of Tucson. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 15 S., R. 13 E.

Water level, in feet below land-surface datum, 1944							
Jan. 14	32.42	Apr. 25	32.64	July 29	34.28	Oct. 27	34.03
26	32.38	May 26	32.98	Aug. 29	33.58	Nov. 27	33.65
Feb. 26	32.33	June 28	33.66	Sept. 28	33.84	Dec. 29	33.78
Mar. 28	32.51	July 18	34.13				

7152 (*911, p. 93; 941, p. 64; *949, p. 42; *991, p. 58). State of Arizona. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 16 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 43.76; July 19, 45.39.

7166 (*911, p. 93; 941, p. 65; *949, p. 42; *991, p. 58). Lane Farms. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 16 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 48.55; July 19, 57.92.

8578 (*911, p. 93; 941, p. 65; *949, p. 43; *991, p. 58). Lane Farms. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 17 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 65.67; July 19, 64.77.

8686 (*911, p. 94; 941, p. 65; *949, p. 43; *991, p. 58). Arizona State Highway Department. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 17 S., R. 14 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	57.46	Apr. 25	56.88	July 29	58.13	Oct. 27	57.15
26	56.98	May 26	57.91	Aug. 29	56.67	Nov. 29	56.66
Feb. 26	57.14	June 28	57.60	Sept. 28	57.47	Dec. 29	56.18
Mar. 28	57.33						

9230 (*911, p. 95; 941, p. 65; *949, p. 43; *991, p. 58). J. B. Bull. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 18 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 48.24; July 19, pumping.

9238 (*911, p. 95; 941, p. 66; *949, p. 43; *991, p. 58). Owner's No. E2. Intercontinental Ranch Co. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 26, T. 18 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 43.91; July 19, dry at 47 feet.

10477 (*911, p. 95; 941, p. 66; *949, p. 43; *991, p. 58). Owner's No. #1. Intercontinental Ranch Co. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 3, T. 19 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 14, 52.62; July 19, 55.46.

10483 (*911, p. 96; 941, p. 66; *949, p. 43; *991, p. 58). Gustavo Amado. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 19 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 31.10; July 19, 31.42.

PINAL COUNTY

By J. F. Hostetter

During 1944 the Geological Survey continued measurements of water levels in typical observation wells, and obtaining the amount of water pumped for irrigation and municipal use in Pinal County.

The program included the Santa Cruz River Basin between the Pinal-Pima county line and the confluence of the Santa Cruz with the Gila River, and the Gila River Basin between the Ashurst-Hayden Dam and the confluence of the Santa Cruz and Gila Rivers, and that part of the Queen Creek Area which is situated in Pinal County. All discussion of the Queen Creek Area is given in the Maricopa County section of this report as the major portion of the Queen Creek Area is in Maricopa County.

Fluctuations of water level

Precipitation at the Casa Grande National Ruins in Pinal County during 1944 totaled 10.14 inches, which was 4.30 inches more than in 1943, and

0.47 inch below normal. The deficiency in rainfall for the past 3 years now totals 3.39 inches, which has contributed to the continued lowering of the water levels as shown by the graphs.

The pumpage during 1944 from the ground-water reservoir in the Santa Cruz and Gila River Basins in Pinal County was about 530,000 acre-feet, which includes pumpage from wells of the San Carlos Irrigation District and of the United States Indian Service, as obtained from their records. The total acre-feet pumped represents an increase of 3 percent over 1943, 6 percent over 1942 and 51 percent over 1941. About 607 wells were considered in the pumpage inventory. Of this number 477 wells were equipped with electric motors, 74 wells with oil or liquified petroleum gas engines and 56 wells with natural gas engines.

As the water levels have declined in Pinal County, the pumping lift has increased, as noted, for example, from the records of five wells belonging to Picacho Farms, Inc., in the Eloy Area. Since 1940 the average pumping lift for these five wells has increased 25.51 feet. This corresponds with the decline of 24.22 feet in the static water level during the same period of time in well 1795, an active irrigation well. The change in pumping lift since 1940 for the five wells belonging to Picacho Farms is given in the table below.

Summary of average pumping lift in feet for five wells belonging to
Picacho Farms, Inc., Eloy-Redrock Area

Well No.	1940	1941	1942	1943	1944	Total increase
2111	223.1	219.2	224.9	225.5	235.9	12.8
2113	.....	190.2	219.4	220.9	224.2	34.0
2178	.....	213.3	225.0	229.8	243.5	30.2
2179	219.2	208.0	226.6	224.8	237.4	18.2
2183	195.3	198.3	217.2	216.9	229.8	33.5

In 1944 the total number of wells under observation in Pinal County was 95, in which 428 measurements of water level were made. This represents an increase of 17 wells and 263 measurements over the preceding year. The following table gives a summary of the measurements.

Frequency of measurement and number of wetted-tape measurements for all
observation wells in Pinal County during 1944

Location	Measured monthly	Measured monthly since Aug.	Measured once or more	No. of wells	No. of measurements
Eloy-Redrock area	2	5	22	29	87
Chulich-Maricopa area	2	5	10	17	86
Casa Grande-Coolidge-Florence area	5	6	21	32	144
Queen Creek area	0	12	5	17	111
Totals	9	28	58	95	428

The following table summarizes the trends in the key observation wells measured monthly. It will be noted that the water levels in all of the wells listed, except in 890, are on a downward trend, reflecting the unfavorable conditions of recharge and expanded water activities. The recharge to well 890 from canal and irrigation seepage is sufficient to counteract the adverse effects of pumpage.

Summary of monthly data on water levels in observation wells in Pinal County, in feet below land-surface datum

Well No. and location	Year	Average water level	Highest static level	Lowest static level
Eloy-Redrock Area:				
1795	1941	131.91	124.47	141.95
	1942	141.60	138.70	144.47
	1943	153.32	138.70	164.70
	1944	155.85	144.51	170.79
1798	1941	109.32	107.14	111.89
	1942	116.80	112.61	118.52
	1943	119.73	118.54	121.75
	1944	122.80	121.67	124.15
Chuichu-Maricopa Area:				
890	1941	32.22	30.09	33.89
	1942	29.27	27.32	30.61
	1943	28.48	27.61	29.24
	1944	29.09	28.40	29.69
1532	1941	110.01	107.78	111.94
	1942	114.45	112.33	116.76
	1943	118.38	114.66	121.49
	1944	123.02	119.06	126.90
Casa Grande-Coolidge-Florence Area				
249	1943	33.46	32.91	34.34
	1944	34.68	33.49	36.39
258	1943	17.36	16.65	18.21
	1944	18.63	17.73	19.63
324	1943	78.99	77.03	81.27
	1944	81.63	80.23	83.84
341	1943	19.50	15.30	24.17
	1944	22.82	20.21	24.97
975	1941	33.84	33.35	34.57
	1942	36.01	33.70	38.06
	1943	38.00	36.58	39.45
	1944	37.57	35.99	40.25

Starting in August 1944, 16 wells were added to the regular monthly observation line, raising the number to 25. The addition was made in order that the effects of pumping and recharge might be measured in all of the newly developed areas and also in the older areas where many new wells

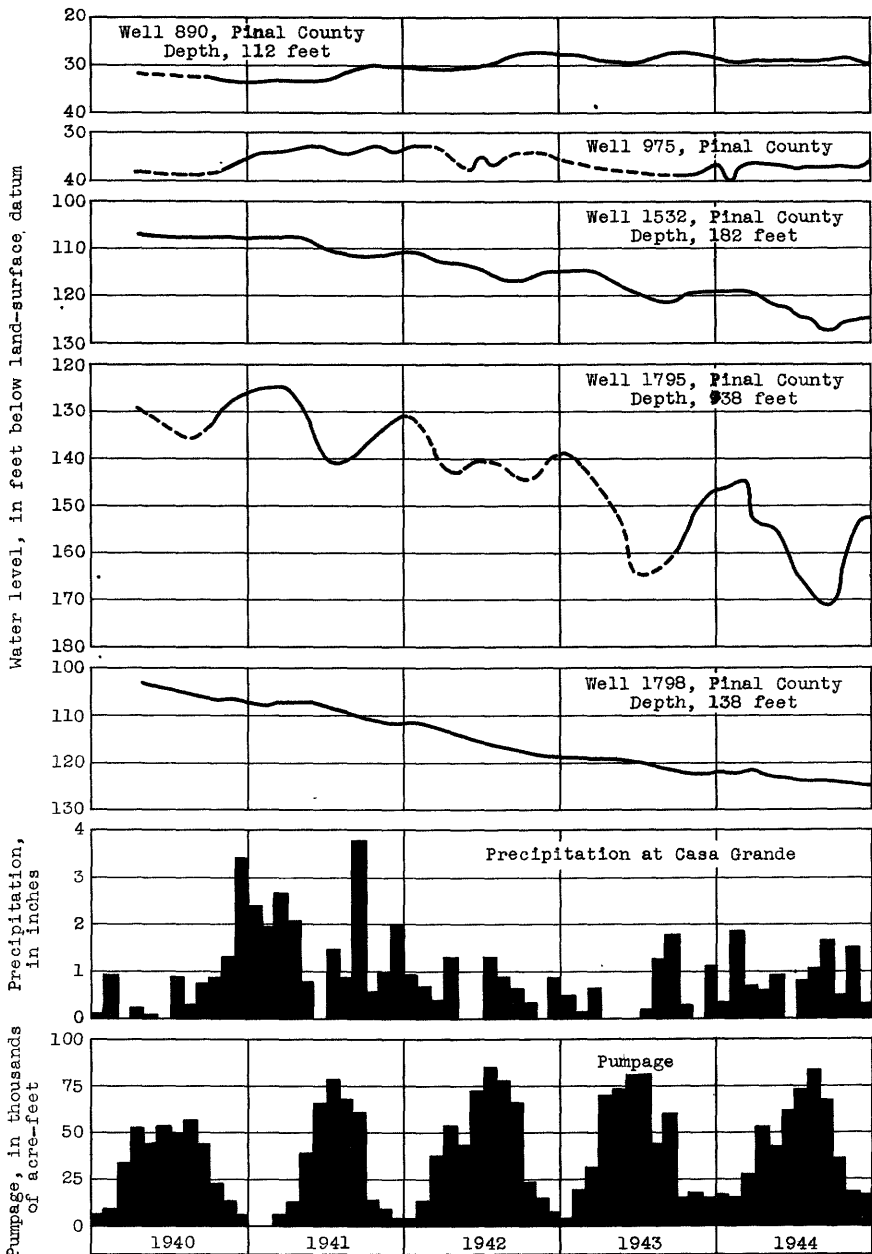


Figure 7.--Graphs showing fluctuations of water level in observation wells in the Casa Grande-Eloy area, Pinal County, Arizona.

had been drilled. It is interesting to note the wide variation in depths to water throughout the county, which ranges from 18 feet in well 258 to 158 feet in well 1864.

The fluctuations of water levels in five typical observation wells in this area are shown by the graphs in figure 7. These fluctuations are discussed below.

Well 890 is an unused well situated a few miles northwest of Casa Grande, at the western edge of an area irrigated mainly by surface water and at the eastern edge of an area irrigated by pumped water. During the first half of 1944 the water level declined from 28.10 feet to 29.69 feet, a drop of 1.59 feet. Starting in July the recharge from irrigation and canal seepage caused a rise in the water level that continued through October and amounted to 1.11 feet. After the irrigation season the water level started to decline during November and December. At the end of the year the water level was 1.18 feet lower than at the beginning of the year.

Well 975 is an active irrigation well situated about one mile northeast of Casa Grande. The water level in this well declined during the irrigation season and recovered after pumping had ceased. At the end of the year the water level was 0.70 foot higher than at the beginning of the year.

Well 1532, which is about 7 miles southwest of Casa Grande, is in an area of heavy pumping. The water level rose slightly during January and February, declined during the next seven months and partially recovered during the last three months of the year. The water level at the end of the year was 4.97 feet lower than at the beginning of the year and 16.99 feet lower than in April 1940, when measurements began, showing the cumulative effect of withdrawals from the ground-water reservoir.

Well 1795 is an active irrigation well south of Eloy and reflects general conditions in the center of this heavily pumped area. The water level rose during the first part of the year, declined during the irrigation season with partial recovery at the end of the year, but measurements in November 1943 and November 1944 showed a decline of 5.65 feet in the static water level. In September 1944 the water level reached an all time low of 170.79 feet. Since measurements started in April 1940 to December 1944 the water level has declined 24.22 feet.

Well 1798, a key observation well about 6.5 miles southwest of Eloy, is near the western edge of the heavily pumped Eloy area. The water level in this well rose very slightly the first part of the year and then declined continuously the rest of the year. At the end of the year the water level was 2.40 feet lower than at the beginning of the year. The total drop in the water level since April 1940 was about 20.5 feet, a definite indication that recharge does not equal withdrawals.

Well descriptions and water-level measurements

12 (*941, p. 69; 949, p. 46; *991, p. 62). Mr. Dobson. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 1 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 8, 259.51; June 16, 259.66; Aug. 11, 259.73.

22 (*911, p. 81; 941, p. 69; 949, p. 46; *991, p. 62). Hart Mullins. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 1 S., R. 10 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 8	15.15	July 25	11.17	Sept. 26	11.91	Nov. 19	14.27
June 16	9.40	Aug. 9 a	11.71	Oct. 25	13.59	Dec. 28	14.86
26	10.24	10	a 9.58				

a Queen Creek flowing.

23 (*911, p. 81; 941, p. 69; 949, p. 47; *991, p. 62). Hart Mullins. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 1 S., R. 10 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 8	14.42	July 25	10.19	Sept. 26	11.01	Nov. 19	13.26
June 16	8.26	Aug. 9 a	10.80	Oct. 25	12.35	Dec. 28	13.97
26	9.21	10	a 8.52				

a Queen Creek flowing.

24 (*911, p. 82; 941, p. 69; 949, p. 47; *991, p. 62). Jack Gray. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 1 S., R. 10 E.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 8	36.72	Aug. 9	33.10	Sept. 26	33.14	Nov. 19	35.06
June 16	30.65	10	32.31	Oct. 25	34.27	Dec. 28	(a)
July 25	32.36						

a Water seeping into well prevented measurement.

25b. Clemens Cattle Co. Unsurveyed territory, approximately SW $\frac{1}{4}$ sec. 32, T. 1 S., R. 11 E., about 2 miles east of Whitlow Dam site and 200 feet south of south bank of Queen Creek. Used dug stock well, 3- by 4-foot concrete casing, depth 31.7 feet. Measuring point, top of 1- by 6-inch timber, east side, 2 feet above land surface. Equipped with windmill.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	12.45	Aug. 11	9.89	Oct. 25	14.74	Dec. 28	16.64
Aug. 9	12.96	Sept. 26	13.39	Nov. 19	15.41		

25d. Francisco Rascon. Unsurveyed territory, approximately SW $\frac{1}{4}$ sec. 23, T. 1 S., R. 11 E., about 3.3 miles northeast of Whitlow Dam site and at rear of unpainted frame house, 15 feet north of Queen Creek Canyon Road. Used dug domestic and irrigation well, 3- by 5-foot concrete casing, depth 16 feet. Measuring point, top of 2- by 10-inch timber, flush with concrete casing, east side, 0.80 foot above land surface. Equipped with centrifugal pump and 2-horsepower gasoline engine.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	10.23	Aug. 11	7.49	Oct. 25	11.38	Dec. 28	12.81
Aug. 9 a	10.41	Sept. 26	9.74	Nov. 19	11.67		

25g. Agapito Camarena. Unsurveyed territory, approximately NW $\frac{1}{4}$ sec. 33, T. 1 S., R. 11 E., about 0.45 mile northwest of railroad water tower and 30 feet northeast of unpainted frame house. Unused dug domestic and irrigation well, 3 $\frac{1}{2}$ - by 5-foot wood casing, depth 23.7 feet. Measuring point, lower edge of nail head, northeast corner of casing, 0.20 foot below land surface.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	14.52	Aug. 11	10.80	Oct. 25	15.65	Dec. 28	16.89
Aug. 9	11.64	Sept. 26	14.44	Nov. 19	15.83		

a Queen Creek flowing.

25i. Magma Railroad. Unsurveyed territory, approximately NE $\frac{1}{4}$ sec. 33, T. 1 S., R. 11 E., about 250 feet northwest of Queen Creek school-house and 300 feet north of water tower. Used dug railroad well, 6- by 6 $\frac{1}{2}$ -foot wood casing, depth 10 feet. Measuring point, top of 1 3/4- by 5-inch timber, north side, 1.5 feet above land surface.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
July 26	2.78	Sept. 26	2.87	Nov. 19	4.61
Aug. 9	1.32	Oct. 25	4.12	Dec. 28	5.84

25j. Owner unknown. Unsurveyed territory, approximately NW $\frac{1}{4}$ sec. 34, T. 1 S., R. 11 E., about 0.20 mile southeast of Queen Creek school-house and 75 feet southeast of unpainted frame house. Used dug domestic well, 5 $\frac{1}{2}$ - by 5 $\frac{1}{2}$ -foot wood casing, depth 28.5 feet. Measuring point, top of 3- by 10-inch timber, south side, at land surface. Equipped with rope and bucket.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	18.07	Aug. 11	16.43	Oct. 25	19.92	Dec. 28	22.70
Aug. 9	17.86	Sept. 26	17.87	Nov. 19	20.86		

a Queen Creek flowing.

25k. R. E. Olson. Unsurveyed territory, approximately SE $\frac{1}{4}$ sec. 34, T. 1 S., R. 11 E., about 0.50 mile southeast of railroad bridge and 35 feet east of white frame house at base of steep bank. Used dug domestic well, diameter 4 $\frac{1}{2}$ feet, galvanized-iron casing, depth 37.5 feet. Measuring point, top of pipe tee, 0.70 foot above land surface. Equipped with jack pump, 2-horsepower gasoline engine, and windmill.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	18.19	Aug. 11	15.99	Oct. 25	21.35	Dec. 28	24.52
Aug. 9	19.20	Sept. 26	18.24	Nov. 19	22.54		

a Queen Creek flowing.

25o. Unsurveyed territory, approximately SE $\frac{1}{4}$ sec. 2, T. 2 S., R. 11 E., about 0.60 mile northwest of intersection of Highway 60-70 and Queen Creek Canyon Road and about 0.30 mile southwest of the latter. Abandoned dug domestic well, 4- by 5-foot concrete casing, depth 46 feet. Measuring point, top of 2- by 12-inch timber, north side, 0.65 foot above land surface.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 26	20.44	Aug. 11	19.88	Oct. 25	26.39	Dec. 28	29.71
Aug. 10	21.10	Sept. 26	22.40	Nov. 19	28.29		

a Queen Creek flowing.

25r. 88 Ranch. Unsurveyed territory, approximately NE $\frac{1}{4}$ sec. 10, T. 2 S., R. 11 E., about 2.50 miles southwest of intersection of Highway 60-70 and Queen Creek Canyon Road and about 0.20 mile north of paved highway. Used dug stock well, 5- by 5-foot wood casing, depth 8.5 feet. Measuring point, top of 5- by 5-inch timber, corner south side, 0.30 foot above land surface. Equipped with windmill.

25r. 88 Ranch--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
July 27	2.98	Sept. 26	2.95	Nov. 19	3.05
Aug. 9	3.04	Oct. 25	3.11	Dec. 28	2.93

32 (*911, p. 82; 941, p. 69; 949, p. 47; *991, p. 62). L. C. Baldwin. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 1 S., R. 10 E.

Water level, in feet below land surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 8	19.73	July 25	13.86	Aug. 10	11.23	Oct. 25	16.15
June 16	11.44	Aug. 9	14.87	Sept. 26	13.89	Nov. 19	17.28
26	12.41						

a Queen Creek flowing.

35 (*911, p. 82; 941, p. 70; 949, p. 47; *991, p. 62). E. N. Little. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 2 S., R. 10 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 8	399.93	July 26	398.89	Aug. 11	398.09	Nov. 19	398.13
June 12	399.48	Aug. 9	398.27	Sept. 26	398.01	Dec. 28	397.77
26	398.87	10	398.18	Oct. 25	398.34		

a Queen Creek flowing.

41 (*911, p. 82; 941, p. 70; 949, p. 47; *991, p. 62). W. A. Barkley. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 2 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 223.53; Aug. 16, 224.29.

71 (*911, p. 82; 941, p. 70; 949, p. 47; *991, p. 63). Magma Arizona Railroad. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 3 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 155.44; Aug. 16, 156.88.

93 (*949, p. 47; *991, p. 63). Owner's No. 64. U. S. Indian Service. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 3 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 6	52.03	Aug. 23	53.37	Oct. 24	52.94	Dec. 27	51.75
Aug. 4	53.19	Sept. 23	53.22	Nov. 19	52.39		

122 (*949, p. 47; *991, p. 63). Owner's No. 52. U. S. Indian Service. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 3 S., R. 4 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 27.24; July 22, 26.89.

123 (*949, p. 47; *991, p. 63). Owner's No. 61. U. S. Indian Service. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 36, T. 3 S., R. 4 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 23.22; July 22, 23.95.

174 (*949, p. 47; *991, p. 63). G. W. Yancy. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 4 S., R. 3 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 4	24.79	Aug. 18	26.86	Oct. 25	25.97	Dec. 27	25.59
July 22	25.57	Sept. 20	25.86	Nov. 27	25.83		

176 (*949, p. 47; *991, p. 63). Mr. Sherman. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 4 S., R. 3 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 41.59; July 22, temporary obstruction in well.

249 (*949, p. 48; *991, p. 63). Owner's No. 11-X. U. S. Indian Service. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 4, T. 4 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	34.99	Apr. 27	33.49	July 28	34.77	Oct. 24	35.01
Feb. 6	33.72	May 29	35.30	Aug. 26	36.39	Nov. 19	34.40
28	33.59	June 27	36.21	Sept. 23	35.05	Dec. 27	34.32
Mar. 29	33.55						

257 (*949, p. 48; *991, p. 63). Owner's No. 44. U. S. Indian Service. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T. 4 S., R. 7 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 6	20.69	Aug. 23	21.79	Oct. 24	22.28	Dec. 27	21.72
Aug. 4	21.78	Sept. 23	22.08	Nov. 19	21.97		

258 (*949, p. 48; *991, p. 63). Owner's No. 42. U. S. Indian Service. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 4 S., R. 7 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	18.03	Apr. 27	17.73	July 28	18.85	Oct. 24	19.53
Feb. 6	18.03	May 29	18.06	Aug. 26	19.09	Nov. 19	19.63
28	18.04	June 27	18.42	Sept. 23	19.31	Dec. 27	19.56
Mar. 29	17.87						

259 (*949, p. 48; *991, p. 63). Owner's No. 43. U. S. Indian Service. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 4 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 6, 18.80; Aug. 4, 19.85.

278 (*941, p. 70; 949, p. 48; *991, p. 63). Arizona Ranches, Inc. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 4 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 10, 164.43; Aug. 17, 165.47.

299 (*949, p. 48; *991, p. 63). E. C. High. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 4 S., R. 9 E. Water levels, in feet below land-surface datum, 1944: Feb. 6, pumping; Aug. 5, pumping.

324 (*949, p. 48; *991, p. 63). Owner's No. 1. U. S. Indian Service. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 21, T. 4 S., R. 10 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	80.23	Apr. 27	81.29	July 28	81.48	Oct. 25	82.49
Feb. 6	80.42	May 29	81.02	Aug. 26	81.94	Nov. 19	82.97
28	80.91	June 26	81.11	Sept. 23	82.06	Dec. 27	83.84
Mar. 29	81.37						

327 (*949, p. 48; *991, p. 64). Owner's No. 4. U. S. Indian Service. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 4 S., R. 10 E. Water level, in feet below land-surface datum, 1944: Feb. 6, 93.78; Aug. 5, 94.36.

341 (*949, p. 48; *991, p. 64). Owner's No. 7. U. S. Indian Service. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 7, T. 4 S., R. 11 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	24.66	Apr. 27	23.06	July 28	20.21	Oct. 25	23.51
Feb. 6	24.97	May 29	22.05	Aug. 26	21.18	Nov. 19	22.10
28	24.87	June 26	20.73	Sept. 23	22.04	Dec. 27	23.57
Mar. 29	23.73						

437 (*949, p. 49; *991, p. 64). Owner's No. 76. U. S. Indian Service. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 5 S., R. 9 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 6	114.24	Aug. 23	116.79	Oct. 25	116.89	Dec. 26	115.60
Aug. 4	115.86	Sept. 23	117.59	Nov. 19	116.28		

433 (*949, p. 49; *991, p. 64). S. H. Wynn. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 5 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 6, 55.62; Aug. 4, pumping.

503 (*949, p. 49; *991, p. 64). L. D. Ulmer. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 1, T. 5 S., R. 8 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 6	38.49	Sept. 21	39.43	Nov. 19	39.23	Dec. 26	39.45
Aug. 5	39.42	Oct. 25	39.24				

554 (*949, p. 49; *991, p. 64). S. B. Rial. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 13, T. 5 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 6, 50.86; Aug. 4, 57.60.

556. Owner unknown. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 5 S., R. 7 E., about 3 miles west of Coolidge, 0.10 mile north and about 75 feet west of road. Unused drilled irrigation well, diameter 20 inches. Measuring point, top of casing, 0.20 foot above land surface.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Aug. 21	62.15	Oct. 24	61.20	Dec. 26	55.38
Sept. 21	62.52	Nov. 19	58.39		

616 (*949, p. 49; *991, p. 64). H. D. Murphy. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 5 S., R. 4 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 4	73.11	Aug. 18	73.73	Oct. 25	74.59	Dec. 27	73.78
July 22	73.17	Sept. 20	74.32	Nov. 27	74.18		

618 (*949, p. 49; *991, p. 64). J. R. Ross. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30, T. 5 S., R. 4 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 4	85.39	Aug. 18	86.61	Oct. 25	87.25	Dec. 27	(a)
July 21	86.33	Sept. 20	86.97	Nov. 27	87.32		

a Trail impassable.

653 (*949, p. 49; *991, p. 64). Bernice White. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 5 S., R. 3 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 4	57.03	Aug. 18	58.02	Oct. 25	58.51	Dec. 27	(a)
July 22	57.79	Sept. 20	58.29	Nov. 27	58.54		

a Trail impassable.

724. Vester Brannum. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 29, T. 6 S., R. 3 E. About 17.5 miles west of Casa Grande and about 0.40 mile northwest of Highway 84. Used drilled stock well, reported depth 252 feet. Measuring point, bottom of pump base, northeast side, 0.75 foot above land surface. Equipped with pump and gasoline engine. Water levels, in feet below land-surface datum, 1944: Aug. 18, 212.73; Sept. 20, 213.13; Oct. 25, 213.61; Dec. 27, 213.94.

738 (*949, p. 50; *991, p. 64). A. A. Wallace. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 6 S., R. 3 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 133.72; July 21, pumping.

801 (*941, p. 70; 949, p. 50; *991, p. 64). Jake Stegmeler. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 6 S., R. 4 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 78.85; July 21, 79.53.

818 (*949, p. 50; *991, p. 65). Earl Lane. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 6 S., R. 4 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, 108.54; July 21, 112.88; Aug. 18, casing pulled; well filled in, measurements discontinued.

887 (*941, p. 71; 949, p. 50; *991, p. 65). Paul Knobloch. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 6 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Mar. 4, 42.23; July 22, 42.64.

890 (*941, p. 71; 949, p. 50; *991, p. 65). Mrs. Gus Dratzka. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 6 S., R. 5 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	28.40	Apr. 27	29.59	July 28	29.39	Oct. 25	28.58
Feb. 4	28.52	May 29	29.59	Aug. 26	29.15	Nov. 27	29.21
28	28.88	June 27	29.69	Sept. 25	28.66	Dec. 26	29.28
Mar. 29	28.29						

893 (#941, p. 71; 949, p. 50; *991, p. 65). P. H. Ethington. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 16, T. 6 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 48.76 (nearby well pumping); July 21, 49.02; Oct. 5, 48.92.

906 (#949, p. 51; *991, p. 65). Owner's No. 100. U. S. Indian Service. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 6 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 31.15; July 21, 32.07.

907 (#941, p. 72; 949, p. 51; *991, p. 65). Burris Bros. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 6 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 4, 33.73; July 21, 40.52.

961 (#941, p. 72; 949, p. 51; *991, p. 65). Floyd Smith. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 6 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 29.10; July 22, 30.57.

967 (#941, p. 73; 949, p. 51; *991, p. 65). E. E. Rosenberry. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 10, T. 6 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 5	34.69	Aug. 21	35.16	Oct. 25	35.17	Dec. 26	35.27
Aug. 2	35.09	Sept. 21	35.27	Nov. 27	(a)		

a Road impassable.

968 (#941, p. 73; 949, p. 51; *991, p. 65). G. E. Sherrill. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 13, T. 6 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, water seeping into well prevented measurement; Aug. 2, pumping.

975 (#941, p. 73; 949, p. 51; *991, p. 65). Gilbert Bros. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 6 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Feb. 5	40.25	Apr. 27	(a)	July 28	37.59	Oct. 25	37.38
28	36.83	May 29	(a)	Aug. 27	37.39	Nov. 27	37.53
Mar. 29	(a)	June 27	(a)	Sept. 25	(a)	Dec. 26	35.99

a Pumping.

981 (#941, p. 74; 949, p. 51; *991, p. 65). Gilbert Bros. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 6 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Jan. 27	39.96	Mar. 29	42.49	May 29	42.73	Nov. 27	43.17
Feb. 5	39.60	Apr. 27	41.55	June 27	44.56	Dec. 26	43.24

991 (#941, p. 74; 949, p. 51; *991, p. 65). Mrs. Emma Pennington. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 6 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 41.83; Aug. 2, 44.24; Sept. 21, 42.35.

1002 (#949, p. 52; *991, p. 66). Owner's No. 103. U. S. Indian Service. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 6 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Mar. 4, 32.33; Aug. 2, 33.60.

1066 (#941, p. 74; 949, p. 52; *991, p. 66). Diwan Singh. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 6 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 55.51; Aug. 2, pumping.

1072 (#949, p. 52; *991, p. 66). Owner's No. 95. U. S. Indian Service. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 6 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 59.04; Aug. 2, 64.23.

1079 (#949, p. 52; *991, p. 66). Owner's No. 84. U. S. Indian Service. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 35, T. 6 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 75.39; Aug. 2, 95.99.

1118 (#941, p. 75; 949, p. 52; *991, p. 66). Dick Shiflet. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 6 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 55.63; Aug. 2, pumping.

1153 (#949, p. 52; *991, p. 66). Owner's No. 82. U. S. Indian Service. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30, T. 6 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 76.56; Aug. 2, 84.99.

1157 (*949, p. 52; *991, p. 66). Owner's No. 78. U. S. Indian Service. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 35, T. 6 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 30.70; Aug. 2, 35.18.

1162 (*949, p. 52; *991, p. 66). Mr. McFarland. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 27, T. 6 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, pumping; Aug. 2, 76.84.

1172. W. W. Ray. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 6 S., R. 8 E., about 9 miles north of Eloy and 200 feet north of paved road. Used drilled domestic well, diameter 6 inches, reported depth 215 feet. Measuring point, top of casing, east side, 0.60 foot above land surface. Equipped with pump and electric motor.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Aug. 21	98.89	Oct. 24	90.57	Dec. 26	81.76
Sept. 21	96.41	Nov. 27	81.88		

1173. Owner unknown. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 10, T. 6 S., R. 8 E., about 4.50 miles south of Coolidge and 200 feet east of paved highway. Used dug domestic well. Measuring point, top of 1-inch board, north side, 0.60 foot above land surface. Equipped with hand pump. Water level, in feet below land-surface datum, 1944: Aug. 21, 56.74.

1331 (*949, p. 52; *991, p. 66). D. C. Roberts. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 7 S., R. 8 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 1	104.39	Sept. 25	112.29	Nov. 27	111.09
Aug. 2	(a)	Oct. 24	111.99	Dec. 26	109.58

a Pumping.

1341 (*949, p. 52; *991, p. 66). A. B. Houser. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 7 S., R. 3 E. Measurements discontinued in 1944. Measuring hole lost by resetting of pump.

1405 (*949, p. 53; *991, p. 66). S. C. McFarland. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 7 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 5, 90.73; Aug. 2, pumping.

1421 (*941, p. 75; 949, p. 53; *991, p. 66). F. W. Shedd. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 7 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, pumping; Mar. 4, 90.54; July 23, 93.95.

1422 (*941, p. 75; 949, p. 53; *991, p. 66). D. S. Cramer. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 7 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 89.64; Aug. 2, 92.12.

1430. Les Milligan. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 2, T. 7 S., R. 7 E., about 7 miles north, 2.50 miles west, and 0.50 mile south of Eloy. Used drilled domestic well. Measuring point, bottom of pump base, northwest corner, at land surface. Equipped with pump and electric motor.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Aug. 22	109.81	Oct. 24	101.32	Dec. 26	91.46
Sept. 21	105.53	Nov. 27	91.49		

1476 (*941, p. 75; 949, p. 53; *991, p. 66). D. A. Trekell. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 7 S., R. 6 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 3	38.28	Aug. 19	40.13	Oct. 25	40.72	Dec. 27	40.39
Aug. 3	39.92	Sept. 25	40.52	Nov. 27	40.64		

1479 (*941, p. 76; 949, p. 53; *991, p. 67). Paul Brophy. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 7 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 61.43; Aug. 2, 63.82.

1485 (*941, p. 76; 949, p. 53; *991, p. 67). F. W. Shedd. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 7 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, trail impassable; Mar. 4, 63.57; Aug. 2, 66.24.

1489 (*949, p. 53; *991, p. 67). Albert Steinfeld. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 7 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, dry; Aug. 3, dry.

1532 (*941, p. 76; 949, p. 53; *991, p. 67). Phoenix Church of Brethren. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 7 S., R. 5 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	119.22	Apr. 27	121.33	Aug. 19	125.66	Oct. 25	125.72
Feb. 3	119.07	May 29	122.02	26	126.26	Nov. 27	124.74
28	119.06	June 27	123.20	Sept. 25	126.90	Dec. 27	124.36
Mar. 29	119.79	July 28	124.90				

1539 (*949, p. 54; *991, p. 67). W. S. Stephenson Estate. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 7 S., R. 5 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 3	83.66	Aug. 19	96.76	Oct. 25	89.61
Aug. 4	96.49	Sept. 25	90.58	Dec. 27	88.66

1540 (*949, p. 54; *991, p. 67). L. R. Meyers. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 7 S., R. 5 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, 91.15; Aug. 4, trail impassable.

1548. Myers Farms. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 23, T. 7 S., R. 5 E., about 6 miles south and 2.6 miles west of Casa Grande. Unused drilled irrigation well, diameter 20 inches, depth 171 feet. Measuring point, top of casing, east side, 1.50 feet above land surface. Water levels, in feet below land surface datum, 1944: Aug. 4, 75.51; Sept. 25, 75.71; Oct. 25, 75.58; Dec. 27, 75.55.

1583 (*949, p. 54; *991, p. 67). State of Arizona. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 7 S., R. 4 E. Measurements discontinued in 1944. Measuring hole lost by resetting of pump.

1716 (*941, p. 77; 949, p. 54; *991, p. 67). Smith-Thornburg Co. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 8 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, 68.34; Aug. 3, 69.57.

1725 (*949, p. 54; *991, p. 67). State of Arizona. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 21, T. 8 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, 71.76; Aug. 2, 72.47.

1776 (*941, p. 77; 949, p. 54; *991, p. 67). S. C. Milligan. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 8 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, water seeping into well prevented measurement; July 23, water seeping into well prevented measurement; Aug. 3, pumping.

1787 (*941, p. 77; 949, p. 54; *991, p. 67). Sam Phillips. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 8 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 128.73; July 23, pumping; Aug. 3, pumping.

1791 (*941, p. 77; 949, p. 54; *991, p. 67). S. G. Wilson. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 8 S., R. 7 E. Water level, in feet below land-surface datum, 1944: Feb. 2, 129.50; July 23, pumping; Aug. 3, pumping.

1795 (*941, p. 78; 949, p. 54; *991, p. 67). Jack Pretzer, Jr. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 8 S., R. 7 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	(a)	Feb. 28	144.51	Apr. 27	(a)	June 27	162.81
Feb. 1	145.64	Mar. 29	153.15	May 29	159.96	July 19	(a)

a Water seeping into well prevented measurement.

1795. Jack Pretzer, Jr.--Continued.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Aug. 27	(a)	Oct. 24	161.15	Nov. 27	153.93
Sept. 25	170.79			Dec. 26	152.33

a Water seeping into well prevented measurement.

1798 (*941, p. 78; 949, p. 55; *991, p. 68). F. W. Shedd. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 8 S., R. 7 E.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 27	121.79	Apr. 27	122.13	July 28	122.92
Feb. 2	121.76	May 29	122.36	Aug. 27	123.36
28	121.67	June 27	122.63	Sept. 25	123.71
Mar. 29	121.84	July 23	122.90	Oct. 24	123.94
				Nov. 27	124.06
				Dec. 26	124.15

1855 (*949, p. 55; *991, p. 68). D. A. Trekell. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 8 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 1, 142.09; July 19, pumping.

1864. John Arujo. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 8 S., R. 8 E., about 1.50 miles south of Eloy and 0.50 mile west of road. Used drilled domestic and stock well, diameter 6 inches. Measuring point, top of casing, east side, 1.20 feet above land surface. Equipped with windmill.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Aug. 22	158.76	Oct. 24	159.54	Dec. 26	155.96
Sept. 25	161.96	Nov. 27	157.39		

1880 (*941, p. 78; 949, p. 55; *991, p. 68). Arizona Farm Products Co., locally known as Jack Pretzer well 11. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 31, T. 8 S., R. 8 E. Measuring hole lost by resetting of pump; measurements discontinued after Aug. 27, 1944.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 27	161.02	Apr. 27	(a)	June 27	(a)
Feb. 1	160.76	May 29	171.42	July 19	(a)
				Aug. 27	(a)

a Pumping.

1884 (*941, p. 78; 949, p. 55; *991, p. 68). Arizona Farm Products Co., locally known as Jack Pretzer well 6. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 33, T. 8 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 1, 158.77; July 19, pumping.

1886 (*949, p. 55; *991, p. 68). Clark & Johnson. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 8 S., R. 8 E. New pump installed in October, 1943, making measurements impossible; measurements discontinued.

2104 (*941, p. 79; 949, p. 55; *991, p. 68). P. G. Wolfe. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 9 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 1, 186.05; July 19, pumping.

2108 (*949, p. 55; *991, p. 68). J. F. Nutt. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 26, T. 9 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 1, 160.06; July 19, pumping.

2173 (*949, p. 55; *991, p. 68). Owner's No. 2. R. W. Dickey. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 9 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 135.36; July 23, 158.80.

2174. Carl West. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 9 S., R. 7 E., about 11 miles south of Toltec and 100 feet west of road. Unused drilled irrigation well, diameter 20 inches. Measuring point, top of casing, east side, 1.75 feet below land surface.

2174. Carl West--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
July 23	156.10	Sept. 25	149.96	Nov. 27	130.43
Aug. 23	159.31	Oct. 24	134.60	Dec. 26	130.56

2233 (*949, p. 55; *991, p. 68). J. Sevak. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24, T. 9 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 90.42; July 23, 93.31.

2236 (*949, p. 56; *991, p. 68). B. F. Nelssen. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 3, T. 9 S., R. 6 E. Water levels, in feet below land-surface datum, 1944: Feb. 3, 92.32; Aug. 3, 94.88.

2311 (*941, p. 79; 949, p. 56; *991, p. 68). J. C. Kinney. NW $\frac{1}{4}$ sec. 3, T. 10 S., R. 7 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 102.60; July 23, 107.33.

2314 (*941, p. 79; 949, p. 56; *991, p. 68). Roland Curry. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 10 S., R. 7 E. Obstruction in well at about 95 feet; measurements discontinued after May 4, 1943.

2332 (*941, p. 79; 949, p. 56; *991, p. 69). J. C. Kinney. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 10 S., R. 8 E. Water levels, in feet below land-surface datum, 1944: Feb. 2, 161.73; July 23, 167.34.

2351 (*949, p. 56; *991, p. 69). J. C. Kinney. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 10 S., R. 9 E.

Water level, in feet below land-surface datum, 1944

Aug. 24	151.84	Oct. 24	152.52	Dec. 26	152.94
Sept. 19	152.16	Nov. 27	151.37		

2354 (*941, p. 79; 949, p. 56; *991, p. 69). H. H. Cake. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 10 S., R. 9 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 149.41; July 18, 150.33.

2361 (*941, p. 80; 949, p. 56; *991, p. 69). King Bros. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 22, T. 10 S., R. 9 E. No measurements made in 1944.

2363 (*941, p. 90; *949, p. 56; *991, p. 69). H. B. Aguirre. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 36, T. 10 S., R. 9 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 138.09; July 18, 139.26.

2383 (*991, p. 69). Tom Soleng. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 34, T. 10 S., R. 10 E. Water levels, in feet below land-surface datum, 1944: Jan. 15, 151.28; July 18, 152.86.

SANTA CRUZ COUNTY

By M. J. Scott and T. P. Shelley

During 1944 the observation of selected wells and preparation of a pumpage inventory in that portion of Santa Cruz County that lies within the Santa Cruz River Valley was continued by the Geological Survey.

Precipitation at Nogales in Santa Cruz County during 1944 totaled 17.11 inches, which was 1.05 inches above normal. Because of this rainfall ground-water recharge may be considered about normal for the year.

The pumpage from wells in Santa Cruz County during 1944 was approximately 12,500 acre-feet, a decrease of about 16 $\frac{1}{2}$ percent over 1943. This decrease in pumpage may be attributed to several factors. During 1944

two formerly active irrigation wells were converted to stock wells and 6 wells reported no pumpage during the year. A decrease of $17\frac{1}{2}$ percent in power consumption is further evidence of decreased pumpage. Approximately 42 wells and 2 infiltration galleries were considered in the pumpage inventory. Of this number, 23 wells were equipped with electric motors and 19 wells with oil or liquified petroleum gas engines.

The total number of wells under observation in 1944 was 10, in which 40 measurements of water level were made. Two wells were measured at monthly intervals and 7 wells were measured once or more during the year.

The following table summarizes data for the two wells measured monthly, showing the average yearly water level, highest static level and lowest static level during the period 1941-44 in the monthly observation wells in Santa Cruz County. From the table it can be seen that the average water level during the 4-year period dropped 15 feet in one well and 17 feet in the other, that the highest static water level in each well was reached in 1941, and that the difference in the lowest static levels in 1943 and 1944 was very slight.

Summary of monthly ground-water data in observation wells,
Santa Cruz County, Ariz.

Well No.	Year	Depth to water below land-surface in feet			Annual precipitation at Nogales
		Average level	Highest static level	Lowest static level	
915	1941	26.33	23.93	30.76	Precipitation (in.) Departure from normal
	1942	33.50	30.90	36.65	
	1943	38.78	34.98	44.28	
	1944	40.78	37.17	43.64	
1525	1941	31.07	18.82	38.80	18.08 +1.65
	1942	42.93	38.07	48.73	11.65 -4.78
	1943	46.69	42.55	50.02	9.79 -6.27
	1944	48.36	47.36	50.27	17.11 +1.05

Well 1525, a domestic well equipped with a windmill, is situated a short distance downstream from the Nogales city pumping station. The water level in this well showed no appreciable change in 1944 due to recharge from average rainfall conditions as compared to the deficiency in rainfall of the preceding years. At the end of the year the water level was 0.51 foot lower than at the beginning of the year, as compared with a drop of 5.67 feet during the preceding year. See figure 6 which is incorporated with the Pima County section of this report.

Well descriptions and water-level measurements

5 (*911, p. 96; 941, p. 81; *949, p. 57; *991, p. 70). R. W. Littlejohn. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 20 S., R. 12 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 60.39; July 20, 62.89.

79 (*911, p. 97; 941, p. 81; *949, p. 57; *991, p. 70). Mrs. Schenkel. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 20 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 28.67; July 20, pumping.

616 (*911, p. 97; 941, p. 81; *949, p. 57; *991, p. 70). Mrs. Mary Ellen Cotter. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 21 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 29.51; July 20, 31.49.

901 (*911, p. 98; 941, p. 82; *949, p. 58; *991, p. 70). T. T. Pendleton. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 22 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, dry; July 20, dry.

908 (*911, p. 98; 941, p. 82; *949, p. 58; *991, p. 70). T. T. Pendleton. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 22 S., R. 13 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 28.22; July 20, pumping.

915 (*911, p. 99; 941, p. 82; *949, p. 58; *991, p. 70). T. T. Pendleton. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 22 S., R. 13 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	37.20	Apr. 25	39.78	July 29	41.93	Oct. 27	42.41
26	37.17	May 26	40.50	Aug. 29	41.85	Nov. 29	43.00
Feb. 26	37.87	June 28	42.26	Sept. 28	42.26	Dec. 29	43.64
Mar. 28	38.45	July 20	42.54				

1504 (*911, p. 100; 941, p. 83; *949, p. 58; *991, p. 71). J. F. Dalton. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 23 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 16.03; July 20, 17.85.

1513 (*911, p. 100; 941, p. 83; *940, p. 58; *991, p. 71). Dines Nelson. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 23 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 18.32; July 20, 19.93.

1525 (*911, p. 100; 941, p. 83; *949, p. 58; *991, p. 71). Camberos Bros. NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 23 S., R. 14 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	48.41	Apr. 25	48.51	July 29	48.85	Oct. 27	48.96
26	49.14	May 26	50.18	Aug. 29	47.92	Nov. 29	48.06
Feb. 26	47.36	June 28	49.43	Sept. 28	50.27	Dec. 29	48.08
Mar. 28	49.53	July 20	49.39				

1912 (*911, p. 101; 941, p. 84; *949, p. 59; *991, p. 71). Simon Mastick. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 8, T. 24 S., R. 14 E. Water levels, in feet below land-surface datum, 1944: Jan. 18, 27.34; July 20, 25.94.

CALIFORNIA

By A. A. Garrett, J. W. Robinson, H. M. Stafford,
G. F. Worts, Jr., and others

SCOPE OF THE WATER-LEVEL PROGRAM

This report shows the progress made in 1944 in the measurement of water levels in California by the Geological Survey in cooperation or collaboration with several other Federal, State, and local agencies. It also reviews, in general, the other principal water-level programs in the State, in which the Geological Survey did not participate but concerning which general information is available.

The following table shows, by ground-water areas, under counties, the distribution of observation wells and the scope of water-level measurements as given in this report. As indicated by the table, the report lists 6,514 water-level measurements made during 1944 in 454 observation wells located in 8 of the 58 counties in the State. One of these counties, San Joaquin, is in the central part of California, but all the remaining seven for which water-level records appear in this report are in the southern part of the State, beyond the Tehachapi Mountains. For two counties, San Diego and Santa Barbara, water levels in wells in all the principal ground-water areas are given; for the other six counties only scattered basins or areas are covered.

Distribution of observation wells in California in 1944

County	Number of observation wells			Number of records of water levels in this report	Number of wells with water-stage recorders (R) or float gages (F)		
	Established during 1944	Discontinued in 1944	At year end		Through-out 1944	Part of 1944	At year end
Kern County:							
Antelope Valley, part	0	0	3	b 8	0	0	0
Los Angeles County:							
Antelope Valley, part	12	0	c36	b 83	0	0	0
San Gabriel River Basin	0	0	1	365	1R	0	1R
Coastal plain	10	1	21	917	0	6R	5R

a Includes wells established prior to 1944 but for which water-level records are renewed or are given for the first time in this report.

b In 1944 only; antecedent water-level records also given in this report.

c Four additional wells in which no measurements were made in 1944.

Distribution of observation wells in California in 1944--Continued

County	Number of observation wells			Number of records of water levels in this report	Number of wells with water-stage recorders (R) or float gages (F)		
	Established during 1944 a	Discontinued in 1944	At year end		Through-out 1944	Part of 1944	At year end
Orange County:							
Coastal plain	0	1	23	615	0	3R	0
Riverside County:							
San Jacinto Valley	7	0	8	b 28	0	0	0
San Bernardino County:							
Mojave River Basin:	3	1	c 71	b 113	0	0	0
Santa Ana River Basin	9	0	10	b 95	0	0	0
San Diego County:							
San Luis Rey River Basin	0	1	17	105	0	0	0
San Dieguito River Basin	0	1	4	26	0	0	0
San Diego River Basin	0	0	21	122	0	0	0
Sweetwater River Basin	0	0	2	12	0	0	0
Otay River Basin	0	0	2	10	0	0	0
Tia Juana River Basin	0	0	5	30	0	0	0
San Joaquin County:							
Mokelumne River Basin	0	0	24	276	0	0	0
Santa Barbara County:							
Carpinteria Basin	0	5	17	209	0	0	0
Goleta Basin	1	4	33	508	1R	1R, 1F	2R, 1F
Middle Santa Ynez Valley	0	2	18	216	1R	0	1R
Lower Santa Ynez Valley	5	4	68	2,213	2R, 3F	4R	3R, 3F
San Antonio Valley	4	0	4	44	0	0	0
Santa Maria Valley	9	1	38	459	2F	0	2F
Cuyama Valley	0	0	7	60	0	0	0
The State	60	21	433	6,514	5R, 5F	14R, 1F	12R, 6F

a Includes wells established prior to 1944 but for which water-level records are renewed or are given for the first time in this report.

b In 1944 only; antecedent water-level records also given in this report.

c Eight additional wells in which no measurements were made in 1944.

In addition to this program in which the Geological Survey participated, systematic measurements of water level were made by other agencies in widely scattered parts of California. Measurements were continued in Ventura County basins by the Ventura County Water Survey. The San Bernardino Valley Water Conservation District continued measurements in more than 300 wells in the San Bernardino Valley and summarized the fluctuations of ground-water level in an annual statement issued in mimeographed form. In the Yuma-Bard area, between the Colorado River and the All-American

Canal, monthly measurements were made in about 150 observation wells in continuation of observations begun in 1937 through cooperation of the Division of Irrigation in the Soil Conservation Service and the Bureau of Plant Industry, Soils, and Agricultural Engineering, both of the United States Department of Agriculture, with the Bureau of Reclamation and the Division of Irrigation in the Office of Indian Affairs, both of the United States Department of the Interior, and with the Imperial Irrigation District. The Division of Water Resources of the Department of Public Works, State of California, continued to assemble records, collected by various agencies, of water levels in wells in the south-coastal basins and in the Antelope Valley. These assembled records for 1942 have been published in the Division's Bulletin 39-K, which continues the series beginning with Bulletin 39, published in 1932.

In the central and northern parts of California a number of substantial water-level programs were maintained by irrigation districts and local water conservation agencies, partly through collaboration with the Division of Water Resources in the Department of Public Works, State of California. The facilities available to the Geological Survey have not been adequate to coordinate these programs for inclusion in this report.

RAINFALL AND SNOWFALL

The following general summary of precipitation in California for the calendar year 1944 is quoted from the annual report of climatologic data issued by the Weather Bureau.^{1/}

"Precipitation for the year was somewhat below the 48-year average (period beginning with 1897) for the State as a whole. Monthly means were greater than average for all basins in November, and were less than average in all basins in January, March, September, and December. The greatest monthly totals were about equally distributed between February and November. Thunderstorms were numerous during April, June, July, September, and October."

Because ground water is derived essentially from rain and snow, the volume in storage, as indicated by the water levels in wells, generally fluctuates in response to fluctuations in precipitation. Where there is a marked seasonal range in precipitation, such as prevails throughout California and the remainder of the Pacific Coast region, ground-water storage generally is greatest and natural ground-water levels are highest

^{1/} U. S. Department of Commerce, Weather Bureau, Climatological data, vol. 48, No. 13, 1944.

during or somewhat after the height of the wet season, but during the ensuing dry season the unconfined ground-water storage is depleted by natural discharge and water levels commonly decline in wells. This depletion goes on until soil-moisture deficiencies have been replenished by the first rains of the next wet season. Thus, for the climatic conditions of California the ground-water level commonly is related less closely to precipitation within the calendar year than to precipitation within a "water year" which spans one wet season and the following dry season--that is, which ends in mid-autumn. For this treatment of climatic conditions and for the following summary treatment of runoff the water year is taken as ending September 30, the most practicable average data for near-maximum depletion of unconfined ground-water storage and near-minimum runoff.

The first of the two following tables shows the average seasonal distribution of precipitation in California for the 48-year period 1897-1944. The second table shows the relative wetness of the water year ending September 30, 1944, at 15 representative stations in the State, both in inches and in percentage of the average for the 50-year period ending September 30, 1940. This second table brings out that the precipitation during the water year 1943-44, in percentage of the average for the 50-year period ending with 1939-40, ranged considerably from one part of the State to another, and that over the areas for which water levels are given in this report it ranged from about two-thirds of average in the Mokelumne River area on the north to nearly 150 percent of average in San Diego County on the south.

State-wide average monthly and yearly precipitation in
California, in inches, based on the 48-year period
1897-1944

(From U. S. Weather Bureau, Climatological data, vol. 48, No. 13, 1944)

October	1.23	April	1.74
November	2.33	May	.95
December	3.90	June	.32
January	4.87	July	.07
February	4.59	August	.10
March	3.68	September	.44
	20.60		3.62
The year			24.22

Precipitation and relative wetness for the year ending Sept. 30, 1944,
at 15 representative climatologic stations in California

Province	Station and county	Precipitation, 1943-44	
		Inches	Percentage of 50-year average ^a
Northern Coast Ranges Coast Ranges of central and southern California	Eureka, Humboldt	28.07	72
	San Francisco, San Francisco	17.87	89
	San Luis Obispo, San Luis Obispo	22.47	108
	Santa Barbara, Santa Barbara	17.95	100
	Los Angeles, Los Angeles	19.23	133
	San Bernardino, San Bernardino	21.91	135
	San Diego, San Diego	14.43	148
Great Valley (California Trough)	Cuyamaca, San Diego	40.39	105
	Red Bluff, Tehama	15.32	66
	Stockton, San Joaquin	13.45	96
Sierra Nevada	Fresno, Fresno	6.94	73
	Nevada City, Nevada	42.98	88
Great Basin (Southwestern Bolson province)	West Point, Calaveras	30.26	76
	Indio, Riverside	5.14	157
	Needles, San Bernardino	2.59	57

^a Average for years ending Sept. 30, 1891 to 1940.

RUNOFF

The runoff in California streams during the water year ending September 30, 1944, ranged from less than the average to more than three times the average. Representative of the runoff in the northern and central parts of the State are the year's total for Trinity River at Lewiston, in the north coastal drainage, which was 65 percent of normal; for the combined flow of Sacramento and San Joaquin Rivers and tributaries, 56 percent of normal; and that for Kings River at Piedra, in the southern Sierra drainage, 74 percent of normal.

In southern California, the greatest runoff in relation to the average occurred in the drainage areas of the upper Santa Clara River and adjacent streams. Here it ranged from 200 to nearly 350 percent of the average. However, in all directions from this area the relative amount of runoff in the water year 1943-44 decreased progressively, so that in San Diego County, to the south, it was between 50 and 100 percent of the average; in the San Jacinto River basin, to the east, 37 percent; and in the Huasna River basin, to the northwest, 39 percent.

SUMMARIES OF PROGRAMS, HYDROLOGIC CONDITIONS, AND WATER-LEVEL FLUCTUATIONS

Coastal plain in Los Angeles and Orange Counties

Program of work

In 1944 the Geological Survey, in cooperation with the Orange County Flood Control District, the Orange County Water District, the Los Angeles County Flood Control District, and the Board of Water Commissioners of the city of Long Beach, continued its intensive investigation of the ground-water bodies that underlie the so-called Long Beach-Santa Ana area. One factual report giving water-level measurements by the Geological Survey in the period 1940-42 was published in 1944.^{2/} The comprehensive final report on the project, which will be released in four separate chapters, was far advanced at the end of the year.

In this area in 1944, the Geological Survey measured the depth to water periodically in nine wells and maintained water-level recorders on four of those wells during the early part of the year. Records for these wells are given in this report. In addition, records are extended in this report for 28 "continuing" observation wells, in 25 of which the water level is measured currently by local agencies at monthly or more frequent intervals, and in 3 of which the water level is measured currently only by the Geological Survey.

In 1944, the Geological Survey also continued its investigation in the so-called Torrance-Santa Monica area in cooperation with the Los Angeles County Flood Control District and certain municipalities. A progress report on this investigation has been released.^{3/}

In connection with the field canvass of water wells in the Torrance-Santa Monica area, single measurements of depth to water have been made in several scores of wells. In 48 of these wells the water levels were measured again in November 1944, but records for most of these are not included in this report because only two measurements were available at the end of the year. Records are included for 9 of the 48 wells; of the

^{2/} Meinzer, O. E., Wenzel, L. K., and others, Water levels and artesian pressure in observation wells in the United States in 1942, Part 6, Southwestern States and Territory of Hawaii: U. S. Geol. Survey Water-Supply Paper 949, pp. 77-169, 1944.

^{3/} Poland, J. F., Garrett, A. A., Sinnott, Allen, Progress report on the cooperative ground-water investigation in the Torrance-Santa Monica area, Calif.: U. S. Geol. Survey report 55 pp., maps, graphs, September 1944.

9 wells, 5 had water-stage recorders in operation at the end of the year, and in the remaining 4 wells the water levels were being measured weekly. Three of these--Nos. 5/14-36M3, 4/14-8E1, and 4/14-13F1--have been designated as "continuing" observation wells, and for that reason their antecedent records of measurements by other agencies are included with the measurements by the Geological Survey.

Hydrologic conditions and water-level fluctuations

According to records published by the United States Weather Bureau, rainfall in the Long Beach-Santa Ana area was about 35 percent above the long-term average in the calendar year 1944, and about 30 percent greater than average in the water year ending September 30, 1944. During January and much of February, rainfall was light; in the main coastal plain withdrawals from wells for irrigation began early and caused a marked unseasonal decline of water levels. In late February, heavy rainfall resulted in a general cessation of withdrawal for irrigation. From then until July, continued cool and cloudy weather kept irrigation requirements at a minimum. Late in November a short period of unusually heavy rainfall virtually eliminated the need for further irrigation. Thus, as of December 1944, the water levels in the main coastal-plain basin were substantially higher than at the end of the preceding year.

The following table summarizes the range in water level for the 31 "continuing" observation wells in the Long Beach-Santa Ana and Torrance-Santa Monica areas. In this table, water levels at the end of the year are compared to the levels at the close of 1943 and of the historic low-water year of 1936. To indicate marked differences in their current and historic ranges of water level, the data for wells in the main coastal basin are tabulated separately from those in the so-called West Basin, which lies southwest of the Newport-Inglewood uplift. Within the main coastal basin, 17 continuing index wells in Orange County disclose an average rise in water level of 2.1 feet in the year 1944, whereas 7 continuing index wells in Los Angeles County show no change in average level. However, in the West Basin in Los Angeles County, five continuing wells show an average drop of 7.8 feet during the year. All five of these wells are south of Gardena and in about the southern third of the West Basin, in an area of heavy and increasing withdrawal. In this southern

third of the West Basin, the table suggests an average water level of somewhat more than 35 feet below sea level at the end of December.

Summary of water-level fluctuations in 31 selected observation wells on the coastal plain in Los Angeles and Orange Counties, Calif., 1936-44

Well	Water level at end of December, in Net rise (+) or decline (-) feet above (+) or below (-) sea in water level, in feet level a/				
	1936	1943	1944	1936-44	1943-44
Wells in the main coastal basin ^{b/} --Orange County					
3/11-36Q2	+18.2	+36.0	+39.2	+21.0	+3.2
4/9-7B1	+11.2	+52.5	+55.5	+44.3	+3.0
4/10-22L2	+10.2	+30.8	+33.9	+23.7	+3.1
4/11-19K1	+10.9	+21.4	+22.3	+11.4	+9
5/10-9D1	+10.0	+24.3	+28.5	+18.5	+4.2
5/10-28B1	+7.8	+18.0	+20	+12	+2
5/11-2E1	+4.4	+22.1	+23.7	+19.3	+1.6
5/11-16D2	+2.0	+12.0	+12.9	+10.9	+9
5/11-25P1	+3.5	+12.4	+13.4	+9.9	+1.0
5/11-28A1	-.6	+15.5	+18.3	+18.9	+2.8
5/11-29C4	.....	+7.9	+9.0	.....	+1.1
5/12-12P1	+9	+6.6	c +9.3	+8.4	+2.7
6/10-1E1	+2	+13.0	+17.1	+16.9	+4.1
6/10-1L2	+17.1	+21.5	+22.9	+5.8	+1.4
6/10-5C1	+3.5	+12.7	+13.9	+10.4	+1.2
6/11-13G2	+8	+1	.0	-.8	-.1
I-9F1	-1.8	+20.7	+23.4	+25.2	+2.7
Averages:	+6.1	+19.3	+21.4	+16.0	+2.1

Wells in the main coastal basin ^{b/}--Los Angeles County

2/12-13A1	+133.5	+160.2	+161.6	+28.1	+1.4
3/12-8L3	+62.6	+72.1	+73.1	+10.5	+1.0
3/13-35B2	+28.0	+36.8	+37.2	+9.2	+4
4/11-5D1	+14.5	+21.9	+18.3	+3.8	-3.6
4/12-8P1	-14.2	-23.0	-23.4	-9.2	-.4
4/12-27K2	+3.5	+13.1	+13.9	+10.4	+8
5/12-2B1	+3.0	+10.4	+10.9+	+7.9+	+5+
Averages:	+33.0	+41.6	+41.7	+8.7	0.0

Wells in the West (Coastal) Basin, tapping the Silverado water-bearing zone of Pleistocene age or its equivalent westward extension

3/13-32F2	-24.3	-33.2	-37.7	-13.4	-4.5
3/14-36M3 ^{e/}	-13.5	-16.2	-16.5	-3.0	-.3
4/13-14L1 ^{f/}	+3	+5.3	+3.5	+5.0	-1.8
4/13-23G2	-34.3	-45.0	-61.5	-27.2	-16.5
4/13-33D1	-30.5	-37.2	-49.2	-18.7	-12.0
4/14-8E1	-8.3	-9	-9.0	-.7	0
4/14-13F1	-22.3	-26.1	-31.9	-9.6	-5.8
Averages:	-23.9	-30.1	-37.9	-13.9	-7.8

a Chiefly interpolated.

b Designated Central (Coastal) Basin by California Division of Water Resources.

c Water level for December 2.

d Flowing: top of casing is 10.9 feet above sea-level datum of 1941.

e Taps shallow deposits of Pleistocene age; excluded from averages.

f Taps Gaspar water-bearing zone of Recent age; excluded from averages.

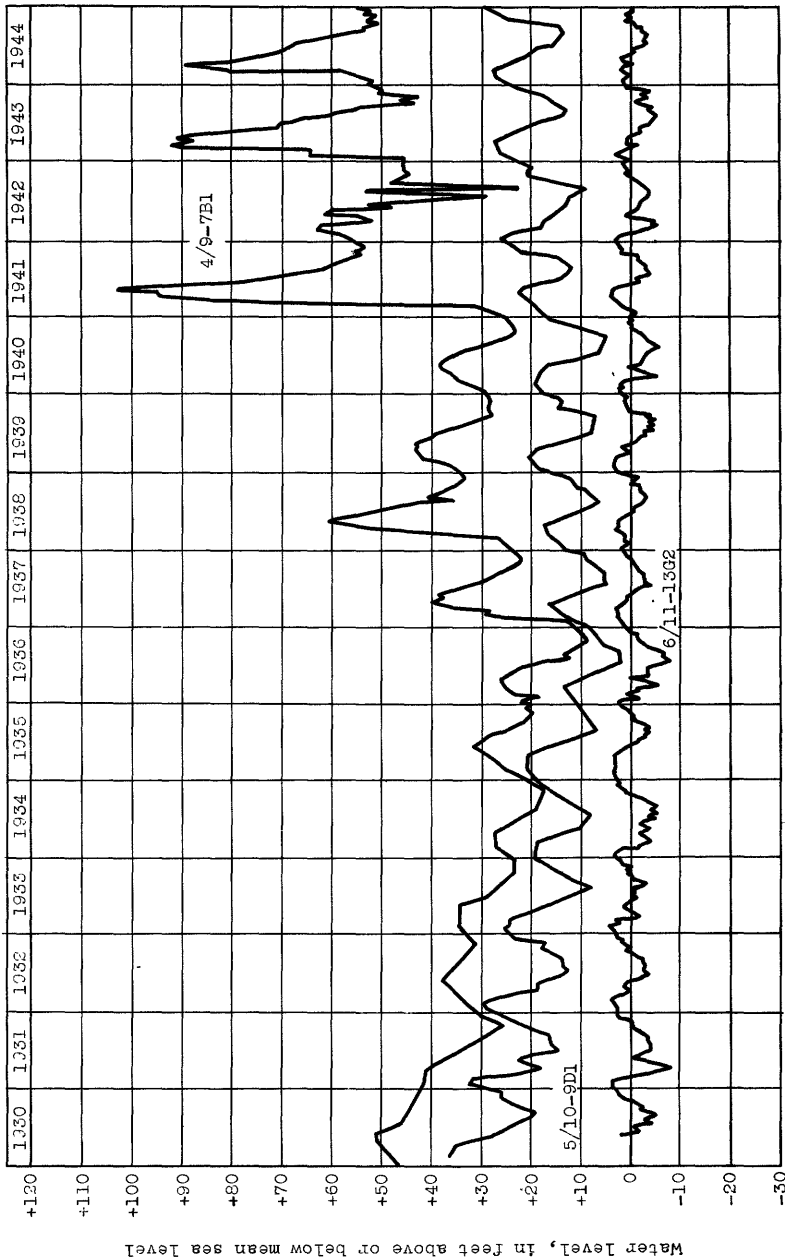


Figure 8.--Fluctuations of water level in selected wells near the Santa Ana River, Orange County, Calif. (Records furnished by Orange County Flood Control District.)

Figure 8 gives hydrographs for three wells which tap the Talbert water-bearing zone in Orange County, or materials in hydraulic continuity with that zone. The geographic position of these wells is shown on the sketch map of the coastal plain. (See Water-Supply Paper 949.) Wells 4/9-7B1 and 5/10-9D1 are described in Water-Supply Paper 941, pages 120, 126; well 6/11-13G2 is described in Water-Supply Paper 949, page 163. Of these wells, 4/9-7B1 is located within the water-table area which constitutes the "forebay area" for the Talbert zone, and within about 1,600 feet of the Santa Ana River. The water level in this well reacts quickly to flow in and recharge from the river. Well 5/10-9D1 is about 9 miles inland from the coast, within the confined segment of the Talbert zone. In general, its periods of high water and low water reflect those in well 4/9-7B1. Since 1940, the periods of high water level in the vicinity of well 4/9-7B1 apparently caused only a slight but definite upward trend in water level at well 5/10-9D1. The third well, 6/11-13G2, is about 0.7 mile from the coast; the hydrograph shows that during the period of record, its yearly average water level has not departed materially from sea level.

Mojave Desert region

Antelope Valley, Kern and Los Angeles Counties

Observations of water level in Antelope Valley by the Geological Survey and by the Los Angeles County Flood Control District were continued in 1944 in 39 wells; in most of these, levels were measured in both the spring and fall of the year. The measurements indicate a continuation of the downward trend in levels of the past several years. For the entire basin the average decline in level from the fall of 1943 to the fall of 1944 was about 1.2 feet. An exception to this trend was shown by wells 7/13-6A1 and 7/13-17D1, northwest and west of Lancaster, in which the December 1944 water levels were respectively 2.5 feet and 4.5 feet higher than those of December 1943.

Mojave River Basin, San Bernardino County

Observations of water level in the Mojave River Basin were continued in 1944 in 71 wells, most of which were measured in both spring and autumn. The discharge of the Mojave River near Victorville during the water year ending September 30, 1944, was 108 percent of the 19-year average, and there was continuous flow at Barstow from February 18 to May 21. For the basin as a whole, ground-water levels were generally higher at the end of 1944 than at the end of 1943.

Measurements of water level in wells between the Forks and the area of effluent ground water near Verde Crossing, indicated an average net rise of 3.5 feet. The greatest observed net rise was 5.9 feet in well 4/3W-19R1, which is near the middle of the Mojave River channel at Hesperia Crossing.

Wells in the valley between Victorville and Hodge showed practically no net change in water level from the preceding year. Downstream from Hodge Crossing and north to the Barstow-Mojave highway, net rises ranged from 0.2 to 0.5 foot, but farther north a slight decline in water levels was indicated. In the Lenwood-Barstow area, net rises averaged about 0.5 foot.

In the area between Barstow and Daggett, the water levels showed an average net rise during the year of 0.4 foot.

In the sub-basin between Daggett and the Kouns-Newberry sand-dune belt, the measured water levels indicated rises generally of about 1.5 feet. East of the sand-dune belt and in the Newberry-Troy Lake area, the measurements showed only slight change and no definite trend in water level during the year.

Mokelumne River Basin, San Joaquin County

During 1944 the East Bay Municipal Utility District continued monthly measurements of water level in typical observation wells of the Mokelumne area, in the central part of the Great Valley. From these, the records of 24 selected wells have been used as an index to the changes in ground-water storage. In these wells 280 measurements were made during the year. No water-stage recorders or float gages were operated.

The following table correlates the average yearly water-level changes in the 24 selected wells with the fluctuations in yearly rainfall, beginning with 1940. In this table the accumulated changes begin with 1934 as shown in earlier water-level reports. As the table shows, in 1944 the water level in the Mokelumne area declined for the second successive year, and this decline is known to have been exceeded only by that of 1939. Rainfall during the year was about average in amount but was dispersed in numerous light storms.

Average yearly rise or decline of water level in 24 observation wells, and yearly rainfall in the Mokelumne area, 1940-1944

Year	Water level		Rainfall ^a	
	Yearly rise (+) or decline (-) (feet)	Accumulated rise (+) or decline (-) (feet)	Excess (+) or deficiency (-) (inches)	Accumulated excess (+) or deficiency (-) (inches)
1940	+1.31	+1.02	+15.18	+17.78
1941	+1.34	+2.36	+5.68	+23.46
1942	+ .72	+3.08	+8.52	+31.98
1943	-.19	+2.89	-2.17	+29.81
1944	-2.32	+ .57	+1.22	+31.03

^a Average of rainfall at Electra, West Point, and Twin Lakes from 1906-40 was 37.98 inches.

A second table shows the water-level changes in 1944 during the periods of increasing and of diminishing withdrawal for irrigation, respectively. This table shows that recharge early in 1944 was insufficient to offset the heavy withdrawals of water for irrigation. Rainfall in the autumn of 1943 had been less than average and was again less than average in January and March 1944. Although the temperature was not high, the growing season of 1944 was unusually dry and more water than usual was withdrawn for irrigation. However, rainfall in the autumn of 1944 was greater than average so that by December the water level had recovered somewhat from the very low stage of midsummer.

Seasonal changes in water level, in feet, in 24 observation wells in the Mokelumne area, 1944

Period	Greatest rise	Greatest recession	Average change in water level
Jan. 1 to May 31 (increasing withdrawal for irrigation)	+2.19	-10.73	-2.91
June 1 to Dec. 31 (diminishing withdrawal)	+8.04	-4.41	+ .59
The year	.....	-4.56	-2.32

San Gabriel River Basin, Los Angeles County

A continuous water-stage recorder was in operation all year on well 1S/10-18 at Baldwin Park, in the upper San Gabriel Valley. The water level in this well declined from a mean daily stage of 307.27 feet above sea level on January 1 to a stage of 307.11 feet, the lowest of the year, on January 27. It then rose to a stage of 325.94 feet, the highest of the year, on July 14. On December 31 its mean daily stage of 311.57 feet was 14.37 feet below the highest stage of the year, 4.46 feet above the lowest stage, 4.26 feet above the mean daily stage of December 31, 1943, and 17.5 feet below the record high stage of 329.1 feet on May 19, 1916.

Basins in San Diego County

The measurements of water level in 50 wells in San Diego County in 1944 indicate a small net rise during the year in Sweetwater and Otay River basins, and a small net decline in San Luis Rey, San Dieguito, San Diego, and Tia Juana River Basins. As shown in the following table, the average net rise in the two wells in the Sweetwater River Basin was 0.26 foot, and in the two wells in the Otay River Basin, 0.48 foot. In the wells of the other four river basins, the average net decline ranged from 0.15 foot in the San Diego River Basin to 0.79 foot in the San Luis Rey River Basin. The greatest net rise in any one of the measured wells was 1.19 feet in well 16/5W-23, in Mission Valley of the San Diego River Basin, and the greatest net decline was 4.07 feet in well 11/5W-13a, in Mission Basin of the San Luis Rey River.

Net changes in water level in observation wells in San Diego County, 1944

Basin	Number of wells	Number of measurements	Greatest net rise (feet)	Greatest net decline (feet)	Average net change (feet)
San Luis Rey River, Monserate Narrows to Oceanside	17	105	0.30	4.07	-0.79
San Dieguito River San Pasqual Valley	a 4	23	.18	2.28	-.61
San Diego River, El Monte Park to coast	b20	117	1.19	2.75	-.15
Sweetwater River at Sunnyside	2	12	.26	. .	+.26
a Well 12/1W-35 not included because of incomplete record.					
b Well 15/1W-28 not included because of incomplete record.					

Net changes in water level in observation wells in
San Diego County, 1944--Continued

Basin	Number of wells	Number of measure- ments	Greatest net rise (feet)	Greatest net decline (feet)	Average net change (feet)
Otay River at Otay	2	10	0.60	....	+0.48
Tia Juana River near San Ysidro	5	30	....	1.07	-.51

Santa Ana River Basin, Riverside and San Bernardino Counties

San Bernardino area

The water level in well 1S/3-17C1, the Williams well, near Redlands, rose from 15.28 feet below land-surface datum on January 1 to 6.28 feet, the highest observed stage of the year, on March 25. It then declined until October 7, when it stood at 20.86 feet. On December 30 its stage was 13.53 feet below land-surface datum, representing a net rise of 1.75 feet for the year.

Measurements of water level made during 1944 in eight wells distributed over the San Bernardino area indicate an average net rise of 2.60 feet from the observations of November 24, 1943, to those of November 18, 1944. The greatest net rise observed was 4.31 feet in well 1S/4-4K1, in San Bernardino, and the least was 1.29 feet in well 1N/4-36F1, east of San Bernardino near Del Rosa Avenue.

San Jacinto Valley

Measurements of water level made during 1944 in seven wells distributed over the San Jacinto Valley indicate net changes from December 16, 1943, to November 4, 1944, ranging from a net rise of 2.13 feet in well 4/3W-32E1, in Perris, to a net decline of 6.31 feet in well 4/2W-7J1, in Lakeview. The average net change for the seven wells was a decline of 1.27 feet.

Basins in Santa Barbara County

Program of work

Periodic water-level measurements, made in connection with the inventory of ground-water resources of Santa Barbara County, which began in 1941, were continued in 1944 by the Geological Survey in cooperation with

the county. During the year, measurements were made in 198 observation wells. Measurements published in preceding reports were made in 177 wells during 1941 (see Water-Supply Paper 941), in 195 wells during 1942 (see Water-Supply Paper 949), and 221 wells during 1943 (see Water-Supply Paper 991). During 1944 measurements were discontinued in 13 wells, and begun in 19 additional wells. Of the 198 wells measured in 1944, 15 were equipped at various times with water-stage recorders or "high-low" float gages.

Measurements were made by the Geological Survey in the six main ground-water areas of the county whose general hydrologic features were briefly described in Water-Supply Paper 949. These ground-water areas are the Carpinteria and Goleta Basins, the Middle and Lower Santa Ynez Valleys, the Santa Maria Valley, and the Cuyama Valley. In 1944, four observation wells were established in the San Antonio Valley. Measurements in 1944 were also made by three local agencies in the Santa Maria Valley. These agencies are the Santa Maria Valley Water Conservation District, the city of Santa Maria, and the San Joaquin Power Division of the Pacific Gas & Electric Co. These measurements by local agencies have been made available to the Geological Survey and, for wells which are observed by the Geological Survey, are included in this report.

General hydrologic conditions

Rainfall in 1944 was generally less than in 1943. For the water year ending September 30, rainfall at Santa Maria was 14.56 inches as compared with 17.22 in 1943, and at Santa Barbara was 17.92 inches as compared with 24.34 inches in 1943. However, for the calendar-year 1944 rainfall at those stations was close to their averages for the 31-year period from 1910 through 1940. At 12 supplemental rainfall stations maintained by the Geological Survey (see Water-Supply Paper 949, p. 182), the rainfall for the calendar year was also less than that of 1943--on the average, 19.80 inches in 1944 as compared with 24.18 inches in 1943. However, in 1944 the winter rains began earlier than in 1943. Accordingly, pumpage for irrigation ceased in November and ground-water levels began to recover earlier than in 1943.

Figure 9 includes hydrographs of water-level fluctuations in nine representative wells in six of the seven areas of the county for the 4 years of record to date, 1941-44, together with monthly rainfall at Santa Barbara. The graphs show the usual seasonal decline caused by heavy withdrawals in summer and the seasonal rise that ensues in the autumn after withdrawals have largely stopped. The water levels continued to rise during the winter rainy season when there was little or no pumping, and reached their highest stages in the spring. In most of the nine wells the rise of water level each spring has halted abruptly as withdrawals for irrigation began, and the water levels have declined thereafter. In observation wells some distance from pumped wells, such as well 6/32-12J2, in the Middle Santa Ynez Valley, the hydrographs show that the decline caused by withdrawal was slow, but in observation wells close to pumped wells, such as well 4/25-27Q2, in the Carpinteria Basin, the decline was abrupt. The hydrographs show also that during the 4 years beginning with 1941, the "high" water levels of the successive years have risen several feet in the Santa Maria and Cuyama Valleys but have fallen several feet in the Santa Ynez Valley and in the Carpinteria and Goleta Basins.

With respect to the water levels in 1944, the hydrographs and the following tabulated records show that in most areas the year-end water levels of 1944 were about the same as those of 1943. However, the highest water levels of 1944 generally were lower than those of 1943, presumably because withdrawals for irrigation began earlier in 1944 than in 1943. Thus, in 1944 the water levels had less time to recover. The fluctuations and net changes of water levels during 1944 in the several ground-water areas are discussed below.

Carpinteria Basin

Water levels rose rapidly during the winter, and reached their highest stages in April or May in most of the area. The rise was greatest in the central and eastern parts of the basin, where withdrawals for irrigation are more concentrated. In the eastern part of the area water levels in December 1944 were considerably higher than those of December 1943, probably because withdrawals for irrigation ceased earlier in 1944. The average net rise for the year was about 7 feet in the eastern part of the area and about 1 foot in the western part.

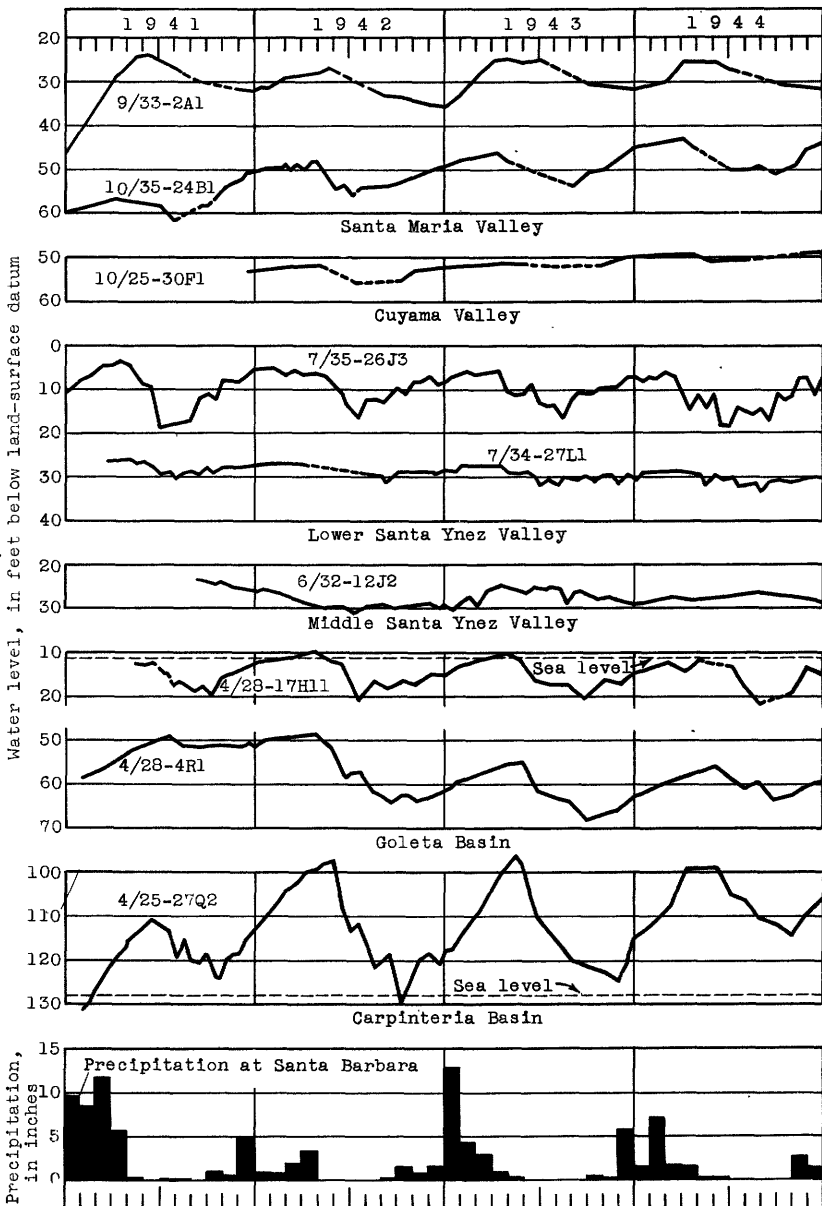


Figure 9.--Graphs showing water-level fluctuations in nine wells in Santa Barbara County, California, and monthly rainfall at Santa Barbara, 1941-44.

Goleta Basin

Water levels rose slowly during the winter and reached their highest stages in April or May in the northern part of the area, but in June in the southern part. The rise was greatest in the northern part, but the highest stages of 1944 were about 1 foot below those of 1943. In the southern and western parts of the area some of the water levels remained below sea level throughout the year. Year-end levels of 1944 were slightly higher than those of 1943. The average net rise for the year was about 2 feet in the northern part of the area and about 1 foot in the southern part.

Middle Santa Ynez Valley

Along the Santa Ynez River and beneath the upland plain east of Ballard water levels rose only slightly during the winter and reached their highest stages in March or April. However, these "high" stages were slightly lower than those of 1943. Levels in December 1944 were about the same as those in December 1943.

Lower Santa Ynez Valley

Beneath the Lompoc Plain the water levels in December 1944 were about 1 foot lower than those of December 1943. The "high" water levels of 1944 occurred in March, but, in general, were 1 foot lower than those of 1943.

San Antonio Valley

Four observation wells were established in the San Antonio Valley in December 1943. Two of the four, wells 8/32-30K2 and 8/33-20R1, tap water in the fine-grained younger alluvium that fills the valley. The other two observation wells tap confined water in underlying older alluvium. The water in some beds at the base of the younger alluvium also is confined, as in those tapped by well 8/32-30K2. Fluctuations of water level during 1944 were small except in pumped wells. Water levels in December 1944 were about the same as those of December 1943.

Santa Maria Valley

Water levels rose rapidly during the winter and reached their highest stages in March in the western part of the area, but in April or May in

the eastern part. In most wells the highest level in the spring of 1944 was about 1 foot lower than that of 1943. Year-end water levels of 1944 were about half a foot lower than in 1943.

Cuyama Valley

Water levels rose slowly during the winter and in most wells reached their highest stages during March. In the irrigated area the highest levels were about half a foot higher in the spring of 1944 than in the preceding year. Water levels in December 1944 were about 1 foot higher in the irrigated area than in December 1943. As stated in the discussion of figure 9, water levels during the past 4 years have risen progressively in spite of the construction and use of irrigation wells.

SYMBOLS ASSIGNED TO OBSERVATION WELLS

In the following descriptions and records of water level, observation wells are identified by symbols or "numbers" that indicate their respective locations according to the rectangular system for subdivision of public land. In Water-Supply Paper 991 these symbols were assigned for the first time to all Geological Survey observation wells in the State, according to the system described in that water-supply paper and there accompanied by a cross-reference table of antecedent numbers and location symbols.

The descriptions and records are given by counties in alphabetical sequence, and, for each county, in numerical order of the location symbols. Thus, certain groups of the data each pertain to a distinct ground-water area as indicated by subheadings in the record. However, other groups of data each span two or more ground-water areas--under this circumstance, the area is indicated in the text statements that introduce the several records of individual wells.

WELL DESCRIPTIONS AND WATER-LEVEL MEASUREMENTS

Kern County

9/12-21D1 (*991, p. 100). Southern Pacific Lands Agency. In village of Rosamond. Measurements on May 3 and June 29 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 3, 39.2; June 29, 40.7; Dec. 6, 38.9.

9/13-20H1 (*991, p. 101). Harry White.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Apr. 30, 1943	a 62.4	Aug. 26, 1943	a 63.8	Jan. 22, 1944	a 62.8
May 28	a 63.0	Sept. 24	a 64.0	May 3	a 63.4
June 25	a 63.2	Dec. 15	a 63.0	Dec. 6	64.8
July 23	a 63.6	Jan. 8, 1944	a 64.4		

a Measurement by Los Angeles County Flood Control District.

9/13-20H2 (*991, p. 101). Harry White. Water level, in feet below land-surface datum, 1944: Dec. 6, 65.35.

Los Angeles County

Antelope Valley

5/9-20J1. L. M. Nixon. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 5 N., R. 9 W., 300 feet south of Avenue V8 and 400 feet west of 167th Street E., near Dano Store, at two metal tanks. Used domestic well, diameter 10 inches, depth 280 feet. Altitude of land surface about 3,166 feet. Measuring point, top of casing, at land-surface datum. Measurements made by Los Angeles County Flood Control District. Water level, in feet below land-surface datum: Dec. 3, 1942, 242.9; May 15, 1944, pumping.

5/10-23F1. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 5 N., R. 10 W., 65 feet north of Pear Blossom Highway (Avenue V8) and 800 feet west of 152d Street E. Unused well, diameter of casing 10 inches. Altitude of land surface about 3,040 feet. Measuring point, top of casing, 1.0 foot above land-surface datum. Measurements made by the Los Angeles County Flood Control District.

Water level, in feet below land-surface datum, 1940-44

Mar. 29, 1940	131.3	Mar. 28, 1942	130.1	Jan. 30, 1943	133.5
Apr. 21	129.5	Apr. 24,	129.3	Feb. 19	132.3
June 29	129.7	May 29	129.1	Mar. 26	131.0
July 27	129.8	June 27	129.6	May 8	131.8
Aug. 24	130.0	July 31	130.4	June 26	131.9
Nov. 25	130.8	Aug. 21	131.6	July 22	132.1
Apr. 9, 1941	126.5	Sept. 26	135.9	Aug. 20	132.3
May 30	128.2	Oct. 23	133.6	Dec. 2	133.2
July 18	131.4	Nov. 17	133.1	Jan. 23, 1944	132.8
Aug. 29	132.4	Nov. 30	132.1	May '15	138.6
Feb. 13, 1942	131.8	Dec. 26	133.8		

5/11-14F1 (*991, p. 101). Littleton. Measurements made by the Los Angeles County Flood Control District on Jan. 23, May 9, and July 28. Water levels, in feet below land-surface datum, 1944: Jan. 23, dry; May 9, 18.3; July 28, 21.9; Dec. 5, dry.

6/8-10N1 (*991, p. 102). W. G. Baguet. Measurement on May 15 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 15, 27.2; Dec. 22, 25.2.

6/8-18D1 (*991, p. 102). Huff. Measurements on Jan. 22 and May 15 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: Jan. 22, pumping; May 15, pumping; Dec. 22, 158.1.

6/8-32P1. M. E. Scofield. Formerly owned by Hibbard. SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 32, T. 6 N., R. 8 W., 200 feet north of Avenue S and 150 feet east of dirt road, at north side of house. Used domestic well. Altitude of land surface about 2,955 feet. Measuring point, top of concrete block, 0.5 foot above land-surface datum.

Water level, in feet below land-surface datum, 1940-44

July 27, 1940	a 192.5	Aug. 29, 1941	a 197.7	Dec. 15, 1943	a 196.2
Nov. 25	a 192.7	Feb. 13, 1942	a 190.7	May 15, 1944	(ab)
Jan. 31, 1941	a 192.3	Dec. 3	a 197.7	Dec. 22	196.4

a Measurement by Los Angeles County Flood Control District.

b Pumping; no measurement.

6/9-4H1 (*991, p. 102). Wilsona School. Measurement made by the Los Angeles County Flood Control District. Water level, in feet below land-surface datum, 1944: May 15, 108.1.

6/9-29G1 (*991, p. 103). Rankin. Measurement on May 15 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 15, pumping; Dec. 22, 27.7.

6/11-5A1 (*991, p. 103). Lyons Bros. Measurement on May 10 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 10, 152.3; Dec. 7, 154.1.

6/11-12Q1. E. J. Ball. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 6 N., R. 11 W., 800 feet east of 75th Street E extended, and 260 feet north of Avenue O extended. Unused well, diameter of casing 18 inches. Altitude of land surface about 2,552 feet. Measuring point, top of casing flush with concrete, at land-surface datum. Measurements made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum: Nov. 25, 1941, 176.0; Dec. 4, 1942, 180.3; Dec. 15, 1943, 179.4; May 9, 1944, 201.2 (nearby well pumping).

6/11-28E1 (*991, p. 103). Pierce. Measurement on May 9 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 9, dry; Dec. 5, dry.

6/12-25N1. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 6 N., R. 12 W., 175 feet east of 10th Street E., and 250 feet north of Avenue R. Unused well, diameter 16 inches. Altitude of land-surface about 2,650 feet. Measuring point, top of casing, 1.0 foot above land-surface datum. Measurements made by the Los Angeles County Flood Control District.

Water level, in feet below land-surface datum, 1927-30, 1937-44

Date	Water level	Date	Water level	Date	Water level
Dec. 6, 1927	237.0	Sept. 27, 1941	275.0	Aug. 9, 1943	281.1
July 29, 1928	240.0	Oct. 31	274.8	14	283.4
Dec. 5	239.6	Nov. 24	274.8	29	283.6
June 22, 1929	240.0	Dec. 6	275.0	Sept. 6	283.8
July 17, 1930	242.0	Feb. 13, 1942	274.4	12	284.0
Nov. 29	243.0	Apr. 24	275.5	18	284.0
June 26, 1937	250.4	May 29	276.6	25	284.0
Feb. 26, 1938	263.4	June 28	277.4	Oct. 2	284.1
May 2	253.6	July 31	279.2	9	284.1
Nov. 18, 1939	259.4	Sept. 25	279.9	18	284.0
May 31, 1940	269.6	Oct. 23	278.9	23	284.3
June 29	270.0	Nov. 17	278.5	Nov. 5	284.2
July 27	270.2	Dec. 26	278.1	14	284.1
Aug. 24	270.6	Jan. 30, 1943	277.8	30	283.9
Nov. 29	271.0	Feb. 19	277.5	Dec. 13	284.1
Dec. 28	271.1	Mar. 26	278.4	Jan. 1, 1944	283.9
Jan. 31, 1941	271.4	Apr. 30	279.3	22	283.8
Apr. 9	274.9	May 29	279.8	29	283.9
May 30	272.3	June 26	280.4	Feb. 10	284.0
June 18	273.7	July 22	282.2	May 1	284.0
Aug. 29	274.4				

7/10-5M1 (*991, p. 103). Ella E. Cunningham. Measurement on May 11 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, 107.8; Dec. 7, 78.2.

7/10-5N1 (*991, p. 104). Christ Laras. Water level, in feet below land-surface datum, 1944: Dec. 7, dry.

7/10-5N2 (*991, p. 104). Ella E. Cunningham. Measurements made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, dry; Dec. 7, dry.

7/10-7B1 (*991, p. 104). Boege. Measurement on May 11 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, 67.9; Dec. 7, 70.0.

7/10-31B1 (*991, p. 104). Measurement on May 9 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 9, obstructed at 165 feet; Dec. 7, obstructed at 156 feet.

7/11-1Q1. H. L. Gordon. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 7 N., R. 11 W., 2,660 feet east of 70th Street E., and 600 feet north of Avenue H, in pump house north of ranch buildings. Used irrigation well, depth 1,183 feet; perforated 700 to 1,183 feet. Altitude of land surface about 2,386 feet. Measuring point, top of casing set in 2.8-foot square concrete block, 0.5 foot above land-surface datum. Measurement on Apr. 20, 1943, made by Los Angeles County Flood Control District. Water levels, in feet below land-surface datum: Apr. 20, 1943, 126.5, pumping continuously for 35 days prior to measurement; Dec. 7, 1944, 86.2.

7/11-8P1 (*991, p. 105). Mae Avery. Measurement on May 11 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, 62.6; Dec. 7, 61.6.

7/11-24C1 (*991, p. 105). Stevenson. Measurements on Jan. 22 and May 9 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: Jan. 22, 108.7; May 9, pumping; Dec. 7, 120.9.

7/11-28L1 (*991, p. 106). Measurement on May 8 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, 111.3; Dec. 7, 111.2.

7/12-32J1 (*991, p. 106). Lord. Measurement on May 2 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 2, dry; Dec. 5, dry.

7/12-32R1 (*991, p. 106). Measurement on May 2 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 2, dry at 200 feet; Dec. 5, dry.

7/12-34E1. George Lane. SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 7 N., R. 12 W., 2,620 feet south of Avenue L, 1,000 feet east of 10th Street W., and 20 feet southwest of reservoir. Used irrigation well, equipped with electric turbine pump, diameter 16 inches for 200 feet; 12 inches, 200 to 555 feet, depth 555 feet. Altitude of land-surface about 2,493 feet. Measuring point, hole in pump base, at land-surface datum. Water levels, in feet below land-surface datum: Dec. 3, 1941, 155.8; Dec. 5, 1944, 165.6.

7/12-34H1 (*991, p. 106). Morrison. Measurements, except on Dec. 5, made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: Jan. 22, 174.1; May 1, 174.8; July 27, 175.7; Dec. 5, 177.6.

7/13-6A1 (*991, p. 107). Measurement on May 3 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 3, pumping; Dec. 6, 113.0.

7/13-11M1 (*991, p. 107). John Payne. Measurements, except on Dec. 5, made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: Jan. 22, 12.6; May 2, 11.0; Dec. 5, 11.8.

7/13-17D1 (*991, p. 108). G. Zaro. Measurement on May 4 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 4, pumping; Dec. 6, 99.6.

7/13-34H1 (*991, p. 108). E. P. Wieman. Record on May 1 furnished by the Los Angeles County Flood Control District. New pump installed on May 1; no measurements made in 1944.

7/13-35E1 (*991, p. 108). George Lane. Measurement on May 1 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 1, pumping; Dec. 5, 164.4.

8/9-4N1. U. S. Army Reservation. Formerly owned by C. W. Green. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 8 N., R. 9 W., 500 feet north of Avenue B and 500 feet east of 160th Street E extended, in field near driveway. Unused well, diameter 8 inches, depth 125 feet. Altitude of land-surface about 2,294 feet. Measuring point, top of casing, at land-surface datum. Measurements made by Los Angeles County Flood Control District.

Water level, in feet below land-surface datum, 1941-44

Date	Water level	Date	Water level	Date	Water level
Apr. 24, 1941	10.1	Nov. 25, 1942	10.7	May 11, 1944	10.4
Dec. 6	10.2	Dec. 8, 1943	12.1		

8/10-9M1 (*991, p. 109). J. M. Hamilton. Measurement on May 11 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, 20.2; Dec. 7, 20.8.

8/10-19Q1 (*991, p. 109). Union Trust & Savings Bank. Measurements except on Dec. 7, 1944, made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum; Dec. 15, 1943, 49.4; May 11, 1944, 73.8; Dec. 7, 52.8.

8/11-22N2 (*991, p. 110). Lewis Prothro. Measurements made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum: Nov. 25, 1942; 41.5; Dec. 8, 1943, 46.0; May 11, 1944, nearly well pumping.

8/11-22N3 (*991, p. 110). Lewis Prothro. Measurement on May 11 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 11, pumping; Dec. 7, 46.4.

8/13-8D1 (*991, p. 110). Rogers School. Measurement on May 4 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum, 1944: May 4, 96.5; Dec. 6, 100.2.

8/15-24D1. C. L. Schneider. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 8 N., R. 15 W., 0.7 mile east of 170th Street W., and 300 feet south of Avenue D, southwest of ranch house. Domestic well equipped with windmill, diameter 10 inches, depth 180 feet. Altitude of land surface about 2,666 feet. Measuring point, top of round concrete collar, 1.0 foot above land-surface datum. Measurement in July 1932 made by driller; other measurements, except on Dec. 6, 1944, made by the Los Angeles County Flood Control District.

Water level, in feet below land-surface datum, 1932, 1943-44

July 1932	137	Dec. 1, 1943	158.3	May 2, 1944	155.8
Feb. 18, 1943	156.1	Apr. 25, 1944	(a)	Dec. 6	155.6

a Pumping.

8/15-36M1. Fairmont School. NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 36, T. 8 N., R. 15 W., 300 feet west and 300 feet south of State Highway 138, southwest of school-house. School well, equipped with windmill, depth 266 feet. Altitude of land surface about 2,785 feet. Measuring point, top of 2-inch plank on concrete blocks 1 foot above concrete slab, 1.2 feet below land-surface datum. Measurements, except on Dec. 5 made by the Los Angeles County Flood Control District. Water levels, in feet below land-surface datum: Feb. 18, 1943, 80.4; Dec. 1, 1943, 85.1; Apr. 25, 1944, 81.4; Dec. 5, 1944, 74.8.

8/16-5N1. Carpy (International Harvester Co.). SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 8 N., R. 16 W., 650 feet north of Avenue B and 800 feet east of 270th Street W, 75 feet east of house. Abandoned well, diameter 12 inches. Altitude of land-surface about 2,900 feet. Measuring point, top of casing, 0.5 foot above land-surface datum.

Water level, in feet below land-surface datum, 1942-44

Nov. 14, 1942	a218.2	Aug. 20, 1943	a210.4	May 4, 1944	a209.0
Apr. 30, 1943	a217.8	Sept. 24	a210.7	July 29	a208.4
May 28	a211.3	Dec. 1	a211.3	Oct. 28	a207.7
June 25	a210.3	Jan. 22, 1944	a211.0	Dec. 6	207.4
July 23	a210.2	Apr. 25	a209.7		

a Measurement by Los Angeles County Flood Control District.

8/16-18H1. Neenach School. SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 8 N., R. 16 W., 400 feet south and 500 feet west of State Highway 138, 100 feet southwest of school. School well, equipped with windmill, diameter 8 inches, depth 125 feet. Altitude of land-surface about 2,995 feet. Measuring point, top of concrete slab under windmill, at land-surface datum.

Water level, in feet below land-surface datum, 1942-44

Date	Water level	Date	Water level	Date	Water level
Nov. 14, 1942	a102.1	Aug. 20, 1943	a93.4	May 4, 1944	a88.8
Apr. 30, 1943	a101.7	Sept. 24	a92.8	July 29	a85.2
May 28	a 96.2	Dec. 1	a92.3	Oct. 28	a88.7
June 25	a 94.4	Jan. 22, 1944	a91.8	Dec. 6	89.3
July 23	a 93.8	Apr. 25	a89.4		

a Measurement by Los Angeles County Flood Control District.

San Gabriel River Basin

1S/10-18 (*817, pp. 9-11; 840, pp. 28-29; 845, pp. 17-18; 886, pp. 23-24; 911, p. 119; 941, pp. 90-91; 949, pp. 64-65; *991, p. 111). Key well U. S. 75. At Baldwin Park. Equipped with water-stage recorder.

Water level, in feet, 1944

Day	January		February		March		April	
	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level
1	79.73	307.27	79.79	307.21	77.43	309.57	67.11	319.89
2	79.72	307.28	79.76	307.24	77.08	309.92	67.12	319.98
3	79.71	307.29	79.70	307.30	76.76	310.24	67.11	319.89
4	79.76	307.24	79.69	307.31	76.32	310.68	67.05	319.95
5	79.71	307.29	79.69	307.31	75.85	311.15	66.91	320.09
6	79.69	307.31	79.66	307.34	75.42	311.58	66.77	320.23
7	79.72	307.28	79.65	307.35	74.93	312.07	66.68	320.32
8	79.73	307.27	79.62	307.38	74.41	312.59	66.41	320.59
9	79.68	307.32	79.61	307.39	73.90	313.10	66.32	320.68
10	79.69	307.31	79.64	307.36	73.39	313.61	66.32	320.67
11	79.75	307.25	79.57	307.43	72.88	314.12	66.22	320.78
12	79.78	307.22	79.50	307.50	72.42	314.58	66.05	320.95
13	79.78	307.22	79.63	307.47	71.91	315.09	66.05	320.95
14	79.75	307.25	79.42	307.58	71.48	315.52	66.01	320.99
15	79.75	307.25	79.42	307.58	71.02	315.98	66.03	320.97
16	79.79	307.21	79.43	307.57	70.48	316.52	66.05	320.95
17	79.79	307.21	79.39	307.61	69.95	317.05	66.10	320.90
18	79.82	307.18	79.38	307.62	69.51	317.49	66.12	320.88
19	79.81	307.19	79.32	307.68	69.10	317.90	66.15	320.85
20	79.78	307.22	79.22	307.78	68.69	318.31	66.14	320.86
21	79.82	307.18	79.26	307.74	68.42	318.58	66.28	320.72
22	79.84	307.16	79.20	307.80	68.21	318.79	66.38	320.62
23	79.78	307.22	79.10	307.90	67.87	319.13	66.34	320.66
24	79.70	307.30	78.97	308.03	67.59	319.41	66.40	320.60
25	79.81	307.19	78.86	308.14	67.48	319.52	66.53	320.47
26	79.85	307.15	78.57	308.43	67.41	319.59	66.52	320.48
27	79.85	307.15	78.41	308.59	67.32	319.68	66.53	320.47
28	79.83	307.17	78.15	308.85	67.32	319.68	66.65	320.35
29	79.82	307.18	77.81	309.19	67.23	319.77	66.63	320.37
30	79.79	307.21	.....	.....	67.15	319.85	66.64	320.36
31	79.77	307.23	.....	.....	67.10	319.90	.....	.....

18/10-18. Key well U. S. 75--Continued.

Water level, in feet, 1944

Day	May		June		July		August	
	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level
1	66.67	320.33	64.57	322.43	62.90	324.80	a62.87	a324.13
2	66.72	320.28	64.42	322.58	62.76	324.94	62.99	324.01
3	66.77	320.23	64.20	322.80	62.69	325.01	63.12	323.88
4	66.82	320.18	64.13	322.87	62.56	325.14	63.23	323.77
5	66.90	320.10	64.04	322.96	62.46	325.24	63.37	323.63
6	66.96	320.04	63.95	323.05	62.38	325.32	63.49	323.51
7	67.04	319.96	63.93	323.07	62.36	325.34	63.67	323.33
8	67.12	319.88	63.95	323.05	62.25	325.45	63.84	323.16
9	67.18	319.82	63.98	323.02	62.14	325.56	64.01	322.99
10	67.29	319.71	63.94	323.06	62.01	325.69	64.22	322.78
11	67.45	319.55	63.90	323.10	61.93	325.77	64.32	322.68
12	67.52	319.48	63.91	323.09	61.85	325.85	64.39	322.61
13	67.57	319.43	63.90	323.10	61.81	325.89	64.55	322.45
14	67.63	319.37	63.85	323.15	61.82	325.88	64.74	322.26
15	67.65	319.35	63.80	323.20	61.89	325.81	64.96	322.04
16	67.66	319.34	63.74	323.26	61.89	325.81	65.11	321.89
17	67.67	319.33	63.68	323.32	61.99	325.71	65.21	321.79
18	67.56	319.44	63.63	323.37	62.12	325.58	65.38	321.62
19	67.46	319.54	63.61	323.39	62.26	325.44	65.59	321.41
20	67.38	319.62	63.47	323.53	62.37	325.33	65.61	321.39
21	67.24	319.76	63.32	323.68	62.44	325.26	65.76	321.24
22	67.05	319.95	63.21	323.79	63.56	325.14	65.83	321.17
23	66.88	320.12	63.23	323.77	62.65	325.05	65.97	321.03
24	66.60	320.40	63.04	323.96	62.72	324.98	66.07	320.93
25	66.33	320.67	62.97	324.03	62.80	324.90	66.19	320.81
26	66.09	320.91	62.87	324.13	62.97	324.73	66.34	320.66
27	65.88	321.12	62.75	324.25	63.12	324.12	66.44	320.56
28	65.59	321.41	62.62	324.38	63.20	324.20	66.57	320.43
29	65.35	321.65	62.54	324.46	63.26	324.44	66.69	320.31
30	65.06	321.94	62.37	324.63	63.33	324.37	66.89	320.11
31	64.75	322.25	.....	.....	63.48	324.22	67.02	319.98

a Gage-height partly estimated.

Water level, in feet, 1944

Day	September		October		November		December	
	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level	Below land- surface datum	Above sea level
1	67.15	319.85	70.42	316.58	73.20	313.80	74.38	312.62
2	67.26	319.74	70.48	316.52	73.27	313.73	74.41	312.59
3	67.39	319.61	70.56	316.44	73.34	313.66	74.49	312.51
4	67.53	319.47	70.73	316.27	73.38	313.62	74.51	312.49
5	67.57	319.43	70.88	316.12	73.41	313.59	74.54	312.46
6	67.67	319.33	70.98	316.02	73.52	313.48	74.56	312.44
7	67.80	319.20	71.04	315.96	73.58	313.42	74.58	312.42
8	67.95	319.05	71.08	315.92	73.61	313.39	74.63	312.37
9	68.16	318.84	71.17	315.83	73.62	313.38	74.69	312.31
10	68.23	318.77	71.31	315.69	73.64	313.36	74.74	312.26
11	68.32	318.68	71.37	315.63	73.62	313.38	74.75	312.25
12	68.40	318.60	71.46	315.54	73.71	313.29	74.83	312.17
13	68.56	318.44	71.61	315.39	73.76	313.24	74.86	312.14
14	68.68	318.32	71.70	315.30	73.75	313.25	74.87	312.13
15	68.83	318.17	71.77	315.23	73.77	313.23	74.93	312.07
16	68.94	318.06	71.85	315.15	73.84	313.16	74.95	312.05
17	68.95	318.05	71.95	315.05	73.88	313.12	74.98	312.02
18	69.04	317.96	72.01	314.99	73.90	313.10	75.04	311.96
19	69.15	317.85	72.10	314.90	73.95	313.05	75.08	311.92
20	69.28	317.72	72.22	314.78	74.00	313.00	75.12	311.88
21	69.38	317.62	72.30	314.70	73.99	313.01	75.13	311.87
22	69.47	317.53	72.40	314.60	74.02	312.98	75.14	311.86
23	69.56	317.44	72.49	314.51	74.03	312.97	75.18	311.82

18/10-18. Key well U. S. 75--Continued.

Water level, in feet, 1944								
Day	September		October		November		December	
	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level	Below land-surface datum	Above sea level
24	69.74	317.26	72.59	314.41	74.09	312.91	75.20	311.80
25	69.83	317.17	72.67	314.33	74.18	312.82	75.24	311.76
26	70.00	317.00	72.74	314.26	74.19	312.81	75.28	311.72
27	70.13	316.87	72.82	314.18	74.21	312.79	75.30	311.70
28	70.18	316.82	72.90	314.10	74.28	312.72	75.35	311.65
29	70.24	316.76	72.98	314.02	74.29	312.70	75.37	311.63
30	70.30	316.70	73.07	313.93	74.33	312.67	75.42	311.58
31	.....	.....	73.16	313.84	.....	.....	75.43	311.57

Coastal plain

2/12-13A1 (*941, p. 105; 949, p. 89; 991, p. 113). Lycan Bros. About 1 mile east of Montebello. Records furnished by San Gabriel Valley Protective Association.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	20.64	Apr. 3	17.94	July 5	18.72	Oct. 4	19.85
12	20.44	10	18.05	12	18.77	11	19.96
19	20.28	12	18.14	19	18.77	18	20.06
20	20.24	19	18.31	26	18.88	25	20.20
26	20.10	May 3	18.34	Aug. 2	18.93	Nov. 1	20.19
Feb. 2	19.96	10	18.40	9	19.00	8	20.13
9	18.37	17	18.39	16	19.11	15	19.83
16	19.74	24	18.52	23	19.24	22	19.68
23	19.39	31	18.63	30	19.36	29	19.60
Mar. 1	18.84	June 7	18.63	Sept. 6	19.44	Dec. 6	19.52
8	18.35	14	18.63	13	19.58	13	19.54
16	18.01	21	18.66	20	19.67	20	19.50
27	17.91	28	18.72	Oct. 2	19.74	27	19.47

3/12-8L3 (*941, p. 107; 949, p. 89; 991, p. 113). Los Angeles County Farm. About 2 miles southwest of Downey. Records furnished by San Gabriel Valley Protective Association.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	19.49	Apr. 3	21.53	July 3	28.63	Oct. 2	28.58
10	19.23	10	21.15	10	28.08	9	27.74
17	19.54	17	22.28	17	28.44	16	26.90
24	19.34	24	23.27	24	29.51	23	25.60
31	18.92	May 1	20.09	31	28.76	30	24.70
Feb. 7	18.95	8	22.43	Aug. 7	28.78	Nov. 6	22.80
14	19.00	15	23.27	14	30.53	13	20.90
21	18.18	22	24.48	21	30.68	20	19.98
28	17.30	29	25.13	28	31.42	27	19.39
Mar. 6	16.83	June 5	26.33	Sept. 4	29.69	Dec. 4	19.09
13	16.70	12	26.02	11	31.34	11	19.46
20	17.31	19	27.08	18	28.74	18	19.82
27	18.87	26	27.02	25	29.20	26	19.42

3/13-20H4. East Gardena Water Co. California Division of Water Resources serial No. B-111t and location No. 840C. Los Angeles Department of Water and Power No. 7-A-18. About 2 miles west of Compton, 45 feet north of Compton Boulevard and 50 feet east of McKinley Avenue, a covered casing in concrete base, in open field. Unused drilled irrigation well, diameter 14 inches, depth 174.0 feet. Measuring point, top of coupling in welded casing cover, at land-surface datum, and 102.51 feet above mean sea level (altitude by Los Angeles Department of Water and Power). Water level in this well is affected by pumping of irrigation well 20H3, 200 feet north-east. Additional measurements monthly 1929-41 by Los Angeles Department of Water and Power.

3/13-20H4. East Gardena Water Co.--Continued.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
June 17	84.84	Nov. 27	75.77	Dec. 18	77.04
Nov. 9	77.70	Dec. 4	73.18	27	75.82

3/13-28P1. Gardena Syndicate, Inc. About 2 miles southwest of Compton, 3,050 feet north of Victoria Street, 750 feet west of Central Avenue, at concrete foundation in field. Drilled unused well, diameter 10 inches, depth 401.0 feet. Casing perforated from 300 to 340 feet below land surface. Water-stage recorder installed June 5, 1944, by Geological Survey. Measuring point, top southeast side of casing, at land-surface datum, which is 102 feet above mean sea level (interpolated from topographic map), and 0.14 foot above top of concrete slab. Water level affected by pumping of wells 28E2 and 28G2.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 5	97.05	July 31	94.03	Sept. 25	95.72	Nov. 15	(b)
10	97.72	Aug. 5	95.14	30	95.37	20	(b)
15	93.37	10	95.78	Oct. 5	95.09	25	(b)
20	94.38	15	95.54	10	95.29	30	(b)
25	94.85	20	96.09	15	94.81	Dec. 5	(b)
30	94.86	25	96.29	23	96.22	10	(b)
July 5	94.48	31	95.83	25	96.68	15	92.06
10	94.57	Sept. 5	95.27	31	94.78	20	91.52
15	94.42	10	97.16	Nov. 5	93.43	25	91.00
20	94.98	15	95.36	10	92.50	31	90.92
25	94.62	20	95.13				

a Tape measurement.

b Recorder not operating.

3/13-32F2 (#949, p. 90; #991, p. 113). John Larronde. About 1.5 miles southeast of Gardena.

Water level, in feet below land-surface datum, 1944							
June 5	84.75	July 31	87.25	Sept. 25	87.14	Nov. 15	85.55
15	85.58	Aug. 7	86.35	Oct. 2	87.09	20	85.63
19	85.83	14	86.69	9	86.87	27	85.50
26	86.80	21	87.59	16	87.04	Dec. 4	85.62
July 3	85.85	28	88.61	23	88.87	11	85.95
10	88.00	Sept. 4	87.23	30	87.02	18	86.10
17	86.82	11	87.17	Nov. 6	86.32	27	86.12
24	86.51	18	87.09				

3/13-35B2 (#949, p. 90; #991, p. 114). H. Y. Sasaki. About 1.5 miles south of Compton.

Water level, in feet below land-surface datum, 1944							
June 15	20.80	Aug. 7	23.50	Oct. 2	22.94	Nov. 20	19.50
20	21.40	21	24.23	9	22.85	27	19.02
26	21.55	28	24.33	16	22.40	Dec. 4	18.67
July 3	21.64	Sept. 4	24.28	23	22.00	11	18.53
10	22.56	11	24.25	30	21.65	18	18.72
17	22.43	18	23.57	Nov. 6	20.94	27	18.35
31	22.99	25	23.25	13	20.05		

3/13-35C2 (#949, p. 91; #991, p. 114). Carson Estate Co. About 1.5 miles south of Compton. Water-stage recorder maintained on well to Feb. 7, 1944, by Geological Survey; measurements then discontinued. Water levels, in feet below land-surface datum, 1944: Jan. 5, 19.73; Jan. 10, 19.59; Jan. 17, 19.39; Feb. 7, 18.90.

3/14-7K1. Standard Oil Co. California Division of Water Resources serial No. B-36d and location No. 1317. About 2 miles west of Hawthorne, 2,570 feet north of El Segundo Boulevard and 2,700 feet east of Sepulveda Boulevard, 580 feet west of Duley Road, 3 feet south of shed. Unused drilled well, diameter 10 inches, depth 140.0 feet. Water-stage recorder installed Dec. 16, 1944, by Geological Survey. Measuring point, top of casing flush with top of concrete foundation, at land-surface datum, which is 100 feet above mean sea level (interpolated from topographic map). All water levels are below sea level.

Water level at noon, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 17	all 14.97	Dec. 16	all 15.46	Dec. 20	115.34	Dec. 31	115.48
Dec. 11	all 15.36	18	all 15.36	25	all 15.21		

a Tape measurement.

3/14-35R1. Southern California Edison Co., Ltd. California Division of Water Resources serial No. B-103b and location No. 794. About 2 miles north of Torrance, 420 feet north of 190th Street and 265 feet west of Western Avenue, at water tank and tower. Drilled industrial well, diameter 8 inches, reported depth 550 feet. Casing perforated from 470 to 528 feet below land surface. Measuring point, top of 5/8-inch hole in pipe clamps, 1.50 feet above land-surface datum, which is 57 feet above mean sea level (interpolated from topographic map). Additional measurements made irregularly 1919-33 and monthly since 1941 by Southern California Edison Co., Ltd., about semiannually 1930-36 by Los Angeles County Flood Control District. All water levels are below sea level.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Nov. 20, 1943	91.97	Dec. 4, 1944	93.96	Dec. 18, 1944	94.16
8, 1944	95.23	11	94.05	27	94.28
27	94.01				

3/14-36M3. Frank Styskal. Geological Survey continuing observation well. California Division of Water Resources serial No. B-102m and location No. 793-B; Los Angeles Department of Water and Power No. 8-B-22. About 2 miles north of Torrance, 230 feet south of 192d Street and 540 feet east of Western Avenue, at northeast corner of garage west of dwelling, in concrete block. Unused drilled well, diameter 7 inches, reported depth 325 feet. Perforated interval not known but well believed to tap shallow water-bearing zone of Pleistocene age. Measuring point, top of coupling in welded casing cover, 0.50 foot above land-surface datum and 51.13 feet above mean sea level (altitude by Los Angeles Department of Water and Power). Water-level measurements as follows: (1) In 1910 by owner; (2) about monthly 1928-41 by Los Angeles Department of Water and Power; (3) semiannually since 1941 by Los Angeles County Flood Control District; (4) in 1943 and weekly since June 5, 1944, by Geological Survey. All water levels except the one in 1910 are below sea level.

Water level, in feet below land-surface datum, 1910, 1928-44

1910	a26	May 23, 1930	58.25	Sept. 28, 1931	60.00
Dec. 10, 1928	53.25	June 27	58.50	Oct. 29	59.80
Jan. 22, 1929	52.95	July 24	58.95	Nov. 30	58.75
Mar. 6	54.00	Aug. 27	59.20	Dec. 30	58.00
Apr. 8	53.50	Sept. 25	59.05	Jan. 26, 1932	57.85
July 5	56.70	Nov. 25	57.80	Feb. 25	57.50
Aug. 16	57.80	Dec. 19	57.30	Mar. 25	58.35
Oct. 9	57.50	Jan. 26, 1931	56.70	Apr. 27	59.10
Nov. 7	56.95	Feb. 24	57.40	May 25	60.10
Dec. 4	56.60	Mar. 19	57.50	June 25	60.70
Jan. 21, 1930	55.30	Apr. 29	57.60	July 26	60.65
Feb. 13	55.00	May 27	58.40	Aug. 23	60.85
Mar. 6	55.35	June 30	59.85	Sept. 26	60.60
28	55.20	July 27	60.30	Oct. 31	60.30
Apr. 28	58.20	Aug. 27	60.50	Nov. 28	60.00

a Measurement by owner.

3/14-36M3. Frank Styskal--Continued.

Water level, in feet below land-surface datum, 1910, 1928-44					
Date	Water level	Date	Water level	Date	Water level
Dec. 29, 1932	59.15	Feb. 3, 1937	63.50	Nov. 9, 1942	a 65.7
Jan. 26, 1933	58.90	Mar. 10	63.50	Apr. 26, 1943	a 64.8
Feb. 27	58.95	Apr. 14	63.50	Nov. 19	a 66.90
Mar. 27	59.25	May 10	64.15	Dec. 2	a 66.8
Apr. 25	60.00	June 13	64.85	Apr. 13, 1944	a 66.8
May 23	60.60	July 13	66.00	June 5	67.40
June 20	60.60	Aug. 16	66.20	12	67.36
July 20	61.75	Sept. 24	66.60	19	67.95
Aug. 29	61.95	Dec. 2	65.00	26	67.64
Sept. 25	61.60	Feb. 25, 1938	63.65	July 3	67.93
Oct. 23	61.65	Apr. 14	64.35	10	67.85
Nov. 27	61.30	June 2	65.90	17	68.35
Dec. 27	60.50	July 19	66.40	24	68.17
Jan. 26, 1934	60.15	Nov. 8	65.55	31	68.01
Feb. 28	60.05	Jan. 12, 1939	63.90	Aug. 7	68.13
Mar. 27	60.70	25	63.80	14	68.74
Apr. 25	61.50	Mar. 1	63.80	21	68.48
May 22	62.75	31	63.50	28	68.90
July 30	62.85	May 9	65.00	Sept. 4	68.67
Oct. 24	62.60	June 8	65.90	11	68.62
Nov. 20	62.10	July 19	66.80	18	68.32
Dec. 26	61.50	Aug. 23	67.18	25	68.24
Jan. 22, 1935	61.15	Sept. 12	67.15	Oct. 2	68.35
Feb. 25	61.40	Oct. 9	65.70	9	68.47
Mar. 20	61.00	Nov. 21	65.80	16	68.17
June 3	62.35	Dec. 12	65.15	23	68.10
Aug. 30	64.30	Jan. 10, 1940	64.70	30	68.12
Dec. 11	63.00	Feb. 9	64.25	Nov. 6	67.68
Jan. 27, 1936	63.05	Mar. 5	64.00	15	67.33
Mar. 2	62.30	Apr. 10	64.21	20	67.35
May 11	64.00	June 25	66.40	27	67.32
June 16	65.00	Oct. 8	67.07	Dec. 4	67.30
July 29	65.65	May 6, 1941	a 64.0	5	b 67.3
Aug. 21	66.05	8	64.30	11	67.27
Oct. 3	66.15	Oct. 16	65.84	18	67.32
Nov. 12	64.55	Nov. 5	a 65.7	27	67.24
Dec. 14	64.40	Apr. 15, 1942	a 63.5		

Measurement by Los Angeles County Flood Control District.

3/15-24D1. City of Manhattan Beach well 5. California Division of Water Resources serial No. B-32e and location No. 1289. In Manhattan Beach, 625 feet south of Rosecrans Avenue, 0.99 mile west of Sepulveda Boulevard, 1,090 feet west of Blanche Road, on east slope of sand dune, in concrete slab. Unused drilled well, diameter 16 inches, reported depth 315 feet. Casing perforated at intervals from 159 to 250 feet below land surface. Water-stage recorder installed Dec. 14, 1944, by Geological Survey. Measuring point, top of casing flush with top of concrete slab, at land-surface datum, which is 99.19 feet above mean sea level (altitude by Los Angeles County Flood Control District). Additional water-level measurements about monthly since 1935 by Los Angeles County Flood Control District. All water levels are below sea level. Water level fluctuates with tide.

Water level, in feet below land-surface datum, 1943-44			
Oct. 9, 1943	103.48	July 16, 1944	105.61
July 14, 1944	105.04	Dec. 14	104.36
15	105.32		
		Dec. 18, 1944	104.09
		25	104.19

4/11-5D1 (*949, p. 91; 991, p. 114). V. Capovilla. About 3.5 miles south of Norwalk. Records furnished by Orange County Flood Control District.

4/11-5D1. V. Capovilla--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17	16.84	Apr. 18	25.98	July 18	27.81	Nov. 21	28.74
Feb. 17	25.37	May 18	31.29	Aug. 18	38.76	Dec. 19	27.30
Mar. 17	a 17.76	June 19	25.61	Oct. 23	35.61		

a Just started pumping.

b Pumping.

c Just stopped pumping.

4/12-8P1 (138, p. 74, well 934; *941, p. 110; 949, p. 93; 991, p. 114). Montana Land Co. About 2 miles north of Signal Hill. Records furnished by city of Long Beach. All water levels are below sea level.

Water level, in feet below land-surface datum, 1944

Jan. 3	90.93	Apr. 3	85.14	July 3	95.12	Oct. 2	103.37
10	89.62	10	85.60	10	95.25	9	101.81
17	88.92	17	86.89	17	95.09	16	101.30
24	87.85	24	88.32	24	94.67	23	100.65
31	86.59	May 1	88.33	31	97.44	30	99.39
Feb. 7	85.62	8	89.22	Aug. 7	98.19	Nov. 6	98.38
14	84.98	15	90.17	14	97.65	13	97.13
21	84.11	22	91.43	21	100.17	20	96.61
28	83.70	29	92.48	28	101.64	27	96.18
Mar. 6	83.12	June 5	93.01	Sept. 4	103.13	Dec. 4	96.96
13	82.68	12	93.43	11	103.83	11	98.75
20	82.59	19	93.49	18	101.00	18	97.58
27	83.21	26	94.10	25	103.08	26	94.94

4/12-27K2 (*949, p. 94; 991, p. 115). Bryant Ranch. About 2 miles east of Signal Hill. Records furnished by R. A. Shafer.

Water level, in feet below land-surface datum, 1944

Jan. 4	3.87	Apr. 4	4.33	July 17	10.32	Oct. 16	10.71
17	2.85	18	3.15	17	a 10.31	Nov. 7	7.99
Feb. 1	2.38	May 2	3.73	28	10.45	20	6.34
19	2.95	16	4.79	Sept. 15	14.20	Dec. 4	4.92
Mar. 3	2.28	June 17	7.50	Oct. 3	12.14	15	4.07
16	1.34	July 3	9.01				

a Measured by Geological Survey.

4/13-14L1 (*949, p. 101; 991, p. 116). Southern California Edison Co., Ltd. In Long Beach, 0.4 mile west of Los Angeles River. Records furnished by city of Long Beach.

Water level, in feet below land-surface datum, 1944

Jan. 3	23.00	Apr. 3	23.77	July 3	27.87	Oct. 2	28.27
10	22.99	10	23.68	10	28.81	9	28.23
17	23.07	17	24.60	17	27.98	16	28.06
24	22.98	24	24.08	24	29.09	23	27.99
31	22.93	May 1	23.90	31	29.49	30	27.79
Feb. 7	23.09	8	24.49	Aug. 7	29.18	Nov. 6	26.69
14	23.16	15	25.07	14	30.36	13	25.94
21	22.70	22	26.22	21	29.57	20	25.62
28	22.34	29	26.68	28	30.01	27	25.42
Mar. 6	21.98	June 5	27.39	Sept. 4	28.17	Dec. 4	25.33
13	21.89	12	27.57	11	29.69	11	25.26
20	21.95	19	27.69	18	28.32	18	25.25
27	22.03	26	28.06	25	29.15	26	25.04

4/13-23G2 (*941, p. 115; 949, p. 105; 991, p. 116). City of Long Beach. Records furnished by city of Long Beach. All water levels are below sea level.

4/13-23G2. City of Long Beach--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	69.4	Apr. 15	78.5	July 8	87.1	Oct. 2	87.9
15	69.5	22	78.5	15	83.2	7	85.4
22	68.9	29	77.6	22	86.2	14	86.1
31	71.0	May 6	78.1	31	80.7	21	88.8
Feb. 11	71.3	13	79.8	Aug. 12	83.4	Nov. 1	86.1
19	71.3	20	80.9	19	85.0	10	83.3
Mar. 1	71.5	31	84.1	26	86.7	18	82.8
11	72.9	June 10	86.0	Sept. 1	87.4	25	83.9
18	72.7	17	83.0	8	86.2	Dec. 9	87.1
25	74.6	24	87.6	16	83.5	16	85.6
Apr. 1	76.3	July 1	87.6	23	84.0	23	85.5
8	76.5						

4/13-33D1 (*949, p. 109; 991, p. 116). City of Los Angeles. In Wilmington. All water levels are below sea level.

Water level, in feet below land-surface datum, 1944							
July 17	77.97	Aug. 28	80.00	Oct. 9	81.01	Nov. 20	80.40
24	78.29	Sept. 4	79.26	16	80.95	Dec. 4	81.38
31	77.47	11	79.79	23	81.09	11	81.52
Aug. 7	77.73	18	80.01	30	80.80	18	81.79
14	78.38	25	80.55	Nov. 6	80.24	25	81.74
21	79.24	Oct. 2	80.48	13	79.97		

4/13-3336 (*949, p. 110). City of Los Angeles. In Wilmington. All water levels are below sea level.

Water level, in feet below land-surface datum, 1943-44							
Date	Water level	Date	Water level	Date	Water level		Water level
Feb. 20, 1943	40.87	Sept. 11, 1944	55.42	Nov. 6, 1944	55.38		
July 17, 1944	53.81	18	55.02	13	55.27		
24	54.28	25	55.62	20	55.57		
31	54.03	Oct. 2	55.80	27	55.96		
Aug. 14	54.40	9	56.02	Dec. 4	56.26		
21	54.98	16	56.21	11	56.36		
28	55.33	23	55.99	18	56.79		
Sept. 4	55.03	30	55.93	25	56.70		

4/14-8E1. California Water Service Co. station 3. Geological Survey continuing observation well. California Division of Water Resources serial No. E-86e and location No. 725; Los Angeles Department of Water and Power No. 8-3-8. In Redondo Beach, 190 feet north of Garnet Street and 65 feet east of Prospect Avenue, in wooden pumphouse under derrick. Unused drilled public-supply well, diameter 18 inches, depth 440.5 feet. Casing perforated from 228 to 259 feet below land surface, in main water-bearing zone, of Pleistocene age. Water level measured about yearly 1930-41 by Los Angeles Department of Water and Power, in 1929 and 1930 by Los Angeles County Flood Control District, and about monthly 1934-43 by owner. Water-stage recorder installed June 5, 1944, by Geological Survey. Measuring point, top west side of casing at bottom of channel, 2.00 feet below top of concrete foundation, which is at land-surface datum and 153.67 feet above mean sea level (altitude by Los Angeles Department of Water and Power). Records through 1943 furnished by Los Angeles Department of Water and Power, by owner, and by Los Angeles County Flood Control District, as indicated; since June 1944 by Geological Survey. All water levels since 1928 are below sea level.

4/14-8E1. California Water Service Co. station 3--Continued.

Water level, in feet below land-surface datum, 1922, 1928-31, 1934-44
(Beginning June 5, 1944, noon levels from recorder charts)

Date	Water level	Date	Water level	Date	Water level
Mar. 19, 1922	a147.54	Nov. 1, 1938	d162.92	Nov. 1, 1942	e162
Oct. 9, 1928	b155	Dec. 2	e163	Jan. 1, 1943	e161
Jan. 3, 1930	c159.0	29	d161.72	Mar. 1	e162
7	d156.57	Jan. 1, 1939	e163	May 1	e162
Jan. 5, 1931	d159.92	Feb. 1	e162	July 1	e164
Feb. 13	d157.57	Mar. 1	e162	Oct. 1	e164
Apr. 2, 1934	e161	Apr. 1	e162	June 5, 1944	f162.31
Nov. 2	e162	May 1	e162	12	f162.53
Feb. 15, 1935	d159.77	10	d161.82	15	162.57
Mar. 2	e161	June 1	e164	20	162.57
6	d159.67	July 1	e164	25	162.61
Apr. 2	e161	Aug. 1	e165	30	162.66
June 3	e161	Sept. 1	e164	July 3	f162.70
July 2	e162	Oct. 1	e164	10	f162.59
Aug. 1	e162	Nov. 1	e164	15	162.64
Sept. 1	e162	Dec. 1	e164	20	162.66
Oct. 1	e162	Jan. 1, 1940	e163	25	162.70
Nov. 1	e162	11	d161.62	31	162.73
Dec. 2	e162	Feb. 1	e163	Aug. 5	162.76
11	d160.77	12	d161.47	10	162.75
Jan. 2, 1936	e162	Mar. 1	e163	15	162.80
27	d160.57	7	d161.32	20	162.81
Mar. 2	e161	Apr. 1	e163	25	162.82
Apr. 2	e161	May 1	e163	30	162.87
Aug. 1	e162	June 1	e163	Sept. 5	162.85
Sept. 1	e162	July 1	e163	10	162.93
Oct. 1	e162	Aug. 1	e164	15	162.95
Nov. 1	e162	Sept. 1	e164	20	162.93
Dec. 2	e162	Mar. 1, 1941	e163	25	f162.93
Jan. 4, 1937	e162	Apr. 1	e163	30	162.95
Feb. 4	e162	May 1	e163	Oct. 5	162.97
Mar. 2	e161	June 1	e163	10	162.98
15	d160.77	July 1	e164	15	162.97
Apr. 2	e161	Aug. 1	e164	20	162.98
May 1	e161	Sept. 1	e164	25	162.97
June 1	e162	Oct. 1	e164	31	163.00
July 2	e162	Nov. 1	e164	Nov. 5	162.95
Aug. 1	e162	Dec. 1	e164	10	162.91
Sept. 1	e162	Jan. 1, 1942	e163	15	162.82
Oct. 1	e162	Feb. 1	e163	20	f162.77
Nov. 1	e162	Mar. 1	e162	25	162.80
Dec. 2	e162	Apr. 1	e163	30	162.72
Jan. 3, 1938	e162	May 1	e163	Dec. 5	162.74
Feb. 1	e162	June 1	e163	10	162.71
Mar. 1	e162	July 1	e164	15	162.72
Apr. 4	e162	Aug. 1	e163	20	162.67
Oct. 1	e163	Sept. 1	e163	25	f162.67
		Oct. 1	e163	31	162.65

a When drilled.

b Probably gage reading by owner.

c Measured by Los Angeles County Flood Control District.

d Measured by Los Angeles Department of Water and Power.

e Gage reading by owner.

f Tape measurement.

4/14-13Fl. David E. Crutcher. Geological Survey continuing observation well. California Division of Water Resources serial No. B-104a and location No. 797; Los Angeles Department of Water and Power Torrance well 1. About 1 mile southeast of Torrance, 180 feet south of 221st Street and 80 feet east of Halldale Avenue, capped casing in vacant lot, 30 feet north of wooden fence. Unused drilled public-supply well, diameter 20 inches, depth 697.0 feet. Casing perforated at intervals from 245 to 670 feet below land surface in main water-bearing zone of Pleistocene age. Measuring point, top of north side of casing, 0.20 foot above land-surface datum and 48.86 feet above mean sea level (altitude by Los Angeles Department of Water and Power). Water level measured about monthly 1931-41 by Los Angeles Department of Water and Power. Water-stage recorder installed Mar. 18, 1944, by Geological Survey. Records through 1941 furnished by Los Angeles Department of Water and Power. All water levels are below sea level.

Water level, in feet below land-surface datum, 1931-41, 1943-44
(Since Mar. 18, 1944, highest daily level from recorder charts)

Date	Water level	Date	Water level	Date	Water level
Nov. 7, 1931	71.45	May 28, 1936	72.00	Apr. 15, 1944	75.58
Dec. 16	70.15	June 26	72.60	20	76.37
Jan. 19, 1932	69.40	July 29	73.40	25	77.55
Feb. 25	68.55	Aug. 27	73.80	30	77.88
Mar. 16	69.25	Sept. 6	73.30	May 5	77.12
Apr. 1	70.20	Nov. 16	72.25	10	76.82
15	70.90	Dec. 17	71.30	15	76.98
May 13	71.45	Feb. 3, 1937	70.00	20	77.02
June 14	72.60	Mar. 15	69.15	25	77.22
July 26	73.40	Apr. 14	69.35	31	77.37
Aug. 23	73.60	May 12	70.35	June 5	77.52
Sept. 19	73.80	June 15	71.60	12	a 77.81
Oct. 12	72.10	July 14	72.35	15	77.77
Nov. 18	72.65	Aug. 17	72.50	20	77.94
Dec. 27	70.80	Sept. 22	72.95	25	78.10
Jan. 26, 1933	70.25	Dec. 3	70.40	30	78.05
Feb. 27	70.30	Apr. 18, 1938	69.25	July 5	78.14
Mar. 27	70.20	July 20	71.10	10	a 78.29
Apr. 19	71.05	Oct. 20	71.52	15	78.37
May 12	71.35	Dec. 28	69.40	19	78.55
June 20	72.00	Jan. 16, 1939	68.93	25	78.63
July 17	72.80	Feb. 16	68.45	31	78.44
Aug. 10	73.60	Mar. 24	68.40	Aug. 5	78.71
Sept. 14	73.35	Apr. 3	68.54	10	78.81
Oct. 10	73.20	May 1	69.47	15	78.92
Nov. 21	72.80	10	70.17	20	79.32
Dec. 29	71.45	June 1	70.90	25	79.59
Jan. 22, 1934	70.70	9	71.50	31	79.65
Feb. 1	71.35	July 1	72.25	Sept. 5	79.28
Apr. 18	72.35	19	72.45	10	79.75
May 21	74.00	Aug. 1	72.72	15	79.38
July 11	74.45	Sept. 1	73.03	20	79.51
Aug. 7	75.35	13	73.35	25	a 79.68
Sept. 21	75.60	Oct. 3	72.25	30	79.82
Oct. 18	74.90	10	71.85	Oct. 5	79.87
Nov. 1	73.65	Nov. 1	72.15	10	79.97
20	72.80	22	71.92	15	80.28
Dec. 26	71.40	Dec. 8	71.89	20	80.11
Jan. 21, 1935	71.25	Jan. 12, 1940	70.45	25	80.01
Feb. 18	71.25	Feb. 12	69.45	31	80.01
Mar. 21	71.05	Mar. 8	69.57	Nov. 5	79.48
Apr. 15	70.80	Apr. 11	69.63	10	79.45
May 10	72.25	June 25	72.43	15	79.25
June 4	73.75	Oct. 8	73.70	20	79.43
July 17	75.70	Apr. 24, 1941	69.05	25	79.47
Sept. 3	75.85	Oct. 17	73.48	30	79.56
Oct. 17	75.95	Dec. 30, 1943	a 74.8	Dec. 5	79.76
24	75.60	Mar. 18, 1944	a 74.77	10	79.85
Dec. 12	71.65	20	a 74.79	15	80.12
Jan. 27, 1936	71.50	25	74.99	20	80.21
Feb. 28	69.80	31	75.68	25	80.15
Mar. 26	70.30	Apr. 5	75.77	31	80.53
Apr. 29	70.70	10	75.78		

a Tape measurement.

4/14-22D1. Standard Oil Co. California Division of Water Resources serial No. B-100 and location No. 768. About 2 miles southwest of Torrance 0.62 mile south and 0.60 mile east of T-intersection of Hawthorne Avenue and Sepulveda Boulevard, under derrick. Drilled industrial well, diameter 12 inches, reported depth 404 feet. Casing perforated from 322 to 350 feet below land surface. Measuring point, top of hole in casing cover, 0.8 foot above land-surface datum, which is 80 feet above mean sea level (interpolated from topographic map). Additional measurements about monthly since 1930 by Los Angeles County Flood Control District. All water levels are below sea level. Water levels, in feet below land-surface datum: Dec. 17, 1943, 97.58; Dec. 18, 1944, 99.14; Dec. 25, 1944, 99.06.

Orange County

Coastal plain

3/11-36Q2 (*941, p. 117; 949, p. 116; 991, p. 117). M. Del Giorgio. About 1 mile southeast of Buena Park. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	54.81	Apr. 5	50.21	July 5	66.13	Oct. 4	68.84
12	54.06	12	51.67	12	66.87	11	68.65
19	53.51	19	54.65	19	68.68	18	70.09
26	53.08	26	56.35	26	68.80	25	66.56
Feb. 2	52.67	May 3	53.65	Aug. 2	69.26	Nov. 1	64.70
9	52.07	10	56.08	9	71.68	8	61.43
16	51.79	17	58.68	16	72.17	16	57.90
24	51.12	24	59.49	23	70.96	22	56.47
Mar. 1	50.79	31	61.82	30	71.87	29	55.22
8	50.17	June 7	62.35	Sept. 6	71.08	Dec. 6	54.50
15	49.55	14	62.72	13	71.24	13	53.68
22	49.20	21	63.53	20	68.82	20	53.12
29	49.41	28	65.26	27	68.56	27	52.71

4/9-7B1 (*941, p. 120; 949, p. 117; 991, p. 117). Dowling & Prentice. About 3 miles east of Anaheim. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	162.19	Apr. 12	132.20	July 12	147.66	Oct. 11	164.05
12	161.61	19	135.12	19	149.15	18	160.48
19	162.20	26	137.49	26	150.38	25	162.66
26	161.59	May 3	138.57	Aug. 2	151.42	Nov. 1	160.74
Feb. 2	160.02	10	138.67	9	152.82	8	161.08
9	159.30	17	143.39	16	154.30	16	163.25
16	158.26	24	140.70	23	155.04	22	160.30
24	156.92	31	142.43	30	156.32	29	159.88
Mar. 8	132.60	June 7	143.35	Sept. 6	157.10	Dec. 6	162.13
15	134.03	14	143.88	13	160.60	13	161.77
22	129.08	21	144.82	20	160.72	20	158.98
29	125.83	28	146.18	27	159.53	27	158.60
Apr. 5	124.88	July 5	146.93	Oct. 4	161.49		

4/10-22L2 (*840, p. 28; 845, p. 18; 886, p. 24; *941, p. 123; 949, p. 117; 991, p. 118). Halderman & Callens. About 2 miles south of Anaheim. Records furnished by San Gabriel Valley Protective Association and Orange County Flood Control District, as indicated.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	a104.66	Mar. 30	a101.18	July 11	b105.79	Oct. 10	bc121.94
20	b103.96	Apr. 13	b101.43	13	a105.92	26	a108.23
27	a103.69	May 9	b101.50	Aug. 8	b107.18	Nov. 10	b105.47
Feb. 11	b103.02	11	a101.79	24	a108.00	16	a104.66
17	a102.94	June 1	a104.16	Sept. 13	b108.90	Dec. 7	a103.96
Mar. 9	a101.40	12	b103.57	14	a108.75	11	b102.88
10	b101.10	22	a105.86	Oct. 5	a108.08	28	a102.19

a By San Gabriel Valley Protective Association.

b By Orange County Flood Control District.

c Pumping.

4/11-19K1 (138, p. 83, well 1183; #941, p. 123; 949, p. 117; 991, p. 118). Key well U. S. 47. Los Alamitos Sugar Co. About 0.5 mile north of Los Alamitos. Records furnished by city of Long Beach, except as indicated.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	6.80	Apr. 10	4.80	July 10	18.23	Oct. 9	20.33
10	6.38	17	5.64	17	18.97	16	19.96
17	5.94	24	6.72	24	19.11	23	18.28
24	5.60	May 1	a 7.63	31	a21.81	30	16.67
31	a5.29	1	7.65	31	21.51	30	b16.54
31	5.27	8	7.61	Aug. 7	21.72	31	a17.77
Feb. 7	5.11	15	8.90	14	22.46	Nov. 6	14.93
14	4.85	22	9.98	21	23.55	13	11.96
21	4.68	29	11.13	28	24.79	20	9.75
28	3.87	31	a11.33	31	a25.00	27	8.25
29	a7.77	June 5	11.46	Sept. 4	24.72	30	a 8.19
Mar. 6	3.45	12	12.61	11	23.56	Dec. 4	7.96
13	3.34	19	15.42	18	22.45	11	7.37
20	3.38	26	16.22	25	21.41	18	7.25
27	3.54	30	a17.53	29	a22.87	26	6.57
31	a4.00	30	b15.90	29	b21.28	30	a 6.37
Apr. 3	4.19	July 3	17.22	Oct. 2	22.33		

a Measured by Geological Survey.

b Highest daily level, from recorder chart.

5/10-9D1 (#941, p. 126; 949, p. 118; 991, p. 118). Julio Martinez. About 1 mile south of Garden Grove. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Jan. 20	47.82	Apr. 13	50.46	July 11	58.60	Oct. 10	60.40
Feb. 11	47.42	May 9	53.06	Aug. 8	59.50	Nov. 10	50.10
Mar. 10	46.84	June 12	55.56	Sept. 13	60.90	Dec. 11	47.25

5/10-28E1 (#949, p. 119; 991, p. 118). John Sturtevant. About 3.5 miles southwest of Santa Ana. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Jan. 10	25.49	Apr. 10	28.92	July 7	39.62	Oct. 3	36.60
Feb. 3	25.10	May 2	28.60	Aug. 4	39.60	Nov. 6	28.80
Mar. 7	24.82	June 6	34.90	Sept. 11	39.08	Dec. 16	25.63

5/11-2E1 (#949, p. 121; 991, p. 119). Western Trust & Savings Bank. About 1 mile north of Westminster. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Jan. 4	25.43	Apr. 5	25.11	July 3	36.02	Oct. 4	35.99
Feb. 1	24.03	May 1	29.04	Aug. 3	(a)	Nov. 9	30.36
Mar. 3	23.63	June 5	33.10	Sept. 7	40.69	Dec. 6	26.27

a Pumping.

5/11-16D2 (#941, p. 127; 949, p. 124; 991, p. 119). Anaheim Sugar Co. About 4 miles east of Seal Beach. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Jan. 5	3.63	Mar. 8	2.21	May 10	4.82	July 12	10.59
12	3.10	15	2.22	17	5.50	19	10.73
19	2.92	22	2.79	24	5.56	26	10.50
26	2.67	29	2.40	31	6.80	Aug. 2	10.69
Feb. 2	2.47	Apr. 5	2.65	June 7	8.45	9	10.59
9	4.42	12	2.86	14	9.44	16	11.79
16	5.84	19	3.65	21	7.61	23	12.24
24	3.53	26	4.03	28	7.95	30	11.73
Mar. 1	2.71	May 3	4.51	July 5	8.55	Sept. 6	12.10

5/11-16D2. Anaheim Sugar Co.--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 13	14.41	Oct. 11	12.47	Nov. 8	7.47	Dec. 6	4.52
20	14.78	18	10.46	16	5.07	13	4.41
27	15.35	25	10.05	22	5.78	20	3.83
Oct. 4	13.60	Nov. 1	8.75	29	5.53	27	3.70

5/11-18J2 (*991, p. 119). Center Gun Club. About 2.5 miles east of Seal Beach. Water-stage recorder maintained on well to Jan. 24, 1944, by Geological Survey. Measuring point after Mar. 8, 1944, top of new 8-inch casing extension, 2.42 feet above top of former 8-inch casing and 7.82 feet above land-surface datum. Measurements by Geological Survey discontinued Mar. 13, 1944.

Water level at noon, in feet above land-surface datum, 1944
(From recorder charts)

Jan. 5	4.61	Jan. 17	a5.08	Feb. 7	a5.40	Feb. 28	(b)
10	4.91	24	(b)	14	a3.81	Mar. 6	a5.94
15	4.98	31	(b)	21	a3.83	13	a5.91

a Tape measurement.

b Flowing.

5/11-18N1 (*949, p. 125; 911, p. 119). U. S. Naval Depot. Formerly owned by Alamitos Land Co. About 2 miles southeast of Seal Beach. Water-stage recorder maintained on well to Mar. 13, 1944, by Geological Survey.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Jan. 3	a4.51	Jan. 31	3.30	Feb. 21	a4.96	Mar. 10	3.06
10	a3.76	Feb. 5	2.70	25	2.24	13	a3.83
17	a4.15	10	3.05	28	a4.00	Oct. 31	a4.72
20	3.28	15	3.62	Mar. 5	2.92	Dec. 29	a3.43
25	1.58						

a Tape measurement.

5/11-18P1 (*949, p. 126; 991, p. 120). U. S. Naval Depot. Formerly owned by Alamitos Land Co. About 2 miles southeast of Seal Beach. Water-stage recorder maintained on well to Mar. 13, 1944, by Geological Survey.

Highest daily water level, in feet with reference to
land-surface datum, 1944
(From recorder charts)

Jan. 5	-0.40	Jan. 31	-0.49	Feb. 20	+0.52	Mar. 10	-0.17
10	+27	Feb. 5	+17	25	+65	13	a-1.16
15	-79	10	-21	29	-30	Oct. 31	a-2.36
20	-36	14	a-1.49	Mar. 5	-07	Dec. 29	a-1.44
25	+1.34						

a Tape measurement.

5/11-25P1 (*949, p. 131; 991, p. 120). E. J. Lecrivain. About 3.5 miles north of Huntington Beach. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Jan. 10	35.15	Apr. 10	a36.66	July 7	40.34	Oct. 3	39.37
Feb. 3	34.52	May 2	35.69	Aug. 4	41.60	Nov. 6	37.06
Mar. 7	34.82	June 6	37.90	Sept. 11	41.29	Dec. 16	35.03

a Just started pumping.

5/11-28A1 (*949, p. 133; 991, p. 120). A. Ruoff. About 4 miles northwest of Huntington Beach. Records furnished by Orange County Flood Control District.

5/11-28A1. A. Ruoff--Continued.

Water level, in feet, with reference to land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 10	+9.08	Apr. 10	+12.78	July 7	+10.23
Feb. 3	+12.58	May 11	+12.78	Aug. 4	+6.88
Mar. 7	+10.08	June 6	+12.98	Sept. 11	(a)
				Oct. 3	-0.06
				Nov. 6	+6.58
				Dec. 16	+10.38

a Flowing.

5/11-29C4 (*949, p. 135; 991, p. 121). Sunset Land & Water Co. About 1 mile southeast of Sunset Beach. Records furnished by Orange County Flood Control District.

Water level, in feet, with reference to land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 10	+0.55	Apr. 10	+1.82	July 7	-1.74
Feb. 3	+1.47	May 2	+1.10	Aug. 4	-3.06
Mar. 7	+1.89	June 6	-1.17	Sept. 11	-7.44
				Oct. 3	-9.07
				Nov. 6	-3.34
				Dec. 16	+2.88

5/11-29E1 (*949, p. 136; 991, p. 121). U. S. Government. About 1 mile southeast of Sunset Beach. Water levels, in feet below land-surface datum, 1944: Oct. 31, 6.84; Dec. 29, 4.75.

5/11-29E2 (*949, p. 136; 991, p. 121). U. S. Government. About 1 mile southeast of Sunset Beach. Water levels, in feet below land-surface datum, 1944: Oct. 31, 5.36; Dec. 29, 4.52.

5/12-281 (*949, p. 111). Bryant Ranch. About 2 miles north of Seal Beach. Records furnished by R. A. Shafer.

Water level, in feet, with reference to land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 4	+0.8	Apr. 4	(a)	July 3	-1.8
17	(a)	18	(a)	17	-3.4
Feb. 1	(a)	May 2	(a)	28	-3.8
19	(a)	16	+3	Sept. 15	-6.1
Mar. 3	(a)	June 17	-1.0	Oct. 3	-5.2
16	(a)				
				Oct. 18	-4.0
				Nov. 7	-2.3
				20	-8
				Dec. 4	+1
				15	+7

a Flowing.

5/12-12F1 (*949, p. 140; 991, p. 122). U. S. Naval Depot. Formerly owned by I. W. Hellman Ranch. About 1 mile east of Seal Beach. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 8	8.97	May 8	8.15	July 15	a21.05
22	7.99	13	8.10	22	a20.97
Feb. 5	7.75	20	8.29	29	12.18
19	8.24	27	8.65	Aug. 5	14.35
Mar. 4	7.24	June 3	8.97	12	12.46
18	7.11	10	9.63	19	26.93
Apr. 1	6.99	17	9.93	26	b14.36
15	7.31	24	10.12	Sept. 2	c13.50
22	7.40	July 1	10.29	16	14.08
29	7.68	8	10.46	23	14.38
				Sept. 30	14.60
				Oct. 7	14.44
				14	14.34
				21	12.40
				28	12.33
				Nov. 4	11.47
				18	8.78
				25	9.99
				Dec. 2	9.25

a Pumping.

b Just stopped pumping.

c Pump shut off for 10 minutes.

5/12-13D1 (*949, p. 143; 991, p. 122). U. S. Naval Depot. Formerly owned by I. W. Hellman Ranch. In Seal Beach. Water levels, in feet below land-surface datum, 1944: Mar. 13, 23.45; Oct. 31, 23.88; Dec. 29, 23.60.

5/12-13D2 (*949, p. 144; 991, p. 122). U. S. Naval Depot. Formerly owned by I. W. Hellman Ranch. In Seal Beach. Water levels, in feet below land-surface datum, 1944: Mar. 13, 22.43; Oct. 31, 22.97; Dec. 29, 22.72.

6/10-1E1 (*949, p. 144; 991, p. 123). Frank Ey. About 3.5 miles northeast of Costa Mesa. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	20.38	May 6	19.63	July 22	35.63	Oct. 14	27.40
13	20.13	12	20.67	29	35.83	16	27.43
22	19.23	13	20.73	Aug. 5	34.63	21	26.30
Feb. 5	23.53	20	21.02	11	34.67	28	25.51
15	23.88	27	21.70	12	34.66	Nov. 4	23.39
19	27.63	June 10	22.36	19	31.63	13	21.85
Mar. 4	26.39	13	22.75	27	31.16	18	21.31
14	25.91	17	24.32	Sept. 2	30.35	25	19.78
13	25.11	24	25.12	14	29.07	Dec. 2	18.40
Apr. 1	21.56	July 1	25.63	16	28.05	9	18.12
13	20.62	8	28.61	23	26.61	12	18.07
15	20.27	13	30.97	30	27.63	16	18.18
22	21.53	15	32.05	Oct. 7	27.13	30	17.10
29	20.59						

6/10-1L2 (137, p. 137, Santa Ana Quadrangle well 1356; *949, p. 147; 991, p. 123). I. A. W. Henry. About 3.5 miles northeast of Costa Mesa. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	17.59	Apr. 13	16.36	July 13	18.05	Oct. 16	17.99
Feb. 15	18.43	May 12	16.20	Aug. 11	(a)	Nov. 13	17.54
Mar. 14	16.73	June 13	16.45	Sept. 14	18.00	Dec. 12	16.79

a Obstruction in well at about 17 feet below land surface.
b Cleaned out to 140 feet.

6/10-5C1 (*941, p. 130; 949, p. 150; 991, p. 123). Robert Gisler. About 3 miles northeast of Huntington Beach. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	5.95	May 13	7.88	July 29	14.98	Oct. 14	10.32
22	5.86	20	(a)	Aug. 5	(a)	21	9.80
Feb. 5	5.71	27	10.59	12	(a)	28	9.10
19	(a)	June 3	(a)	19	(a)	Nov. 4	8.55
Mar. 4	5.50	10	(a)	26	(a)	18	6.60
18	6.42	17	(a)	Sept. 2	15.04	25	6.20
Apr. 1	8.12	24	(a)	16	(a)	Dec. 2	5.93
15	(a)	July 1	(a)	23	11.84	9	5.82
22	7.05	8	(a)	30	11.81	16	5.93
29	(a)	15	(a)	Oct. 7	11.25	30	5.35
May 6	(a)	22	(a)				

a Pumping.

6/11-13G2 (*949, p. 163; 991, p. 124). Surf Land & Water Co. About 1.5 miles east of Huntington Beach. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	1.29	Apr. 5	a3.60	July 5	a3.99	Oct. 4	a3.23
12	1.15	12	1.09	12	a5.89	11	a3.25
19	1.11	19	.77	19	a6.59	18	2.68
26	.85	26	1.05	26	a4.79	25	1.47
Feb. 2	1.65	May 3	.18	Aug. 2	a6.00	Nov. 1	2.79
9	1.52	10	.72	9	a5.56	8	a2.97
16	2.68	17	1.45	16	a5.32	16	2.04
24	.89	24	2.77	23	a6.40	22	1.71
Mar. 1	.21	31	a3.70	30	a5.70	29	1.59
8	1.77	June 7	a3.50	Sept. 6	a4.85	Dec. 6	1.24
15	.17	14	a3.10	13	a4.18	13	a2.89
22	1.16	21	2.80	20	a3.65	20	a3.63
29	1.19	28	a4.24	27	a3.63	27	a3.43

a Below sea level.

I-9F1 (*941, p. 133; 949, p. 169; 991, p. 124). The Irvine Co. About 3 miles south of Santa Ana. Records furnished by Orange County Flood Control District.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	29.22	Apr. 19	26.79	July 19	abl60.65	Oct. 11	37.81
12	28.49	26	27.78	26	abl57.33	18	38.63
19	27.96	May 3	26.61	Aug. 2	48.35	25	38.17
26	27.40	10	26.78	9	48.88	Nov. 1	36.39
Feb. 2	27.36	17	27.41	16	40.55	8	35.00
9	27.78	24	28.97	23	39.38	16	32.39
16	29.16	31	abl37.89	30	38.63	22	31.12
Mar. 8	28.38	June 7	30.80	Sept. 6	37.79	29	30.32
15	27.92	14	30.74	13	38.74	Dec. 6	29.37
22	27.56	21	31.32	20	38.68	13	30.76
29	27.55	28	32.53	27	abl45.58	20	29.19
Apr. 5	27.62	July 5	32.37	Oct. 4	37.62	27	28.58
12	26.83	12	38.79				

a Pumping.

b Below sea level.

Riverside County

Santa Ana River Basin, San Jacinto Valley

3/2W-35Q1. I. E. Facemire. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 3 S., R. 2 W., 100 feet west of Bridge Street, 0.7 mile south of Riverside-San Jacinto highway. Measuring point, top of concrete block, 0.5 foot above land-surface datum. Altitude of land surface about 1,428 feet.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
May 13, 1921	0.5	Mar. 3, 1930	9.00	Feb. 23, 1938	6.48
July 25	8.65	May 21	13.65	May 4	1.17
Oct. 10	1.75	July 31	35.02	Oct. 25	2.43
Apr. 7, 1922	(a)	Dec. 4	17.25	Feb. 21, 1939	1.32
May 11	(a)	Mar. 4, 1931	7.39	May 31	.64
Oct. 27	(a)	June 12	27.47	Aug. 10	34.50
Feb. 26, 1923	(a)	Aug. 26	35.95	Nov. 18	17.22
June 6	4.70	Mar. 8, 1932	9.08	Feb. 15, 1940	7.39
Sept. 17	6.60	May 3	6.52	May 16	8.03
Dec. 6	(a)	Nov. 18	20.87	Aug. 23	20.86
Feb. 26, 1924	(a)	Feb. 6, 1933	10.25	Jan. 15, 1941	21.77
Aug. 26	8.13	May 18	15.90	Mar. 11	16.21
Mar. 12, 1925	1.20	Aug. 4	44.28	May 22	8.38
May 26	13.80	Nov. 10	22.26	Aug. 20	22.40
Aug. 25	21.05	Feb. 6, 1934	11.33	Nov. 7	26.48
Nov. 3	9.72	Dec. 4	19.50	Feb. 18, 1942	19.82
May 13, 1926	20.1	Feb. 26, 1935	9.62	May 19	30.17
Oct. 27	12.67	May 4	9.30	Aug. 26	41.97
June 24, 1927	4.03	Feb. 7, 1936	15.95	Nov. 3	41.87
Aug. 30	21.40	May 13	33.45	Mar. 26, 1943	26.60
Mar. 17, 1928	4.03	Aug. 12	34.60	June 15	28.53
June 23	22.90	Nov. 2	18.60	Aug. 11	31.50
Aug. 15	27.03	May 7, 1937	15.66	July 10, 1944	35.01
May 1, 1929	14.86	Sept. 15	25.80	Aug. 21	40.82
Sept. 7	30.42	Nov. 19	18.42	Nov. 4	40.86

a Flowing.

4/2W-7J1 (See Water-Supply Papers 429, p. 44, well 18; 468, p. 88, well 85). Albert McDonald. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 4 S., R. 2 W., 25 feet north of Reservoir Avenue and 100 feet west of Magnolia Avenue. Used domestic well. Measuring point, top of casing, 0.5 foot above land-surface datum. Altitude of land-surface about 1,445 feet.

4/2W-7J1. Albert McDonald--Continued.

Water level, in feet below land-surface datum, 1921-44					
Date	Water level	Date	Water level	Date	Water level
Feb. 10, 1921	34.30	May 21, 1930	45.97	Feb. 23, 1938	55.77
May 13	35.35	July 31	46.12	May 4	57.38
July 25	36.4	Dec. 4	45.14	Oct. 22	58.98
Oct. 10	36.2	Mar. 4, 1931	44.61	Feb. 21, 1939	56.25
Apr. 6, 1922	34.15	June 12	49.56	May 31	61.25
May 11	34.10	Aug. 26	51.37	Aug. 16	61.53
Aug. 29	35.32	Mar. 8, 1932	46.30	Nov. 18	60.37
Feb. 26, 1923	37.2	May 3	54.20	Feb. 21, 1940	57.29
June 6	36.81	Aug. 10	51.41	May 16	62.30
Sept. 17	37.98	Nov. 18	48.83	Aug. 23	62.37
Dec. 6	36.26	Feb. 6, 1933	48.25	Jan. 15, 1941	59.14
Feb. 26, 1924	36.75	May 18	51.10	Mar. 11	58.13
Aug. 26	38.65	Aug. 4	51.50	May 22	62.63
Mar. 12, 1925	37.76	Nov. 10	50.19	Aug. 20	65.09
May 26	38.92	Feb. 6, 1934	49.34	Nov. 7	64.06
Aug. 25	39.0	Dec. 4	64.75	Feb. 13, 1942	59.40
Nov. 3	39.3	Feb. 26, 1935	56.52	May 19	65.04
May 13, 1926	37.5	May 4	62.82	Aug. 26	67.57
June 24, 1927	40.00	Aug. 6	55.56	Nov. 3	66.02
Aug. 30	41.04	Nov. 4	55.40	Mar. 26, 1943	60.37
Oct. 17	42.36	Feb. 7, 1936	57.60	June 15	62.34
Mar. 17, 1928	39.85	May 13	58.49	Aug. 11	70.15
June 6	42.21	Aug. 12	58.21	Dec. 16	66.64
Aug. 15	43.32	Nov. 2	60.78	Feb. 12, 1944	64.05
May 1, 1929	42.35	May 7, 1937	55.90	July 10	72.62
Sept. 7	44.55	Sept. 15	60.02	Nov. 4	72.95
Mar. 4, 1930	45.48	Nov. 19	57.69		

4/3W-32E1. Formerly well 72c (*817, p. 12; 840, p. 30; 845, p. 18; 886, p. 24; 911, p. 120; 941, p. 92; 949, p. 66; 991, p. 124). James Malcolm. Key well. At Perris, Riverside County. Water levels, in feet below land-surface datum, 1944: Feb. 12, 68.63; July 10, 67.82; Aug. 21, 67.64; Nov. 4, 66.92

4/4W-11L (See Water-Supply Paper 468, p. 74, well 69a). B. H. LeCont. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 4 S., R. 4 W., 100 feet south of Markham Street and 150 feet east of U. S. Highway 395. Used domestic well, diameter 12 inches, depth 93 feet. Measuring point, top of casing, 1.5 feet above land-surface datum. Altitude of land surface about 1,504 feet.

Water level, in feet below land-surface datum, 1921-44					
Date	Water level	Date	Water level	Date	Water level
Feb. 10, 1921	43.55	June 6, 1928	42.77	Aug. 6, 1935	45.19
Apr. 22	43.2	Aug. 15	42.95	Nov. 4	45.61
May 13	63.0	May 1, 1929	43.49	Feb. 7, 1936	45.92
July 25	59.6	Sept. 7	43.71	May 13	46.02
Oct. 10	43.7	Mar. 4, 1930	43.72	Aug. 12	46.28
Apr. 7, 1922	41.12	May 21	43.96	Nov. 5	46.60
May 16	41.26	July 31	43.90	Feb. 3, 1937	45.30
Aug. 2	49.13	Dec. 4	44.12	May 7	42.19
Feb. 26, 1923	41.95	Mar. 4, 1931	42.80	Sept. 15	43.48
June 6	42.67	June 12	43.03	Nov. 19	44.04
Sept. 17	42.74	Aug. 26	43.53	Feb. 23, 1938	45.15
Feb. 26, 1924	42.72	Mar. 8, 1932	43.51	May 4	43.79
Aug. 26	43.11	May 3	43.74	Oct. 22	44.86
Mar. 12, 1925	41.93	Aug. 10	44.19	Feb. 14, 1939	43.71
May 26	41.78	Nov. 18	44.51	May 31	43.72
Aug. 25	60.6	Feb. 6, 1933	44.39	Aug. 23	44.64
25	44.25	May 18	44.50	Nov. 15	44.30
Nov. 3	53.3	Aug. 4	44.35	Feb. 15, 1940	44.51
May 13, 1926	41.36	Nov. 10	45.11	May 10	49.75
Oct. 27	41.87	Feb. 6, 1934	45.30	Aug. 23	47.19
June 24, 1927	41.90	Dec. 4	45.78	Jan. 15, 1941	44.02
Oct. 17	42.29	Feb. 26, 1935	44.82	Mar. 18	41.61
Feb. 21, 1928	42.42	May 7	44.61	May 22	41.90

4/4W-1L1. B. H. LeCont--Continued.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
Aug. 20, 1941	41.54	Nov. 3, 1942	41.72	Dec. 16, 1943	40.20
Nov. 7	45.26	Mar. 26, 1943	40.61	Feb. 12, 1944	39.72
Feb. 18, 1942	41.46	June 15	41.64	July 10	40.58
May 19	42.44	Aug. 11	40.82	Nov. 4	39.60
Aug. 26	42.82				

5/1W-2N1 (See Water-Supply Papers 429, p. 35, well 118; 486, p. 86, well 85a). J. A. Barger. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 5 S., R. 1 W., 1,400 feet north of Menlo Avenue and 100 feet west of San Jacinto Avenue. Used domestic well, diameter 7 inches, depth 140 feet. Measuring point, top of casing, 0.7 foot above land-surface datum. Altitude of land surface about 1,584 feet.

Water level, in feet below land-surface datum, 1921-24, 1940-44

Feb. 10, 1921	57.00	Feb. 26, 1924	58.61	May 19, 1942	71.61
May 13	57.50	21, 1940	72.87	Aug. 26	71.39
Apr. 7, 1922	57.28	May 10	73.05	Nov. 3	71.29
May 11	57.05	Aug. 23	73.33	Mar. 26, 1943	70.81
Aug. 2	57.58	Jan. 15, 1941	73.00	June 15	70.88
Oct. 27	57.96	Mar. 7	72.94	Dec. 16	69.95
Feb. 26, 1923	57.61	May 22	72.73	Feb. 12, 1944	69.87
June 6	57.98	Aug. 20	72.46	July 10	70.27
Sept. 17	58.64	Nov. 7	72.19	Aug. 21	70.28
Dec. 6	58.79	Feb. 25, 1942	71.72	Nov. 4	69.98

5/2W-24A1 (See Water-Supply Paper 468, p. 84, well 91a). L. Wilhelm. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T. 5 S., R. 2 W., 200 feet south and 150 feet west of northeast corner of section. Unused domestic well, diameter 7 inches, depth 120 feet. Measuring point, top of casing, 0.1 foot above land-surface datum. Altitude of land surface about 1,499 feet.

Water level, in feet below land-surface datum, 1921-44

Feb. 10, 1921	17.54	Dec. 4, 1930	23.52	May 4, 1938	25.80
May 13	15.95	June 12, 1931	28.31	Oct. 18	33.54
July 23	26.3	Aug. 26	36.64	Feb. 14, 1939	28.30
Oct. 10	26.8	Mar. 8, 1932	27.84	May 31	35.00
Apr. 7, 1922	7.11	May 3	24.21	Aug. 16	40.8
May 22	16.64	Aug. 10	26.10	Nov. 15	31.34
Aug. 2	12.75	Nov. 18	25.63	Feb. 15, 1940	29.15
Feb. 26, 1923	13.27	Feb. 6, 1933	24.82	May 10	33.82
June 6	12.74	May 18	28.86	Aug. 23	35.23
Dec. 6	13.48	Aug. 4	32.55	Jan. 15, 1941	30.44
Feb. 26, 1924	15.18	Nov. 10	28.99	Mar. 13	32.02
Aug. 26	17.04	Feb. 6, 1934	25.44	May 22	32.42
Mar. 12, 1925	23.62	Dec. 4	28.03	Aug. 20	32.06
May 26	23.46	Feb. 26, 1935	26.26	Nov. 7	28.40
Aug. 25	24.72	May 7	29.95	Feb. 18, 1942	26.94
Nov. 3	22.1	Aug. 6	31.79	May 19	32.08
Oct. 27, 1926	20.68	Nov. 4	31.40	Aug. 26	33.92
June 24, 1927	17.56	Feb. 7, 1936	39.22	Nov. 3	35.00
Aug. 30	19.13	May 13	32.43	Mar. 26, 1943	28.01
Oct. 17	20.56	Aug. 12	40.96	June 15	33.76
May 22, 1928	23.88	Nov. 23	36.42	Aug. 11	34.63
Aug. 15	28.6	Feb. 3, 1937	27.07	Dec. 16	31.08
May 1, 1929	24.15	May 7	25.85	Feb. 12, 1944	29.21
Sept. 7	25.45	Sept. 15	30.02	July 10	38.40
Mar. 4, 1930	23.46	Nov. 19	27.89	Aug. 21	37.57
May 21	29.10	Feb. 23, 1938	26.75	Nov. 4	34.70
July 31	26.20				

5/2W-27E1 (See Water-Supply Papers 429, p. 39, well 63; 468, p. 83, well 80b). L. L. Whiting. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 5 S., R. 2 W., about 30 feet west of red brick house, in Winchester. Domestic well, diameter 5 inches. Measuring point, top of casing, 1.1 feet above land-surface datum. Altitude of land surface about 1,477 feet. Well was destroyed in fall of 1930 and replaced by well 5/2W-27E2.

Water level, in feet below land-surface datum, 1921-30

Date	Water level	Date	Water level	Date	Water level
Feb. 10, 1921	20.18	Dec. 6, 1923	18.62	Oct. 17, 1927	21.22
May 13	20.56	Aug. 26, 1924	28.85	Feb. 21, 1928	20.55
July 25	21.2	Mar. 12, 1925	21.95	May 22	21.47
Oct. 10	24.6	May 26	22.40	Aug. 15	22.82
Apr. 7, 1922	13.77	Aug. 25	27.60	May 1, 1929	23.54
Aug. 29	14.35	Nov. 3	23.57	Sept. 7	25.30
Oct. 27	15.36	May 13, 1926	22.30	Mar. 4, 1930	24.4
Feb. 26, 1923	17.8	Oct. 27	24.51	May 21	24.32
June 6	18.78	June 24, 1927	19.76	July 31	25.76
Sept. 17	18.50	Aug. 30	20.40		

5/2W-27E2. L. L. Whiting. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 5 S., R. 2 W., about 30 feet west of red brick house, in Winchester. Domestic well, diameter 9 inches. Measuring point, top of casing, 1.2 feet above land-surface datum. Altitude of land surface about 1,477 feet. This well was drilled within a few feet of 5/2W-27E1 after the latter was destroyed in 1930.

Water level, in feet below land-surface datum, 1930-44

Dec. 4, 1930	25.95	May 13, 1936	33.41	Jan. 15, 1941	30.49
Mar. 4, 1931	25.20	Aug. 12	34.28	Mar. 15	28.91
June 12	26.62	Nov. 23	38.87	May 22	27.38
Mar. 8, 1932	26.16	Feb. 3, 1937	33.32	Aug. 20	27.51
May 3	25.44	May 7	29.90	Nov. 7	27.37
Aug. 10	27.70	Sept. 15	30.30	Feb. 18, 1942	26.70
Nov. 18	28.17	Nov. 19	30.32	May 19	27.12
Feb. 6, 1933	27.26	Feb. 23, 1938	29.67	Aug. 26	28.92
May 18	29.52	May 4	28.28	Nov. 3	29.29
Aug. 4	29.13	Oct. 18	26.66	Mar. 26, 1943	27.21
Nov. 10	29.84	Feb. 14, 1939	28.18	June 15	26.98
Feb. 6, 1934	29.66	May 31	30.71	Aug. 11	28.07
Dec. 4	35.66	Aug. 16	29.23	Dec. 16	28.30
Feb. 26, 1935	33.35	Nov. 15	29.48	Feb. 12, 1944	27.46
May 7	31.84	Feb. 15, 1940	28.69	July 10	28.37
Aug. 6	32.71	May 10	29.37	Aug. 21	29.42
Nov. 4	37.20	Aug. 23	30.92	Nov. 4	30.96
Feb. 7, 1936	46.64				

6/3W-4A1 (See Water-Supply Papers 429, table facing p. 62, well 54; 468, p. 80, well 78a). Menifee school. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 6 S., R. 3 W., about 50 feet southwest of school building. Measuring point, top of casing, at land-surface datum. Altitude of land-surface about 1,438 feet. Well was destroyed in fall of 1925 and replaced by well 6/3W-4A2.

Water level, in feet below land-surface datum, 1921-25

Feb. 10, 1921	41.23	Aug. 29, 1922	38.89	Dec. 6, 1923	41.50
May 13	41.82	Oct. 27	39.9	Aug. 26, 1924	43.63
July 25	43.0	Feb. 26, 1923	39.5	Mar. 12, 1925	46.27
Oct. 10	43.5	June 6	41.02	May 26	53.80
Apr. 7, 1922	40.97	Sept. 17	41.7	Aug. 25	58.32
May 16	39.98				

6/3W-4A2. Menifee school. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 4, T. 6 S., R. 3 W., about 50 feet southwest of school building. Domestic well, drilled in 1925 to replace 6/3W-4A1. Measuring point, top of casing, 2.3 feet above land-surface datum. Altitude of land-surface about 1,438 feet.

Water level, in feet below land-surface datum, 1925-34, 1936, 1938-44

Nov. 3, 1925	52.06	Oct. 7, 1927	50.18	Sept. 7, 1929	58.21
May 13, 1936	51.30	Feb. 21, 1928	51.70	Mar. 3, 1930	55.72
Oct. 27	51.35	May 22	50.78	May 21	56.34
June 24, 1927	49.37	Aug. 15	52.50	July 31	54.11
Aug. 30	51.32	May 1, 1929	58.95	Dec. 4	53.35

6/3W-4A2. Menifee School--Continued.

Water level, in feet below land-surface datum, 1925-34, 1936, 1938-44					
Date	Water level	Date	Water level	Date	Water level
Mar. 4, 1931	55.60	Nov. 13, 1936	(a)	Nov. 7, 1941	47.16
June 16	55.94	Feb. 23, 1938	54.66	Feb. 18, 1942	47.28
Aug. 26	54.68	May 4	53.30	May 19	48.58
Mar. 8, 1932	53.54	Oct. 18	52.88	Aug. 26	49.56
May 3	54.64	Feb. 14, 1939	50.91	Nov. 3	56.30
Aug. 10	55.72	May 31	50.62	Mar. 26, 1943	48.07
Nov. 18	54.49	Aug. 16	51.42	June 15	49.28
Feb. 6, 1933	58.49	Nov. 15	51.54	Aug. 11	48.60
May 18	58.95	Feb. 15, 1940	51.14	Dec. 16	48.10
Feb. 6, 1934	55.89	Jan. 15, 1941	53.55	July 10, 1944	48.16
Dec. 4	57.67	Mar. 15	52.42	Aug. 21	49.59
Feb. 7, 1936	(a)	May 22	51.29	Nov. 4	47.11
Aug. 12	(a)	Aug. 20	47.24		

a Dry at 71 feet.

San Bernardino County

Mojave River Basin

3/3W-6E1 (*886, p. 30; 991, p. 125; 941, p. 96; 949, p. 66; *991, p. 124). Mike Spranger. Water levels, in feet below land-surface datum, 1944: May 11, 3.84; Dec. 14, 4.42.

3/3W-12J1 (*886, p. 30; 991, p. 125; 941, p. 96; 949, p. 66; *991, p. 125). Water levels, in feet below land-surface datum, 1944: Apr. 20, 5.17; Dec. 14, 5.53.

3/4W-13B1 (*886, p. 30; 991, p. 125; 941, p. 96; 949, p. 66; *991, p. 125). Olive. Water levels, in feet below land-surface datum, 1944: Apr. 20, 66.30; Dec. 14, 65.58.

4/2W-5N1 (*886, p. 33; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 125). A. B. Sheridan. No measurements made in 1944. Well is in Army bombing range.

4/3W-1M1 (*886, p. 33; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 125). E. D. S. Pope. No measurements made in 1944.

4/3W-5P1 (*886, p. 34; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). Water levels, in feet below land-surface datum, 1944: Jan. 7, 168.32; Apr. 20, 168.98; Dec. 14, 167.82.

4/3W-6E1 (*886, p. 35; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). A. J. Lintner. Water levels, in feet below land-surface datum, 1944: Jan. 7, 51.34; Apr. 20, 51.29; Dec. 14, 50.80.

4/3W-6D1 (*886, p. 35; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). A. W. Phillips. Water levels, in feet below land-surface datum, 1944: Jan. 7, 52.54; Dec. 14, 51.84.

4/3W-17M1 (*886, p. 34; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). Arrowhead Reservoir & Power Co. Water levels, in feet below land-surface datum, 1944: Apr. 20, 13.99; Dec. 14, 16.53.

4/3W-18E1 (*886, p. 34; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). C. O. Evans. Water levels, in feet below land-surface datum, 1944: Apr. 20, 15.27; Dec. 14, 16.03.

4/3W-19G1 (*886, p. 33; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 125). G. W. McLister. Water levels, in feet below land-surface datum, 1944: Apr. 20, 13.58; Dec. 14, 24.17.

4/3W-19R1 (*886, p. 31; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 125). Arrowhead Reservoir & Power Co. Water levels, in feet below land-surface datum, 1944: Apr. 20, 12.09; Dec. 14, 22.96.

4/3W-20K1 (*886, p. 32; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 125). N. F. Marsh. Water levels, in feet below land-surface datum, 1944: Jan. 6, 115.15; Dec. 21, 113.0.

4/3W-20L1 (*886, p. 32; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 125). J. M. Allison. Water levels, in feet below land-surface datum, 1944: Jan. 6, 29.50; Apr. 20, 21.65; Dec. 21, 26.10.

4/3W-21A1 (*886, p. 32; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 126). W. O. Wade. Water level, in feet below land-surface datum, 1944: Dec. 21, 249.05.

4/3W-30E1 (*886, p. 30; 911, p. 126; 941, p. 96; 949, p. 66; *991, p. 126). A. W. Cole. Water levels, in feet below land-surface datum, 1944: Apr. 20, 25.49; Dec. 12, 33.75.

5/3W-9K1 (*886, p. 35; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 126). F. A. Fletcher. Water levels, in feet below land-surface datum, 1944: Apr. 20, 89.00; Dec. 13, 88.89.

5/3W-18F1 (*886, p. 35; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 126). J. D. Humiston. Water levels, in feet below land-surface datum, 1944: Apr. 20, 104.35; Dec. 13, 105.70.

5/4W-10M1 (*886, p. 36; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 126). In Victorville. Water levels, in feet below land-surface datum, 1944: Apr. 20, 43.73; Dec. 13, 43.75.

5/4W-11P1 (*886, p. 36; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 126). Lee Saul. Water levels, in feet below land-surface datum, 1944: Apr. 20, 54.12; Dec. 13, 53.77.

5/4W-11P2 (*886, p. 36; 911, p. 126; 941, p. 96; 949, p. 67; *991, p. 126). Lee Saul. Water levels, in feet below land-surface datum, 1944: Apr. 20, pumping; Dec. 13, 50.38.

5/4W-35A1 (*886, p. 36; 911, p. 126; 941, p. 97; 949, p. 67; *991, p. 126). A. Sorenson. On Verde Ranch. Flowing well; no measurements made in 1944.

5/4W-36N1 (*886, p. 36; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 126). On Verde Ranch. Water levels, in feet below land-surface datum, 1944: Jan. 7, 3.90; Apr. 20, 3.15; Dec. 14, 4.02.

6/4W-19G1 (*886, p. 37; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 126). John Bennetts. Water levels, in feet below land-surface datum, 1944: Apr. 21, 19.29; Dec. 14, caved in. Measurements discontinued.

7/4W-30C1 (*886, p. 37; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 126). Water level, in feet below land-surface datum, 1944: Apr. 21, 56.74.

8/3E-3E1 (*886, p. 43; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 126). C. W. Beaverstock. Water level, in feet below land-surface datum 1944: Apr. 25, 5.12.

8/3E-3F1 (*886, p. 44; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 126). Water level, in feet below land-surface datum, 1944: Apr. 25, 21.60.

8/3E-4B1 (*886, p. 43; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 126). Lyle Graham. Water level, in feet below land-surface datum, 1944: Apr. 25, 2.68.

8/3E-4B2 (*886, p. 43; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 126). Lyle Graham. Water level, in feet below land-surface datum, 1944: Apr. 25, 3.04.

8/4E-7E1. Bodine. Formerly owned by Burckhardt. (Companion well for 8/4E-7N1 which caved in on Dec. 30, 1943). SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 8 N., R. 4 E., in pump house about 100 feet south of ranch house. Used irrigation well. Concrete pit 22 feet deep, 16-inch casing 128 feet, 12-inch casing 150 feet; total depth, 300 feet. Measuring point, top of concrete floor of pit, 22.2 feet below land-surface datum. Elevation of measuring point, 1,779.71 feet above sea level.

Water level, in feet below land-surface datum, 1919, 1922
1930-32, 1938-44

Date	Water level	Date	Water level	Date	Water level
Dec. 11, 1919	23.8	Dec. 8, 1932	21.67	Nov. 26, 1941	22.95
May 22, 1922	23.15	Nov. 26, 1938	23.93	May 13, 1942	a 31.40
May 29, 1930	22.09	May 15, 1939	23.31	Nov. 24	23.02
Apr. 23, 1931	23.17	Nov. 30	23.31	May 19, 1943	b 23.19
Jan. 28, 1932	21.49	May 9, 1940	23.14	Dec. 30	23.12
Apr. 28	22.95	Nov. 28	23.00	Apr. 25, 1944	b 23.17
June 23	21.97	June 11, 1941	23.22		

a Pumping about 1 second-foot for 3 hours prior to measurement.

b Windmill pumping slowly.

8/4E-12L1 (*886, p. 44; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 127). Mojave Camp service station. Water level, in feet below land-surface datum, 1944: Apr. 25, 33.09.

8/3W-4M1 (*886, p. 38; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 127). Everett Swing. Water levels, in feet below land-surface datum, 1944: Apr. 22, 13.11; Dec. 12, 14.84.

8/4W-2Q1 (*886, p. 38; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 127). Water levels, in feet below land-surface datum, 1944: Apr. 21, 23.37; Dec. 13, 24.95.

8/4W-12Q1 (*886, p. 38; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 127). Holcomb Bros. Water levels, in feet below land-surface datum, 1944: Apr. 21, 7.76; Dec. 13, 8.79.

8/4W-20N1 (*886, p. 37; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 127). Lord. Water levels, in feet below land-surface datum, 1944: Apr. 21, 12.61; Dec. 13, 13.97.

8/4W-31D1 (*886, p. 37; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 127). F. H. Merrell. Water levels, in feet below land-surface datum, 1944: Apr. 21, 43.56; Dec. 13, 44.17.

8/4W-31R1 (*886, p. 37; 911, p. 127; 941, p. 97; 949, p. 67; *991, p. 127). Water levels, in feet below land-surface datum, 1944: Apr. 21, 14.63; Dec. 13, 15.29.

9/1E-12D1 (*886, p. 45; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 127). Water level, in feet below land-surface datum, 1944: Apr. 26, 33.50.

9/1E-13E1 (*886, p. 45; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 127). Water level, in feet below land-surface datum, 1944: Apr. 26, 52.77.

9/1E-13E2 (*886, p. 45; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 127). Water level, in feet below land-surface datum, 1944: Apr. 26, 54.46.

9/1E-15L1 (*886, p. 45; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 128). G. Linguenfelder. Water level, in feet below land-surface datum, 1944: Apr. 26, 50.57.

9/1E-18E1 (*886, p. 47; 991, p. 128; 941, p. 98; 949, p. 69; *991, p. 128). B. A. Funk. Water level, in feet below land-surface datum, 1944: Apr. 26, 6.90.

9/1E-24D1 (*886, p. 47; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 128). Water level, in feet below land-surface datum, 1944: Apr. 26, 61.60.

9/2E-3A1 (*886, p. 46; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Bruce McCormick. Water level, in feet below land-surface datum, 1944: Apr. 24, 9.34.

9/2E-3A2 (*886, p. 46; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Bruce McCormick. Water level, in feet below land-surface datum, 1944: Apr. 24, 13.10.

9/2E-4D1 (*886, p. 46; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Water level, in feet below land-surface datum, 1944: Apr. 24, 15.18.

9/2E-8J1 (*886, p. 47; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Annie Escholtz. Water level, in feet below land-surface datum, 1944: Apr. 25, 35.22.

9/2E-12N1 (*886, p. 49; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Hunter. Water level, in feet below land-surface datum, 1944: Apr. 25, 2.28.

9/2E-14N1 (*886, p. 49; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 128). Scobel & Haimut. Water level, in feet below land-surface datum, 1944: Apr. 25, 22.67.

9/2E-14N2 (*886, p. 49; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 129). Scobel & Haimut. Water level, in feet below land-surface datum, 1944: Apr. 25, 15.67.

9/2E-14N3 (*886, p. 50; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 129). Scobel & Haimut. Water level, in feet below land-surface datum, 1944: Apr. 25, 17.00.

9/2E-18F1 (*886, p. 47; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 129). Water level, in feet below land-surface datum, 1944: Apr. 25, pumping.

9/2E-20Q1. Daggett Airport. SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 20, T. 9 N., R. 2 E., under airport water tower, 2,300 feet east of west line of sec. 20 and about 80 feet north of main east-west paved runway. Used domestic well, diameter 12 inches, depth 142 feet. Measuring point, hole in pump base, 0.6 foot above land-surface datum.

Water level, in feet below land-surface datum, 1932, 1941-44

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1932	47.98	Nov. 25, 1942	48.67	Dec. 30, 1943	43.31
June 11, 1941	45.26	May 18, 1943	44.13	Apr. 25, 1944	42.67
May 14, 1942	44.44				

9/3E-3D1 (*886, p. 50; 911, p. 130; 941, p. 99; 949, p. 70; *991, p. 129). Water level, in feet below land-surface datum, 1944: Apr. 25, 42.08.

9/3E-10D1 (*886, p. 50; 911, p. 129; 941, p. 99; 949, p. 770; *991, p. 129). Bozarth. No measurements made in 1944.

9/3E-12E1 (*886, p. 51; 911, p. 130; 941, p. 99; 949, p. 70; *991, p. 129). B. Nicholas. Water level, in feet below land-surface datum, 1944: Apr. 25, 25.43.

9/3E-34D1 (*886, p. 48; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 129). Clinkenbeard. Water level, in feet below land-surface datum, 1944: Apr. 25, pumping.

9/4E-31K1 (*886, p. 44; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 129). A. M. Munroe. Water level, in feet below land-surface datum, 1944: Apr. 25, 12.86.

9/1W-10A1 (*886, p. 42; 911, p. 128; 941, p. 98; 949, p. 68; *991, p. 129). Gibbs. Water levels, in feet below land-surface datum, 1944: Apr. 24, 8.95; Dec. 12, 10.08.

9/1W-10D1 (*886, p. 42; 911, p. 128; 941, p. 98; 949, p. 68; *991, p. 129). R. Harlan. Water levels, in feet below land-surface datum, 1944: Apr. 24, 3.52; Dec. 12, 6.91.

9/1W-10M1 (*886, p. 43; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 129). Greystone Auto Camp. Water level, in feet below land-surface datum, 1944: Apr. 26, 48.01.

9/1W-13B1 (*886, p. 43; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 129). F. Ryerse. Water level, in feet below land-surface datum, 1944: Apr. 26, 6.24.

9/2W-19B1 (*886, p. 39; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 129). Shobel. Water levels, in feet below land-surface datum, 1944: Jan. 31, 63.71; Apr. 27, 63.31; Dec. 12, 63.29.

9/3W-10P1 (*886, p. 39; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 129). Water levels, in feet below land-surface datum, 1944: Apr. 22, 89.17; Dec. 13, 38.66.

9/3W-10R1 (*886, p. 40; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 129). Osborn. Water levels, in feet below land-surface datum, 1944: Apr. 22, 8.86; Dec. 13, 11.62.

9/3W-14D1 (*886, p. 40; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 129). Bullock. Water levels, in feet below land-surface datum, 1944: Apr. 22, 8.26; Dec. 13, 12.58.

9/3W-28A1 (*886, p. 39; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 129). J. Slagill. Water levels, in feet below land-surface datum, 1944: Apr. 22, 3.59; Dec. 13, 17.77.

9/3W-34R1 (*886, p. 38; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 130). Nellie Storey. Water level, in feet below land-surface datum, 1944: Dec. 12, 125.3.

10/2E-32P1 (*886, p. 45; 911, p. 128; 941, p. 98; 949, p. 69; *991, p. 130). Yermo Mutual Water Co. Water level, in feet below land-surface datum, 1944: Apr. 24, 22.71.

10/2E-34L1 (*886, p. 46; 911, p. 129; 941, p. 99; 949, p. 70; *991, p. 130). Water level, in feet below land-surface datum, 1944: Apr. 24, 53.76.

10/3E-21A1 (*886, p. 51; 911, p. 130; 941, p. 99; 949, p. 70; *991, p. 130). G. F. Getty. No measurements made in 1944.

10/3E-34E1 (*886, p. 50; 911, p. 130; 941, p. 99; 949, p. 70; *991, p. 130). Henderson. Water level, in feet below land-surface datum, 1944: Apr. 25, 7.30.

10/1W-31C1 (*886, p. 42; 911, p. 128; 941, p. 98; 949, p. 68; *991, p. 130). Nelson. Water levels, in feet below land-surface datum, 1944: Apr. 24, 46.96; Dec. 12, 47.89.

10/1W-33D1 (*886, p. 42; 911, p. 128; 941, p. 98; 949, p. 68; *991, p. 130). Sandoz. No measurement made in 1944.

10/2W-19P1 (*886, p. 41; 911, p. 128; 941, p. 97; 949, p. 68; *991, p. 130). Loftus. Water levels, in feet below land-surface datum, 1944: Apr. 22, 66.73; Dec. 12, 66.82.

10/2W-30R1 (*886, p. 41; 911, p. 128; 941, p. 97; 949, p. 68; *991, p. 130). J. D. Rich. Water levels, in feet below land-surface datum, 1944: Apr. 22, 21.11; Dec. 12, 20.21.

10/3W-32C1 (*886, p. 39; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 130). Water levels, in feet below land-surface datum, 1944: Apr. 22, 57.75; Dec. 13, 57.86.

11/3W-28J1 (*886, p. 40; 911, p. 127; 941, p. 97; 949, p. 68; *991, p. 130). Well dry since 1941. Measurements discontinued.

11/3W-28R1. Formerly M65 (*886, p. 40; 911, p. 127). S. F. Edwards. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 11 N., R. 3 W., about 600 feet north and 50 feet west of SE. corner of section. Used irrigation well, depth 105 feet. Measuring point, three notches in top of 2- by 6-inch wooden curb on east side of well, at land-surface datum. Altitude of land surface about 2,073 feet. Prior to 1944 measuring point was top of 2-inch wooden cover on pit, at land-surface datum. Water levels, in feet below land-surface datum, 1944: Apr. 22, 25.34; Dec. 12, 25.63.

11/3W-34F1 (*886, p. 41; 911, p. 128; 941, p. 97; 949, p. 68; *991, p. 130). Water levels, in feet below land-surface datum, 1944: Apr. 22, 33.28; Dec. 12, 32.72.

Santa Ana River Basin, San Bernardino area

1N/4-28R1 (See Water-Supply Papers 142, p. 112, well 354; 468, p. 94, well 94). S. F. Kelley. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 1 N., R. 4 W., 68 feet north of centerline of 23d Street and 110 feet west of centerline of G Street, in San Bernardino. Abandoned domestic and irrigation well, diameter 7 inches, depth, when drilled in 1897, 115 feet. Measuring point, top of 3/4-inch nipple flush with top of casing, at land-surface datum. Altitude of land surface about 1,170 feet.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
Feb. 23, 1921	41.33	Nov. 21, 1928	74.22	Nov. 27, 1935	98.83
May 14	43.30	May 10, 1929	73.39	May 5, 1936	98.21
July 12	44.6	Aug. 30	79.69	Aug. 21	100.09
Oct. 7	48.0	Feb. 21, 1930	79.57	May 12, 1937	(a)
Mar. 23, 1922	45.62	June 5	80.96	Sept. 14	(b)
May 29	43.05	July 29	81.83	Nov. 16	(c)
Aug. 21	44.02	Dec. 2	84.27	Feb. 24, 1938	(b)
Oct. 24	45.10	Feb. 18, 1931	84.22	May 17, 1939	(d)
Mar. 27, 1923	43.35	June 8	85.71	Feb. 8, 1940	76.67
May 21	43.49	Aug. 25	87.71	May 17	83.36
Aug. 21	46.18	Nov. 18	89.49	Aug. 30	81.05
Nov. 20	44.23	Mar. 10, 1932	89.83	Nov. 14	73.17
Feb. 19, 1924	42.99	Aug. 18	90.56	May 23, 1941	63.21
Aug. 28	45.57	Nov. 18	91.99	Nov. 17	62.31
Nov. 26	46.02	Feb. 23, 1933	91.14	Feb. 24, 1942	59.61
May 14, 1925	47.45	June 8	91.98	May 22	58.03
Aug. 26	50.81	Aug. 15	96.07	Aug. 14	58.69
Oct. 23	51.96	Feb. 13, 1934	94.43	Nov. 24	58.36
May 18, 1926	53.95	May 4	95.01	May 26, 1943	(e)
Oct. 18	58.86	Aug. 8	96.57	Aug. 16	(f)
Aug. 22, 1927	62.75	Feb. 18, 1935	96.95	June 20, 1944	47.18
Feb. 27, 1928	64.64	May 22	96.33	Aug. 23	47.73
May 3	65.90	Aug. 27	98.01	Nov. 18	47.45
Aug. 13	68.99				

a Dry at about 102 feet.

c Dry at obstruction at 101 feet.

e Caved at about 54 feet.

b Dry..

d Dry at obstruction at about 8.6 feet.

f Wet ground at 54 feet.

1N/4-36E1 (See Water-Supply Papers 142, p. 110, well 317; 468, p. 98, well 100a). George M. Cooley. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 1 N., R. 4 W., 125 feet west of Del Rosa Avenue extended and 2,100 feet south of Highland Avenue. Unused irrigation well, diameter 11 inches, depth 80 feet. Measuring point, top of casing, 0.3 foot above land-surface datum. Altitude of land surface about 1,145 feet.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
Feb. 23, 1921	35.42	Aug. 13, 1928	50.50	May 5, 1936	70.76
May 14	36.1	Nov. 21	51.62	Aug. 21	74.15
Oct. 7	40.1	May 10, 1929	52.36	May 12, 1937	69.41
Mar. 27, 1922	35.56	Nov. 8	57.23	Sept. 14	67.49
May 24	34.10	Feb. 21, 1930	56.97	Nov. 16	64.72
Aug. 21	35.02	June 5	58.22	Feb. 24, 1938	61.40
Oct. 24	35.47	July 29	59.22	May 17, 1939	51.92
Mar. 27, 1923	33.48	Dec. 2	59.60	Feb. 8, 1940	51.99
May 21	33.85	Feb. 18, 1931	59.07	May 17	51.90
Aug. 24	37.63	June 8	61.03	Aug. 30	53.63
Nov. 20	36.73	Aug. 6	63.17	Nov. 14	53.19
Feb. 19, 1924	35.86	Nov. 18	63.22	May 23, 1941	48.41
Aug. 25	41.29	Mar. 10, 1932	62.07	Nov. 17	45.72
Nov. 26	40.66	Aug. 18	64.04	Feb. 24, 1942	43.70
May 11, 1925	41.70	Nov. 18	63.86	May 22	44.71
Aug. 31	45.93	Feb. 24, 1933	62.32	Aug. 14	45.47
Oct. 23	45.68	June 8	63.52	Nov. 24	46.37
May 18, 1926	43.04	Feb. 13, 1934	66.87	May 26, 1943	44.39
Oct. 11	48.00	May 4	66.82	Aug. 16	45.46
June 1, 1927	46.62	Aug. 8	72.11	Nov. 24	44.59
Aug. 22	48.27	Feb. 18, 1935	68.67	Feb. 8, 1944	42.57
Nov. 3	47.87	May 20	68.76	June 20	41.90
Feb. 27, 1928	45.76	Aug. 27	71.36	Aug. 23	43.88
May 3	48.03	Nov. 27	71.46	Nov. 18	43.30

1S/3-3N1. Previously known as "T" well. R. C. Gerber. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 3, T. 1 S., R. 3 W., 600 feet north of 3d Street and 25 feet west of Webster Street, north of Redlands. Unused irrigation well, diameter 16 inches, depth 182 feet. Measuring point, top of casing, 2.0 feet above land-surface datum, and 1,266.46 feet above sea level. (San Bernardino Water Dept. levels).

Water level, in feet below land-surface datum, 1920-44

May 15, 1920	52.35	Nov. 20, 1928	92.89	May 4, 1934	120.66
Aug. 24	64.65	May 10, 1929	92.10	Feb. 18, 1935	(a)
Oct. 27	61.25	Sept. 3	98.26	May 20	125.95
Feb. 23, 1921	66.52	Nov. 9	102.17	Aug. 27	(a)
May 16	62.00	Feb. 21, 1930	105.36	May 5, 1936	(a)
July 14	63.50	June 4	99.07	May 12, 1937	88.87
Nov. 9	70.20	July 29	102.08	Sept. 14	92.18
Mar. 22, 1922	48.30	Dec. 19	110.42	Nov. 16	95.66
May 24	37.41	Mar. 4, 1931	109.26	Feb. 24, 1938	95.32
Aug. 21	37.48	June 10	110.98	May 17, 1939	68.77
Oct. 25	40.05	Aug. 24	116.08	Feb. 8, 1940	76.45
Mar. 19, 1923	38.92	Nov. 19	124.92	May 17	78.76
June 5	44.01	Mar. 10, 1932	112.52	Aug. 29	102.6
Aug. 24	49.13	11	112.68	Nov. 14	102.75
Nov. 20	50.97	25	109.05	Feb. 27, 1941	100.30
Feb. 19, 1924	58.14	29	108.23	May 23	65.82
Aug. 20	64.20	Apr. 6	106.70	Nov. 17	75.37
Nov. 21	67.05	8	106.41	Feb. 26, 1942	69.80
May 21, 1925	73.16	12	105.78	May 22	70.80
Aug. 31	78.13	15	105.27	Aug. 14	76.22
Oct. 23	80.40	21	104.80	Nov. 24	81.74
May 26, 1926	81.31	May 18	101.53	May 26, 1943	71.07
Oct. 5	84.62	Aug. 18	102.88	Aug. 16	74.39
Aug. 27, 1927	75.28	Nov. 18	108.82	Feb. 7, 1944	76.82
Nov. 4	79.80	Feb. 20, 1933	108.71	June 20	72.39
Mar. 8, 1928	77.13	June 7	108.10	Aug. 24	75.84
May 3	79.42	Aug. 15	112.99	Nov. 18	78.53
Aug. 13	87.29	Feb. 12, 1934	117.01		

a Dry.

1S/3-16L1 (See Water Supply Papers 142, p. 92, well 117; 468, p. 107, well 117). S. Ronzone. NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T. 1 S., R. 3 W., 250 feet north of Pioneer Street and 75 feet west of Buckeye Street, northwest of Redlands. Abandoned domestic well, diameter 9 inches, depth 98 feet when drilled in 1899. Measuring point, top of 3/4-inch pipe flush with top of casing, 0.6 foot above land-surface datum, and 1,254.75 feet above sea level (Riverside Water Basin Association levels, referred to U. S. C. and G. S. datum).

Water level, in feet below land-surface datum, 1921-33, 1940-44

Date	Water level	Date	Water level	Date	Water level
Feb. 23, 1921	49.5	May 19, 1926	62.46	Mar. 10, 1932	(a)
May 16	52.9	Nov. 1	72.50	Feb. 20, 1933	(b)
July 14	55.9	June 17, 1927	64.07	May 17, 1940	64.20
Oct. 3	57.2	Aug. 27	69.35	Nov. 14	74.15
Mar. 27, 1922	43.70	Nov. 4	68.12	May 23, 1941	58.11
May 24	45.21	Mar. 16, 1928	60.88	Nov. 17	62.20
Aug. 21	43.43	May 3	71.29	Feb. 24, 1942	58.00
Oct. 25	41.97	Aug. 13	79.68	May 22	62.92
Mar. 22, 1923	36.65	Nov. 20	79.40	Aug. 14	70.76
May 22	39.25	May 22, 1929	75.82	Nov. 24	72.07
Aug. 24	43.92	Sept. 3	89.2	May 26, 1943	64.09
Nov. 21	42.00	Nov. 11	89.18	Aug. 14	69.36
Feb. 19, 1924	45.10	Feb. 21, 1930	85.50	Nov. 24	69.88
Aug. 28	52.42	June 4	81.44	Jan. 1, 1944	64.88
Nov. 28	52.86	July 29	89.52	Feb. 7	62.02
May 13, 1925	59.55	Feb. 18, 1931	87.85	June 20	64.57
Aug. 31	67.08	June 10	(a)	Aug. 23	70.45
Oct. 28	63.60	Nov. 19	(b)	Nov. 18	67.53

a Dry at 92.4 feet.

b Dry.

1S/3-17C1. Known as Williams Well. (*817, pp. 12-16; 840, p. 30; 845, pp. 18-19; 886, p. 24; 911, pp. 119-120; 941, pp. 91-92; 949, pp. 65-66; *991, p. 131). Records furnished by Gage Canal Co.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	15.28	Apr. 8	6.95	July 8	15.03	Oct. 7	20.86
8	14.70	15	7.62	15	15.70	14	20.53
15	14.28	22	8.62	22	16.62	21	20.53
22	14.03	29	9.62	29	17.28	28	20.53
29	13.86	May 7	8.95	Aug. 5	17.28	Nov. 4	20.45
Feb. 5	13.45	13	9.78	12	17.70	11	19.86
12	13.03	20	10.36	19	18.70	18	16.03
19	12.62	27	11.45	26	19.28	25	14.20
26	11.03	June 3	11.70	Sept. 2	19.62	Dec. 2	13.70
Mar. 3	8.86	10	12.28	9	19.78	9	13.62
11	7.63	17	13.28	16	20.20	16	13.45
18	6.70	24	13.86	23	20.36	23	13.45
25	6.28	July 1	14.20	30	20.78	30	13.53
Apr. 1	6.36						

1S/3-20B1 (See Water-Supply Papers 142, p. 93, well 124; 468, p. 108, well 119). Emmet Martin. Key well U. S. 101. NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 1 S., R. 3 W., 200 feet north of Almond Street and 1,000 feet east of Nevada Street, northwest of Redlands. Abandoned domestic well, diameter 7 inches, depth 93 feet when bored in 1893. Measuring point, top of casing, 1.6 feet above land-surface datum, and 1,205.84 feet above sea level (Riverside Water Basin Association levels referred to U. S. C. and G. S. datum).

1S/3-20B1. Emmet Martin--Continued.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
Feb. 23, 1921	25.33	Dec. 3, 1930	52.55	May 22, 1942	41.55
May 16	30.1	Feb. 18, 1931	53.80	Aug. 14	42.68
July 14	33.5	June 10	56.17	Oct. 1	42.48
Oct. 3	27.7	Aug. 24	58.50	Nov. 24	42.26
Mar. 27, 1922	25.72	Nov. 19	60.30	Nov. 28	42.10
May 24	24.76	Mar. 10, 1932	63.12	Nov. 30	42.02
Aug. 21	23.12	Aug. 26	61.40	Jan. 1, 1943	41.88
Oct. 25	24.98	Nov. 18	61.45	Feb. 2	41.59
Mar. 22, 1923	21.62	Feb. 20, 1933	60.58	Mar. 1	40.75
May 22	20.96	June 7	61.87	Apr. 1	39.88
Aug. 24	21.47	Aug. 15	65.70	May 1	38.98
Nov. 21	20.30	Feb. 12, 1934	65.10	June 2	39.58
Feb. 19, 1924	21.29	May 4	66.34	July 1	39.86
Aug. 28	23.30	Aug. 8	69.50	31	39.94
Nov. 28	23.90	Feb. 18, 1935	71.32	Aug. 14	39.90
May 13, 1925	26.55	May 20	71.43	Sept. 1	39.92
Aug. 31	28.83	Aug. 27	74.08	Oct. 1	40.02
Oct. 28	29.32	Nov. 27	75.30	Nov. 1	40.02
May 19, 1926	33.55	May 5, 1936	75.06	Dec. 1	39.66
Nov. 1	34.56	Aug. 21	77.21	Jan. 1, 1944	39.06
June 17, 1927	36.40	May 12, 1937	72.57	Feb. 1	38.62
Aug. 27	36.02	Sept. 14	69.88	Mar. 1	38.20
Nov. 4	35.30	Nov. 16	68.51	Apr. 1	37.90
Mar. 16, 1928	35.15	Feb. 24, 1938	65.43	May 1	38.19
May 3	37.25	May 17, 1939	51.32	June 1	38.51
Aug. 13	44.30	Feb. 8, 1940	49.28	July 1	38.54
Nov. 20	40.62	May 17	49.84	Aug. 1	38.54
May 22, 1929	47.02	Aug. 29	50.56	23	38.72
Sept. 3	45.92	Nov. 14	51.35	Sept. 1	38.79
Nov. 11	46.75	May 23, 1941	46.12	30	38.95
Feb. 21, 1930	47.62	Nov. 17	42.68	Nov. 1	38.78
June 4	50.35	Feb. 24, 1942	41.18	Dec. 1	37.69
July 29	55.72				

1S/3-28E1. (See Water-Supply Papers 142, p. 91, well 94; 468, p. 110; well 122). George Hinckley. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 28, T. 1 S., R. 3 W., 213 feet south of centerline of Park Street and 680 feet east of centerline of Alabama Street. Unused domestic well, diameter 7 inches, depth 122 feet when sunk in 1891. Measuring point, top of casing, 2.0 feet above land-surface datum, and 1,245.60 feet above sea level (Riverside Water Basin Association levels referred to U. S. C. and G. S. datum).

Water level, in feet below land-surface datum, 1921-1944

Feb. 24, 1921	30.14	Aug. 27, 1927	44.73	June 7, 1933	70.90
May 28	31.00	Nov. 4	44.62	Aug. 15	73.78
July 14	31.6	Mar. 16, 1928	43.92	Feb. 12, 1934	75.25
Oct. 3	32.5	May 15	46.58	May 4	77.01
Mar. 27, 1922	30.78	Aug. 13	49.06	Aug. 8	80.10
May 24	29.84	Nov. 20	50.40	Feb. 18, 1935	81.60
Aug. 21	28.32	May 10, 1929	53.06	May 20	81.73
Oct. 25	27.26	Sept. 3	58.83	Aug. 27	83.74
Mar. 22, 1923	25.95	Nov. 11	61.05	Nov. 27	84.08
June 5	25.24	Feb. 26, 1930	59.79	May 5, 1936	83.08
Aug. 24	25.08	June 4	60.91	Aug. 21	84.96
Nov. 21	24.97	July 28	63.59	May 12, 1937	79.36
Feb. 25, 1924	25.75	Dec. 3	65.29	Sept. 14	77.62
Aug. 28	27.58	Feb. 18, 1931	65.12	Nov. 16	76.46
Nov. 28	28.90	June 10	69.72	Feb. 24, 1938	73.42
May 13, 1925	31.59	Aug. 24	71.78	May 17, 1939	61.45
Aug. 31	34.18	Nov. 19	72.57	Feb. 8, 1940	57.48
Oct. 28	35.18	Mar. 10, 1932	72.08	May 17	56.35
May 19, 1926	38.57	Aug. 26	73.72	Aug. 29	58.11
Nov. 1	43.10	Nov. 16	73.70	Nov. 14	57.10
June 17, 1927	44.94	Feb. 20, 1933	70.74	May 23, 1941	50.77

1S/3-28E1. George Hinckley--Continued.

Water level, in feet below land-surface datum, 1921-1944

Date	Water level	Date	Water level	Date	Water level
Nov. 17, 1941	47.34	May 26, 1943	43.88	Feb. 7, 1944	40.75
Feb. 24, 1942	44.97	Aug. 14	43.04	June 20	40.67
May 22	46.37	Nov. 24	41.95	Aug. 23	40.82
Aug. 14	47.10	Jan. 1, 1944	41.00	Nov. 18	39.72
Nov. 24	47.45				

1S/3-29K1 (See Water-Supply Papers 142, p. 91, well 83; 468, p. 111, well 124). J. Yount. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 29, T. 1 S., R. 3 W., 190 feet east of centerline of Nevada Street and 310 feet south of centerline of Citrus Avenue. Unused domestic well, diameter 7 inches, depth 109 feet when bored in 1890. Measuring point, top of 3/4-inch coupling, 0.7 foot above land-surface datum, and 1,202.69 feet above sea level (Riverside Water Basin Association levels referred to U. S. C. and G. S. datum).

Water level, in feet below land-surface datum, 1921-37, 1940-44

Feb. 24, 1921	19.12	Aug. 13, 1928	37.69	Aug. 8, 1934	(a)
May 2	19.40	Nov. 20	39.15	May 20, 1935	(b)
July 14	20.2	May 10, 1929	40.31	May 5, 1936	(b)
Oct. 3	21.3	Sept. 3	44.63	May 12, 1937	(c)
Mar. 27, 1922	19.63	Nov. 11	46.10	Feb. 8, 1940	54.53
Aug. 21	17.81	Feb. 26, 1930	46.55	May 17	53.17
Oct. 25	17.58	June 4	47.42	Aug. 29	54.73
Mar. 22, 1923	16.60	July 28	49.71	Nov. 14	54.13
Nov. 21	17.00	Dec. 3	52.39	May 23, 1941	47.90
Feb. 25, 1924	16.45	Feb. 18, 1931	51.85	Nov. 17	45.48
Aug. 26	19.28	June 10	54.84	Feb. 24, 1942	41.31
Nov. 28	19.30	Aug. 24	58.21	May 22	42.18
May 13, 1925	21.30	Nov. 19	59.90	Aug. 14	43.40
Aug. 31	24.32	Mar. 10, 1932	58.52	Nov. 24	43.56
Oct. 28	24.94	Aug. 26	61.64	May 26, 1943	39.47
May 19, 1926	26.20	Nov. 18	62.92	Aug. 14	39.37
Nov. 1	30.22	Feb. 20, 1933	60.20	Nov. 24	38.80
June 17, 1927	31.27	June 7	62.92	Feb. 7, 1944	37.01
Aug. 27	33.54	Aug. 15	63.69	June 20	35.23
Nov. 4	33.87	Feb. 12, 1934	65.44	Aug. 25	35.36
Mar. 16, 1928	32.56	May 4	69.20	Nov. 18	34.99
May 15	34.49				

a Dry at 67 feet.

b Dry.

c Dry at 66 feet..

1S/3-32C1 (See Water Supply Papers 142, p. 90, well 56; 468, p. 112, well 125). William H. Martin. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 1 S., R. 3 W., 400 feet south of Barton Avenue and 150 feet west of Nevada Street, in north row of orange trees. Unused domestic well, diameter 7 inches, depth 112 feet when bored in 1893. Measuring point, top of casing, 1.8 feet above land-surface datum, and 1,217.94 feet above sea level (San Bernardino Water Dept. levels).

Water level, in feet below land-surface datum, 1921-44

Feb. 24, 1921	41.52	May 13, 1925	45.24	Nov. 11, 1929	69.22
May 28	42.00	Aug. 31	50.16	Feb. 26, 1930	63.38
July 14	42.9	Oct. 28	50.58	June 4	68.84
Oct. 3	44.8	May 19, 1926	50.63	July 28	70.80
Mar. 27, 1922	41.12	Nov. 1	55.05	Dec. 3	72.82
Aug. 21	38.97	June 17, 1927	54.02	Feb. 18, 1931	72.52
Oct. 25	39.12	Aug. 27	56.57	Mar. 4	72.35
Mar. 22, 1923	37.55	Nov. 4	57.60	June 10	73.72
June 5	38.22	Feb. 28, 1928	54.86	Aug. 24	74.60
Aug. 24	39.47	May 15	57.27	Nov. 19	76.92
Nov. 21	39.55	Aug. 13	60.91	Mar. 10, 1932	76.67
Feb. 25, 1924	39.65	Nov. 20	63.50	Aug. 26	78.40
Aug. 20	42.93	May 10, 1929	62.40	Nov. 18	78.08
Nov. 28	44.40	Sept. 3	68.12	Feb. 20, 1933	78.40

IS/3-32C1. William Martin--Continued.

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
June 7, 1933	78.18	May 12, 1937	89.25	Feb. 24, 1942	65.19
Aug. 15	79.44	Sept. 14	88.58	May 22	64.66
Feb. 12, 1934	80.20	Nov. 16	88.04	Aug. 14	67.19
May 4	80.79	Feb. 24, 1938	85.60	Nov. 24	67.70
Aug. 8	82.49	May 17, 1939	76.34	May 26, 1943	63.42
Feb. 18, 1935	84.36	Feb. 8, 1940	74.70	Aug. 14	65.58
May 20	84.55	May 17	73.04	Nov. 24	65.72
Aug. 27	86.39	Aug. 29	74.35	Feb. 7, 1944	62.78
Nov. 27	87.83	Nov. 14	74.41	June 20	60.97
May 5, 1936	90.58	May 23, 1941	69.93	Aug. 23	62.70
Aug. 21	92.23	Nov. 17	68.5	Nov. 18	62.82

IS/4-4K1. (See Water-Supply Paper 468, p. 117, well "A"). W. J. Walsh. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 4, T. 1 S., R. 4 W. At southwest corner of house at 731 West 7th Street, San Bernardino. Unused domestic well, diameter 2 inches, depth 158 feet. Measuring point, top of 1 $\frac{1}{2}$ -inch pipe bushing, 1.4 feet above land-surface datum, and 1,082.92 feet above sea level. (San Bernardino Water Dept. levels referred to U. S. G. S. datum).

Water level, in feet below land-surface datum, 1921-44

Date	Water level	Date	Water level	Date	Water level
June 1, 1921	5.10	Feb. 21, 1930	28.45	May 12, 1937	42.71
July 14	11.17	June 5	30.86	Sept. 14	45.83
Oct. 7	10.4	July 29	33.32	Nov. 16	43.35
Mar. 29, 1922	5.14	Dec. 2	32.50	Feb. 24, 1938	50.06
June 9	7.50	Feb. 18, 1931	31.35	May 17, 1939	33.18
Aug. 24	11.03	June 8	35.15	Feb. 8, 1940	25.55
Nov. 24	7.16	Aug. 25	38.55	May 17	26.70
Mar. 27, 1923	6.27	Nov. 18	36.66	Aug. 30	23.39
June 11	6.80	Mar. 10, 1932	35.86	Nov. 14	23.64
Nov. 26, 1924	6.39	Aug. 18	40.59	May 28, 1941	20.44
Aug. 26, 1925	12.98	Nov. 18	39.23	Nov. 17	16.94
Oct. 22	10.68	Feb. 23, 1933	35.48	Feb. 24, 1942	13.86
May 18, 1926	12.14	June 8	40.20	May 22	16.02
Oct. 15	17.28	Aug. 15	40.75	Aug. 14	17.42
June 17, 1927	18.08	Feb. 13, 1934	38.06	Nov. 24	14.23
Aug. 22	20.72	May 4	41.93	May 26, 1943	11.88
Feb. 27, 1928	13.06	Aug. 8	45.03	Aug. 16	13.80
May 3	22.20	Feb. 18, 1935	38.50	Nov. 24	10.58
Aug. 13	25.30	May 22	42.10	Feb. 7, 1944	6.98
Nov. 21	24.11	Aug. 27	45.28	June 20	9.00
May 10, 1929	26.54	May 5, 1936	43.82	Aug. 23	11.38
Aug. 30	30.60	Aug. 21	47.95	Nov. 18	6.27

San Diego County

San Luis Rey River Basin

10/3W-1 (*840, p. 35; 845, p. 42; 886, p. 27; 911, p. 123; 941, p. 94; 949, p. 73; *991, p. 131). On San Luis Rey Ranch. Water levels, in feet below land-surface datum, 1944: Jan. 18, 5.79; Apr. 3, 5.83; July 3, 7.05; Oct. 2, 6.32.

10/3W-1a (*840, p. 36; 845, p. 42; 886, p. 27; 911, p. 123; 941, p. 94; 949, p. 73; *991, p. 131). On San Luis Rey Ranch, 4 miles west of Pala. Water levels, in feet below land-surface datum, 1944: Jan. 18, 7.10; Apr. 3, 7.17; July 3, 7.40; Oct. 2, 7.48.

10/3W-1b (*840, p. 36; 845, p. 43; 886, p. 28; 911, p. 124; 941, p. 94; 949, p. 73; *991, p. 131). On San Luis Rey Ranch, 4 miles west of Pala. Water levels, in feet below land-surface datum, 1944: Jan. 18, 5.56; Apr. 3, 5.61; July 3, 5.84; Oct. 2, 5.93.

10/3W-1c (*886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 131). Fallbrook Public Utility District observation well. On San Luis Rey Ranch. Water levels, in feet below land-surface datum, 1944: Jan. 18, 6.13; Apr. 3, 6.22; July 3, 6.83; Oct. 2, 6.88.

10/3W-15 (*840, p. 35; 845, p. 42; 886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 132). On Gird Ranch, 2.5 miles east of Bonsall. Water levels, in feet below land-surface datum, 1944: Jan. 18, 3.83; Apr. 3, 3.94; July 3, 4.72; Oct. 2, 6.29.

10/3W-16 (*845, p. 42; 886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 132). Hart, Inc., 2 miles east of Bonsall. Water levels, in feet below land-surface datum, 1944: Jan. 18, 3.21; Apr. 3, 3.24; July 3, 3.82; Oct. 2, 5.56.

10/3W-20 (*840, p. 35; 845, p. 42; 886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 132). Bonsall School well. At Bonsall. Water levels, in feet below land-surface datum, 1944: Jan. 18, 7.71; Apr. 3, 7.36; July 3, 8.25; Oct. 2, 9.38.

10/3W-20a (*991, p. 132). Sickler Ranch. At Bonsall. Water levels, in feet below land-surface datum, 1944: Jan. 18, 15.00; Apr. 3, 14.27; July 3, 15.38; Oct. 2, 16.56.

10/3W-30 (*886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 132). Fallbrook Public Utility District observation well. On property of San Diego County Water Co. Water levels, in feet below land-surface datum, 1944: Jan. 18, 10.26; Apr. 3, 10.19; July 3, 10.80; Oct. 2, 11.48.

11/4W-5 (*886, p. 28; 911, p. 124; 941, p. 94; 949, p. 74; *991, p. 132). City of Oceanside observation well. On Stokes property, on north bank of San Luis Rey River, east of San Luis Rey. Measurements by city of Oceanside.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	6.91	May 8	6.40	Aug. 7	8.25	Oct. 9	11.86
Mar. 20	5.81	June 5	6.94	Sept. 11	9.40	Dec. 4	11.40
Apr. 10	6.10	July 10	8.20				

11/4W-5a (*845, p. 43; 886, p. 28; 911, p. 124; 941, p. 95; 949, p. 74; *991, p. 132). Santa Fe well. In pumphouse on right bank of San Luis Rey River, 0.1 mile west of Ashley School. Water levels, in feet below land-surface datum, 1944: Jan. 18, 9.51 (by Soil Conservation Service); Mar. 20, filled in (by city of Oceanside).

11/4W-8 (*886, p. 29; 911, p. 124; 941, p. 95; 949, pp. 74-75; *991, p. 133). Carlsbad Mutual Water Co. observation well. Near north abutment of county-road bridge at San Luis Rey. Measurements by Carlsbad Mutual Water Co. Water levels, in feet below land-surface datum, 1944: Jan. 18, 6.46; Apr. 3, 5.05; July 3, 7.30; Oct. 2, 9.52.

11/4W-9F1 (*911, p. 125; 941, p. 95; 949, p. 74; *991, p. 133). City of Oceanside observation well. On Williams Ranch. Measurements made by city of Oceanside.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	4.86	May 8	5.64	Aug. 7	8.43	Oct. 9	15.43
Mar. 20	3.60	June 5	5.43	Sept. 11	9.68	Dec. 4	9.43
Aug. 10	5.01	July 10	6.68				

11/4W-18 (*886, p. 29; 911, p. 125; 941, p. 95; 949, p. 75; *991, p. 133). Carlsbad Mutual Water Co. observation well. 0.25 mile east of Carlsbad Mutual Water Co.'s pumping plant near San Luis Rey. Measurements made by Carlsbad Mutual Water Co. Water levels, in feet below land-surface datum, 1944: Jan. 18, 9.92; Apr. 3, 13.30; July 3, 21.73; Oct. 2, 23.56.

11/5W-13a (*886, p. 29; 911, p. 125; 941, p. 95; 949, p. 75; *991, p. 133). City of Oceanside. On city property, about 2 miles northeast of Oceanside. Measurements made by city of Oceanside.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	5.28	May 8	11.42	Aug. 7	14.50	Oct. 9	14.50
Mar. 20	5.75	June 5	11.83	Sept. 11	7.83	Dec. 4	10.00
Apr. 10	10.39	July 10	12.83				

11/5W-13b (*886, p. 29; 911, p. 125; 941, p. 95; 949, p. 75; *991, p. 133). City of Oceanside. On city property, about 2 miles northeast of Oceanside. Measurements made by city of Oceanside.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	8.11	May 8	7.92	Aug. 7	11.83	Oct. 9	13.66
Mar. 20	7.12	June 5	9.25	Sept. 11	13.24	Dec. 4	11.75
Apr. 10	7.08	July 10	10.80				

11/5W-13c (*886, p. 29; 911, p. 125; 941, p. 95; 949, p. 75; *991, p. 133). City of Oceanside. On city property, about 2 miles northeast of Oceanside. Measurements made by city of Oceanside.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	6.53	May 8	11.00	Aug. 7	13.67	Oct. 9	14.33
Mar. 20	8.17	June 5	11.75	Sept. 11	14.00	Dec. 4	11.91
Apr. 10	10.50	July 10	12.74				

11/5W-15 (*886, p. 29; 911, p. 125; 941, p. 95; 949, p. 75; *991, p. 133). City of Oceanside. On city property north of Oceanside, 0.1 mile northwest of old brick pumping plant. Measurements made by city of Oceanside.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	2.08	May 8	4.04	Aug. 7	6.54	Oct. 9	7.04
Mar. 20	1.60	June 5	4.40	Sept. 11	6.87	Dec. 4	5.19
Apr. 10	3.67	July 10	5.60				

San Dieguito River Basin

12/1W-31a (*817, pp. 38-39; 845, p. 42; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 73; *991, p. 134). City of San Diego.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	3.65	June 7	3.82	Oct. 25	5.64
Mar. 30	2.95	Aug. 25	5.37	Dec. 7	4.14

12/1W-32 (*991, p. 134). County-road station.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	18.21	June 7	b18.61	Oct. 25	b18.87
Mar. 30	(a)	Aug. 25	b19.34	Dec. 7	18.70

a Pumping.

b Windmill pumping intermittently.

12/1W-33 (*840, p. 39; 845, p. 42; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 73; *991, p. 134). H. G. Fenton.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	10.60	June 7	11.52	Oct. 25	13.95
Mar. 30	10.42	Aug. 25	13.22	Dec. 7	13.10

12/1W-33a (*991, p. 134). W. H. Dyer.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	0.26	June 7	0.06	Oct. 25	3.95
Mar. 30	.00	Aug. 25	2.93	Dec. 7	.40

12/1W-35 (*840, p. 42; 845, p. 42; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 73; *991, p. 134). C. E. Christopher.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	5.16	June 7	(a)	Aug. 25	(a)	Dec. 7	(b)
Mar. 30	5.15	15	5.41	Oct. 25	(a)		

a Pumping.

b Well filled in.

San Diego River Basin

15/1E-2 (*845, p. 26; 886, p. 25; 911, p. 121; 941, p. 92; 949, p. 71; *991, p. 135). San Diego County. At El Monte Park.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	26.36	May 24	20.17	Sept. 18	27.54
Mar. 29	15.10	July 31	(a)	Nov. 27	28.39

a Pumping.

15/1E-7 (*845, p. 28; 886, p. 25; 911, p. 122; 941, p. 93; 949, p. 71; *991, p. 135). J. F. Rickerts.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	9.71	May 24	8.51	Sept. 18	9.60
Mar. 29	8.20	July 31	9.24	Nov. 27	9.38

15/1E-16 (*845, p. 26; 886, p. 25; 911, p. 121; 941, p. 92; 949, p. 71; *991, p. 135). Pratt test well.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	8.14	May 24	6.95	Sept. 18	9.36
Mar. 29	6.04	July 31	8.45	Nov. 27	9.37

15/1E-16a (*845, p. 26; 886, p. 25; 911, p. 121; 941, p. 92; 949, p. 71; *991, p. 135). Irrigation District well 6.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	6.52	May 24	4.82	Sept. 18	7.09
Mar. 29	3.94	July 31	6.13	Nov. 27	7.08

15/1E-17 (*845, p. 26; 886, p. 25; 911, p. 121; 941, p. 93; 949, p. 71; *991, p. 135). On Truttman Ranch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	7.51	May 24	6.01	Sept. 18	8.04
Mar. 29	5.72	July 31	7.25	Nov. 27	7.83

15/1E-17a (*845, p. 27; 886, p. 25; 911, p. 121; 941, p. 93; 949, p. 71; *991, p. 135). On Dr. Irely Ranch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	9.56	May 24	8.41	Sept. 18	10.23
Mar. 29	8.10	July 31	9.50	Nov. 27	9.77

15/1E-17b (*845, p. 27; 886, p. 25; 911, p. 121; 941, p. 93; 949, p. 71; *991, p. 135). In county yard east of Lakeside.

15/1E-17b--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	9.50	May 24	8.39	Sept. 18	10.16
Mar. 29	7.99	July 31	9.43	Nov. 27	9.68

15/1E-19 (*845, p. 32; 886, p. 26; 911, p. 122; 941, p. 35; 949, p. 71; *991, p. 136). Mr. Langdon. Near Benedict Avenue, in Lakeside.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	10.57	May 24	8.40	Sept. 18	11.23
Mar. 29	8.24	July 31	10.13	Nov. 30	11.54

15/1W-13 (*845, pp. 32-33; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 71; *991, p. 136). Mr. Levi.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	10.77	May 24	9.30	Sept. 18	12.91
Mar. 29	8.25	July 31	11.54	Nov. 30	12.29

15/1W-13N2 (*845, p. 34; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 136). Riverview well 3. At Riverview.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	3.82	May 24	2.70	Sept. 18	5.08
Mar. 29	2.03	July 31	4.06	Nov. 30	4.73

15/1W-23H2 (*845, p. 35; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 136). Riverview well 1. At Riverview.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	2.01	May 24	1.03	Sept. 18	2.80
Mar. 29	.56	July 31	2.11	Nov. 30	1.02

15/1W-24 (*845, p. 33; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 71-72; *991, p. 136). E. G. Squires. Formerly owned by Mr. Burch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	7.23	May 24	6.75	Sept. 18	7.50
Mar. 29	6.68	July 31	7.09	Nov. 30	7.41

15/1W-24D7 (*845, p. 33; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 136). Riverview well 2. At Riverview.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	2.42	May 24	2.95	Sept. 18	7.24
Mar. 29	1.79	July 31	5.59	Nov. 30	3.83

15/1W-27 (*845, p. 36; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 136). On County Farm, at Santee.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	6.44	May 24	5.49	Sept. 18	7.06
Mar. 29	4.98	July 31	6.33	Nov. 30	6.58

15/1W-28 (*845, p. 36; 886, p. 26; 911, p. 122; 941, p. 39; 949, p. 72; *991, p. 137). Dr. Good. On El Cajon land grant, at Santee.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	11.67	May 31	10.66	Sept. 18	13.96
Mar. 29	9.57	July 31	12.67	Nov. 29	(a)

a Well caved in.

16/2W-16 (*845, p. 37; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 137). Mr. Jaussaud. Near Grantville.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	11.95	May 31	a 17.92	Sept. 18	14.61
Mar. 29	11.28	July 31	14.06	Nov. 29	12.58

a Nearby well pumping.

16/2W-16a (*845, p. 38; 886, p. 26; 911, p. 122; 941, p. 93; 949, p. 72; *991, p. 137). Mr. Jaussaud. Near Grantville.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	12.03	May 31	(a)	Sept. 18	14.78
Mar. 29	11.38	July 31	14.16	Nov. 29	12.74

a Pumping.

16/3W-21 (*845, p. 40; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 73; *991, p. 137). Mr. Chapman. On Pueblo lands of San Diego, Old Town.

Water level, in feet below land-surface datum, 1944

Jan. 21	4.95	July 31	(a)	Nov. 29	5.32
May 31	5.49	Sept. 18	(a)		

a Dry.

16/3W-22 (*845, p. 39; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 72; *991, p. 137). Mr. Confar. On Pueblo lot 1119, on south side of Mission Valley.

Water level, in feet below land-surface datum, 1944

Jan. 21	10.45	May 31	11.54	Sept. 18	13.47
Mar. 29	9.39	July 31	12.78	Nov. 29	11.09

16/3W-23 (*845, p. 39; 886, p. 27; 911, p. 123; 941, p. 93; 949, p. 72; *991, p. 137). S. H. McIntosh. On Pueblo lot 1106, near Murray Canyon road in Mission Valley.

Water level, in feet below land-surface datum, 1944

Jan. 21	6.74	May 31	6.56	Sept. 18	8.13
Mar. 29	6.00	July 31	7.37	Nov. 29	5.74

16/3W-24 (*845, p. 38; 886, p. 26; 911, p. 123; 941, p. 93; 949, p. 72; *991, p. 137). R. I. Officer. On Pueblo lot 1110, 0.3 mile west of city of San Diego pumping plant, on south side of Mission Valley.

Water level, in feet below land-surface datum, 1944

Jan. 21	8.53	May 31	8.73	Sept. 18	9.45
Mar. 29	7.88	July 31	9.29	Nov. 29	8.30

Sweetwater River Basin

17/1W-19 (*845, p. 25; 886, p. 25; 911, p. 121; 941, p. 92; 949, p. 75; *991, p. 138). L. C. Kincaid. At Sunnyside.

Water level, in feet below land-surface datum, 1944

Jan. 26	9.28	June 2	9.71	Sept. 20	10.99
Mar. 28	8.27	July 21	10.22	Dec. 4	9.32

17/1W-19a (*991, p. 138). L. C. Kincaid. In river bed, 200 yards south of 17/1W-19.

Water level, in feet below land-surface datum, 1944

Jan. 26	4.67	June 2	5.17	Sept. 20	6.60
Mar. 28	3.72	July 21	5.96	Dec. 4	4.75

Otay River Basin

18/2W-22 (*845, p. 23; 886, p. 25; 911, p. 121; 941, p. 92; 949, pp. 70-71; *991, p. 138). G. W. St. Clair. At Otay.

Water level, in feet below land-surface datum, 1944

Jan. 26	20.49	June 2	21.33	Sept. 20	22.93
Mar. 28	21.46	July 21	22.84	Dec. 4	21.63

18/2W-22a (*845, p. 23; 886, p. 25; 911, p. 121; 941, p. 92; 949, p. 70; *991, p. 138). N. Bard. In Otay. Water levels, in feet below land-surface datum, 1944: Jan. 26, 29.04; Mar. 28, dry; June 2, dry; Dec. 4, 29.77.

Tia Juana River Basin

18/2W-33 (*845, p. 20; 886, p. 24; 911, p. 120; 941, p. 92, 949, p. 76; *991, p. 138). On Hewitt Bros. Hog Ranch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 26	7.02	June 2	8.24	Sept. 20	11.42
Mar. 28	5.20	July 21	9.80	Dec. 12	9.16

18/2W-34 (*845, p. 20; 886, p. 24; 911, p. 120; 941, p. 92; 949, p. 76; *991, p. 138). On Owens Ranch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 26	8.54	June 2	8.10	Sept. 20	10.74
Mar. 28	6.08	July 21	10.18	Dec. 12	10.31

18/2W-34a (*845, p. 21; 886, p. 25; 911, p. 120; 941, p. 92; 949, p. 76; *991, p. 139). On Evans Ranch, near San Ysidro.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 26	6.01	June 2	6.97	Sept. 20	7.58
Mar. 28	4.35	July 21	7.12	Dec. 12	6.73

19/2W-1 (*845, p. 22; 886, p. 25; 911, p. 120; 941, p. 92; 949, p. 76; *991, p. 139). Mrs. A. W. Jackson. At San Ysidro.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 26	3.29	June 2	4.45	Sept. 20	4.73
Mar. 28	3.48	July 21	4.75	Dec. 12	4.12

19/2W-4 (*845, p. 21; 886, p. 25; 911, p. 120; 941, p. 92; 949, p. 76; *991, p. 139). At Nestor Bridge.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 26	5.76	June 2	6.43	Sept. 20	6.95
Mar. 28	5.36	July 21	6.82	Dec. 12	6.64

San Joaquin County

Mokelumne River Basin

3N/6-3K3 (*840, p. 45; 845, p. 44; 886, p. 53; 911, p. 132; 941, p. 137; *949, p. 171; *991, p. 139). F. B. Mills.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	14.00	Apr. 1	16.29	July 1	15.00	Oct. 2	15.59
Feb. 1	14.56	June 1	17.27	Aug. 1	15.79	Dec. 1	13.79
Mar. 1	14.72						

3N/6-17D1 (*840, p. 45; 845, p. 44; 886, p. 53; 911, p. 132; 941, p. 137; *949, p. 172; *991, p. 139). Otto Helmle.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	12.64	Apr. 1	10.94	July 1	13.83	Oct. 3	16.03
Feb. 1	12.32	May 1	10.61	Aug. 1	16.05	Nov. 1	15.02
Mar. 1	11.50	June 1	10.78	Sept. 2	17.54	Dec. 1	13.78

3N/6-36R2 (*619, p. 311; *777, p. 28; *817, p. 18; 840, p. 46; 845, p. 44; 886, p. 53; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 139). Leland W. Bunch.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	17.18	Apr. 1	16.33	July 1	18.19	Oct. 6	19.72
Feb. 1	17.24	May 1	15.74	Aug. 1	19.25	Nov. 1	19.28
Mar. 1	15.35	June 1	17.22	Sept. 2	19.15	Dec. 1	19.01

3N/7-3C1 (*777, p. 28; *817, p. 18; 840, p. 46; 845, p. 44; 886, p. 53; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 139). Jacob Knoll.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	33.58	Apr. 1	34.07	July 1	33.32	Oct. 9	35.45
Feb. 1	33.71	May 1	31.93	Aug. 1	33.57	Nov. 1	35.72
Mar. 1	34.09	June 1	31.39	Sept. 2	34.77	Dec. 1	35.80

3N/7-6M8 (*777, p. 28; *817, p. 18; 840, p. 46; 845, p. 44; 886, p. 53; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 140). R. E. and Ruth F. Coker.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	20.73	Apr. 1	20.40	July 1	22.02	Oct. 6	22.95
Feb. 1	20.78	May 1	21.84	Aug. 1	22.44	Nov. 1	22.70
Mar. 1	20.77	June 1	22.42	Sept. 2	22.85	Dec. 1	22.50

3N/7-7M1 (*777, p. 29; *817, p. 19; 840, p. 46; 845, p. 45; 886, p. 54; 911, p. 133; *941, p. 138; *949, p. 172; *991, p. 140). J. and Rachel Goetken.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	26.17	May 1	30.81	Aug. 1	31.97	Nov. 1	28.98
Feb. 1	26.19	June 1	30.74	Oct. 6	29.97	Dec. 1	28.52
Mar. 1	26.38						

3N/7-10I3 (*777, p. 29; *817, p. 19; 840, p. 46; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 140). Edward Preszler.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	36.15	Apr. 1	43.19	July 1	45.43	Oct. 9	41.95
Feb. 1	37.57	May 1	a 49.83	Aug. 1	44.38	Nov. 1	40.86
Mar. 1	38.53	June 1	46.88	Sept. 2	44.27	Dec. 1	39.59

a Adjacent well pumping.

3N/7-10L4 (*777, p. 29; *817, p. 19; *840, p. 46; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 140). Edward Preszler.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	35.55	Apr. 1	45.06	Aug. 1	43.76	Nov. 1	39.82
Feb. 1	37.24	June 1	43.95	Sept. 2	44.38	Dec. 1	38.61
Mar. 1	38.58	July 1	43.97	Oct. 9	41.06		

3N/7-15P2 (*777, p. 29; *817, p. 19; 840, p. 47; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 138; *949, p. 172; *991, p. 140). Eugene R. Hieb.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	36.96	Apr. 1	a 37.12	July 1	a 43.55	Oct. 9	43.29
Feb. 1	36.49	May 1	43.58	Aug. 1	44.27	Nov. 1	42.04
Mar. 1	36.35	June 1	a 42.88	Sept. 2	44.82	Dec. 1	40.99

a Adjacent well pumping.

3N/7-19D2 (*777, p. 30; *817, p. 19; 840, p. 47; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 133; *949, p. 173; *991, p. 140). C. M. Ferdun.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	25.82	Apr. 1	26.24	July 1	30.46	Oct. 6	30.94
Feb. 1	25.37	May 1	26.08	Aug. 1	32.87	Nov. 1	30.14
Mar. 1	25.20	June 1	30.01	Sept. 2	31.38	Dec. 1	29.25

3N/7-27F3 (*777, p. 30; *817, p. 20; 840, p. 47; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 139; *949, p. 173; *991, p. 141). John F. Heitzmann.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	33.92	Apr. 1	32.65	July 1	a 38.99	Oct. 9	40.17
Feb. 1	33.26	May 1	33.32	Aug. 1	38.85	Nov. 1	39.18
Mar. 1	32.83	June 1	34.61	Sept. 2	a 40.50	Dec. 1	37.58

a Adjacent well pumping.

3N/7-30E2 (*619; 322; *777, p. 30; *817, p. 20; 840, p. 47; 845, p. 45; 886, p. 54; 911, p. 133; 941, p. 139; *949, p. 173; *991, p. 141). W. L. Flanigan.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	20.32	May 1	20.30	Sept. 2	30.21	Nov. 1	24.66
Feb. 1	a 20.28	June 1	26.19	Oct. 6	26.70	Dec. 1	23.50
Apr. 1	20.79	Aug. 1	a 26.99				

a Pumping prior to measurement.

4N/6-12R1 (*619, p. 337; *777, p. 31; *817, p. 20; 840, p. 47; 845, p. 46; 886, p. 54; 911, p. 134; 941, p. 139; *949, p. 173; *991, p. 141). G. A. Jahant.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	27.30	Apr. 1	26.12	July 1	26.59	Oct. 5	33.58
Feb. 1	26.58	May 1	25.87	Aug. 1	32.85	Nov. 1	33.29
Mar. 1	25.87	June 1	28.12	Sept. 2	34.12	Dec. 1	32.21

4N/6-34R1 (*619, p. 344; *777, p. 31; *817, p. 20; *840, p. 47; 845, p. 46; 886, p. 55; 911, p. 134; *941, p. 139; *949, p. 173; *991, p. 141). E. M. Smith.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	12.30	Apr. 1	a 14.44	July 1	14.62	Oct. 3	(b)
Feb. 1	12.90	May 1	a 13.17	Aug. 1	a 16.05	Nov. 1	a 13.04
Mar. 1	13.43	June 1	a 13.91	Sept. 2	a 15.85	Dec. 1	15.40

a Adjacent well pumping.

b Dry.

4N/6-36D1 (*619, p. 345; *777, p. 31; *817, p. 20; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 139; *949, p. 173; *991, p. 141). D. D. Smith and S. H. and I. Zimmerman.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	18.81	Apr. 1	20.73	July 1	21.76	Oct. 6	20.03
Feb. 1	19.08	May 1	a 26.58	Aug. 1	20.66	Nov. 1	19.62
Mar. 1	18.95	June 1	21.71	Sept. 2	20.86	Dec. 1	20.98

a Adjacent well pumping.

4N/7-15B3 (*777, p. 32; *817, p. 21; 840, p. 38; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 139; 949, p. 174; *991, p. 141). Robert L. Carter.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	47.10	Apr. 1	46.12	July 1	49.56	Oct. 10	51.20
Feb. 1	46.63	May 1	46.50	Aug. 1	51.10	Nov. 1	51.13
Mar. 1	46.19	June 1	45.82	Sept. 2	51.88	Dec. 1	50.35

4N/7-18N3 (*777, p. 32; *817, p. 21; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 139; *949, p. 174; *991, p. 142). Martha Eddlemon.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	29.31	Apr. 1	28.30	July 1	37.30	Oct. 5	36.28
Feb. 1	28.74	May 1	31.22	Aug. 1	39.09	Nov. 1	34.93
Mar. 1	28.28	June 1	31.58	Sept. 2	38.77	Dec. 1	33.79

4N/7-22Q4 (*777, p. 32; *817, p. 21; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 139; *949, p. 174; *991, p. 142). Adolphus Eddlemon.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	37.52	Apr. 1	37.40	July 1	41.70	Oct. 10	41.05
Feb. 1	37.29	May 1	38.74	Aug. 1	40.43	Nov. 1	41.24
Mar. 1	37.17	June 1	40.38	Sept. 2	42.64	Dec. 1	40.85

4N/7-22Q5 (*777, p. 32; *817, p. 21; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 174; *991, p. 142). Adolphus Eddlemon.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	37.90	Apr. 1	39.58	July 1	49.35	Oct. 10	43.16
Feb. 1	37.79	May 1	42.46	Aug. 1	47.27	Nov. 1	41.99
Mar. 1	37.95	June 1	47.55	Sept. 2	45.46	Dec. 1	41.68

4N/7-27P1 (*777, p. 33; *817, p. 21; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 140; *949, p. 174; *991, p. 142). Frank H. and Leonard W. Buck.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	32.36	Apr. 1	32.73	July 1	33.55	Oct. 10	34.53
Feb. 1	32.46	May 1	32.96	Aug. 1	34.28	Nov. 1	34.41
Mar. 1	32.45	June 1	32.88	Sept. 2	34.38	Dec. 1	33.76

4N/7-30M2 (*777, p. 33; *817, p. 22; 840, p. 48; 845, p. 46; 886, p. 55; 911, p. 134; 941, p. 140; *949, p. 174; *991, p. 142). Clara A. Barton.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	26.43	Apr. 1	27.20	July 1	33.58	Oct. 5	31.34
Feb. 1	26.16	May 1	35.95	Aug. 1	33.70	Nov. 1	30.43
Mar. 1	25.99	June 1	32.65	Sept. 2	33.25	Dec. 1	29.89

4N/7-31M3 (*777, p. 33; *817, p. 22; *840, p. 49; *845, p. 47; 886, p. 55; 911, p. 135; 941, p. 140; *949, p. 174; *991, p. 142). Charles H. Woest.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	22.95	Apr. 1	a 25.32	July 1	24.08	Oct. 6	23.64
Feb. 1	23.54	May 1	25.68	Aug. 1	24.21	Nov. 1	23.59
Mar. 1	23.12	June 1	27.06	Sept. 2	23.65	Dec. 1	24.43

a Pumping prior to measurement.

4N/7-31N5 (*777, p. 33; *817, p. 22; 840, p. 49; 845, p. 47; 886, p. 55; 911, p. 135; 941, p. 140; 949, p. 175; *991, p. 142). Jacob Goehring.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	8.80	Apr. 1	8.67	June 2	4.94	Oct. 6	7.70
Feb. 1	9.50	May 1	6.54	Aug. 1	7.40	Nov. 1	7.88
Mar. 1	9.30	June 1	7.20	Sept. 2	7.34	Dec. 1	9.71

4N/7-34G1 (*777, p. 34; 817, p. 22; 840, p. 49; 845, p. 47; 886, p. 55; 911, p. 135; 941, p. 140; *949, p. 175; *991, p. 143). John J. Schmiedt.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	8.09	May 1	8.36	Aug. 1	8.42	Nov. 1	9.40
Feb. 1	8.85	June 1	8.61	Sept. 2	8.34	Dec. 1	8.89
Apr. 1	8.80	July 1	a 7.87	Oct. 9	9.44		

a Adjacent land flooded.

Santa Barbara CountyCarpinteria Basin

4/25-19F4 (*949, p. 189; *991, p. 143). M. F. Lewis.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	92.72	May 3	82.79	Aug. 1	88.52	Oct. 30	96.59
Mar. 2	89.54	June 3	82.38	28	91.40	Nov. 27	95.82
Apr. 6	84.37	July 3	85.86	Sept. 25	94.20	Dec. 31	92.80

4/25-19J5 (*949, p. 190; *991, p. 143). Lyman & Young.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	55.74	May 3	47.16	Aug. 28 b	61.32	Nov. 27 b	58.65
Mar. 2	50.96	June 3 a	51.09	Oct. 30 b	62.93	Dec. 31	55.11
Apr. 6	47.08	July 3	52.92				

a Nearby well pumping.

b Below mean sea level.

4/25-20Q2 (*949, p. 190; *991, p. 143). J. B. Romero.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	33.88	May 3	28.30	Aug. 1 a	38.00	Oct. 30 ab	63.79
Mar. 2	29.33	June 3	27.38	28 ab	43.43	Nov. 27	36.93
Apr. 6	25.80	July 3 a	35.91	Sept. 25 b	41.01	Dec. 31	34.07

a Nearby well pumping.

b Below mean sea level.

4/25-21N2 (*941, p. 162; *949, p. 190; *991, p. 143). E. S. Pillsbury.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	36.08	July 3 a	53.53	Sept. 25 a	52.40	Nov. 27	41.92
Apr. 6	34.00	Aug. 28 a	53.45	Oct. 30 a	55.06	Dec. 31	38.62
May 3 a	53.38						

a Below mean sea level.

4/25-21R1 (*949, p. 190; *991, p. 144). B. Moore.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	74.10	May 3	67.02	Aug. 1	68.05	Oct. 30	72.63
Mar. 2	72.20	June 3	66.08	28	69.80	Nov. 27	71.80
Apr. 6	68.79	July 3	67.68	Sept. 25	71.05	Dec. 31	71.42

4/25-22R1 (*941, p. 162; *949, p. 191; *991, p. 144). A. H. Young.

Water levels, in feet below land-surface datum, 1944: Jan. 27, 16.39; Mar. 2, 12.42; Apr. 6, 11.26. Measurements discontinued.

4/25-27J1 (*941, p. 163; *949, p. 191; *991, p. 144). J. Rock.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	126.39	May 3	115.28	Aug. 1	118.89	Nov. 27	124.78
Mar. 2	123.10	June 3	113.97	Sept. 25	124.72	Dec. 31	121.43
Apr. 6	117.80	July 3	117.90	Oct. 30	127.42		

4/25-27P3 (*949, p. 191; *991, p. 144). C. B. Franklin. Measurements discontinued after June 3.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	108.68	Apr. 6	97.30	June 3	97.74
Mar. 2	104.52	May 3	96.46		

4/25-27Q1 (*949, p. 192; *991, p. 144). F. G. McCloskey. Measurements discontinued after June 3.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 27	116.28	Apr. 6	104.30	June 3	102.79
Mar. 2	111.63	May 3	104.42		

4/25-27Q2 (*941, p. 162; *949, p. 192; *991, p. 144). A. F. Heimlich.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	112.22	May 3	99.12	Aug. 1	106.28	Oct. 30	a 114.46
Mar. 2	107.62	June 3	98.52	28	110.48	Nov. 27	109.91
Apr. 6	99.30	July 3	104.78	Sept. 25	111.83	Dec. 31	105.75

a Nearby well pumping.

4/25-27R2 (*949, p. 193; *991, p. 145). W. H. Yule.

Water level, in feet below land-surface datum, 1944

Jan. 27	111.99	Apr. 6	102.40	June 3	a 139.75	Nov. 27	110.52
Mar. 2	108.58	May 3	101.11	Aug. 1	108.12	Dec. 31	106.90

a Below mean sea level.

4/25-28J1 (*949, p. 193; *991, p. 145). W. C. and C. A. Catlin.

Water level, in feet below land-surface datum, 1944

Jan. 27	68.74	May 3	57.93	Sept. 25	74.64	Nov. 27	67.73
Mar. 2	64.51	Aug. 1	68.67	Oct. 30	74.35	Dec. 31	64.42
Apr. 6	58.67	28	78.59				

4/25-28M1 (*941, p. 163; *949, p. 193; *991, p. 145). Mrs. A. Baylor.

Water level, in feet below land-surface datum, 1944

Jan. 27	33.02	May 3	24.53	Aug. 1	38.34	Oct. 30	a 44.46
Mar. 2	29.32	June 3	a 34.28	28	a 51.60	Nov. 27	33.04
Apr. 6	24.80	July 3	a 46.27	Sept. 25	a 43.28	Dec. 31	29.68

a Nearby well pumping.

4/25-29A3 (*949, p. 194; *991, p. 145). M. Young.

Water level, in feet below land-surface datum, 1944

Jan. 27	18.73	May 3	27.53	Aug. 28	b 35.55	Nov. 27	21.21
Mar. 2	13.94	July 3	30.02	Sept. 25	b 35.57	Dec. 31	17.41
Apr. 6	11.70	Aug. 1	ab 47.51	Oct. 30	ab 42.83		

a Nearby well pumping.

b Below mean sea level.

4/25-29D1 (*949, p. 194; *991, p. 145). H. Sturmer.

Water level, in feet below land-surface datum, 1944

Jan. 27	a 18.22	May 3	15.50	Aug. 1	a 24.14	Oct. 30	a 26.69
Mar. 2	13.66	June 3	12.73	28	a 29.11	Nov. 27	a 21.30
Apr. 6	10.70	July 3	a 18.35	Sept. 25	a 28.94	Dec. 31	a 17.79

a Below mean sea level.

4/25-29R1 (*949, p. 194; *991, p. 145). Carpinteria Union High School.

Water level, in feet below land-surface datum, 1944

Jan. 27	15.78	May 3	12.30	Aug. 1	21.98	Oct. 30	21.54
Mar. 2	13.09	June 3	12.41	28	ab 36.62	Nov. 27	17.51
Apr. 6	11.84	July 3	a 29.44	Sept. 25	26.50	Dec. 31	14.14

a Nearby well pumping.

b Below mean sea level.

4/25-33C1 (*949, p. 195; *991, p. 146). B. F. Franklin.

Water level, in feet below land-surface datum, 1944

Jan. 27	25.39	May 3	23.91	Aug. 1	23.87	Oct. 30	24.75
Mar. 2	24.90	June 3	23.96	28	24.24	Nov. 27	24.90
Apr. 6	24.05	July 3	23.96	Sept. 25	24.46	Dec. 31	25.14

4/25-35B1 (*949, p. 195; *991, p. 146). R. Nichols.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	34.69	June 3	27.70	Aug. 28	a 42.78	Nov. 27	34.27
Apr. 6	21.41	July 3	a 32.01	Sept. 25	a 43.20	Dec. 31	24.24
May 3	23.22	Aug. 1	29.85	Oct. 30	a 46.01		

a Nearby well pumping.

4/25-35D1 (*941, p. 164; *949, p. 196; *991, p. 146). W. B. Knowlton.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	127.52	May 3	122.39	Aug. 1	122.41	Oct. 30	124.79
Mar. 2	125.72	June 3	121.79	28	122.73	Nov. 27	123.08
Apr. 6	123.52	July 3	122.22	Sept. 25	124.23	Dec. 31	121.31

4/25-35M1 (*991, p. 146). E. L. Sheldon. Water levels, in feet below land-surface datum, 1944: Jan. 27, 15.07; Mar. 2, 8.37; Apr. 6, 10.66; May 3, 10.26. Measurements discontinued.

4/26-23H4 (*949, p. 196; *991, p. 147). Earl Busby. Measurements discontinued after Aug. 1.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	31.72	Apr. 6	28.41	July 3	30.66		
Mar. 2	30.29	May 3	a 28.79	Aug. 1	31.73		

a Pumping recently.

4/26-24F2 (*949, p. 196; *991, p. 147). A. F. Thurmond.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	6.98	Apr. 6	4.34	June 3	ab 84.40	Nov. 27	7.82
Mar. 2	5.56	May 3	ab 26.51	July 3	ab 90.00	Dec. 31	6.72

a Pumping.

b Below mean sea level.

Goleta Basin

4/27-6N1 (*949, p. 197; *991, p. 147). John McCaughy.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	88.03	May 2	86.76	Aug. 1	87.96	Nov. 27	88.02
Mar. 1	86.78	June 3	86.69	Sept. 25	88.05	Dec. 30	87.92
Apr. 7	86.68	July 3	88.27	Oct. 30	88.43		

4/28-2N2 (*991, p. 147). County of Santa Barbara. In Tucker's Grove. Automatic water-stage recorder installed on Dec. 6.

Water level, at noon, in feet below land-surface datum, 1944 (From recorder charts beginning Dec. 6)							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	27.56	June 3	15.64	Sept. 25	22.90	Dec. 13	25.92
Mar. 1	20.11	July 3	16.99	Oct. 30	24.75	21	26.11
Apr. 7	17.70	Aug. 1	18.74	Nov. 27	25.14	25	26.36
May 2	17.58	28	20.73	Dec. 6	25.44		

4/28-3E2 (*949, p. 197; *991, p. 147). Peter Cavalletto.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	11.00	May 2	10.22	Aug. 28	a 22.67	Nov. 27	11.33
Mar. 1	10.05	June 3	10.45	Sept. 25	14.33	Dec. 31	11.29
Apr. 7	10.07	Aug. 1	a 15.05	Oct. 30	a 20.70		

a Nearby well pumping.

4/28-3M2 (*949, p. 197; *991, p. 147). L. W. Fowler.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	91.44	May 2	a 89.83	Aug. 1	a 92.97	Oct. 30	102.96
Mar. 1	89.50	June 3	a 91.78	28	a 95.30	Nov. 27	a 96.45
Apr. 7	87.94	July 3	a 94.04	Sept. 25	a 105.03	Dec. 31	93.14

a Nearby well pumping.

4/28-3P1 (*949, p. 197; *991, p. 148). Lynn Sexton.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	132.66	May 2	130.28	Aug. 1	130.94	Oct. 30	a 134.17
Mar. 1	131.54	June 3	130.70	28	132.13	Nov. 27	133.84
Apr. 7	130.63	July 3	131.79	Sept. 25	133.23	Dec. 30	133.20

a Nearby well pumping.

4/28-3P2 (*949, p. 198; *991, p. 148). G. L. Bean. Measurements discontinued after Dec. 30.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	57.05	May 2	53.58	Aug. 1	a 55.53	Oct. 30	a 58.08
Mar. 1	56.06	June 3	53.03	28	b 98.30	Nov. 27	59.00
Apr. 7	53.79	July 3	a 54.60	Sept. 25	b 56.32	Dec. 30	59.38

a Nearby well pumping.

b Pumping.

4/28-3P4. Carrigan & Sperry. About 1.9 miles nearly northeast of Goleta, 500 yards east of Patterson Avenue, 55 feet south of Cathedral Oaks Road, 40 feet west of Maria Ygnacio Creek, in lemon grove. Drilled irrigation well, diameter 10 inches, reported depth 445 feet. Confined water in sand and gravel. Measuring point, top north side of pump base through hole at air line, 1.00 foot above land-surface datum and about 125 feet above mean sea level.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	91.50	May 2	89.33	Aug. 28	a 94.55	Nov. 27	93.91
Mar. 1	90.54	June 3	89.39	Sept. 25	94.18	Dec. 30	93.11
Apr. 7	89.79						

a Nearby well pumping.

4/28-3Q2 (*991, p. 148). A. J. Haverland.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	89.87	May 2	86.61	Aug. 1	(ab)	Oct. 30	(ab)
Mar. 1	89.54	June 3	86.08	28	91.89	Nov. 27	(b)
Apr. 7	87.62	July 3	(ab)	Sept. 25	(b)	Dec. 30	(b)

a Nearby well pumping.

b Dry.

4/28-4K4 (*949, p. 198; *991, p. 148). R. S. Rowe.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	17.53	May 2	13.63	Aug. 1	a 26.90	Oct. 30	a 32.77
Mar. 1	15.12	June 3	13.88	28	14.98	Nov. 27	17.07
Apr. 7	13.47	July 3	a 30.79	Sept. 25	15.48	Dec. 31	16.29

a Nearby well pumping.

4/28-4P1 (*949, p. 198; *991, p. 148). J. Reeber. Land-surface datum is 93.65 feet above preliminary sea-level datum of 1934 (altitude by spirit levels, 1945).

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	83.64	May 2	82.03	Aug. 28	86.53	Nov. 27	83.85
Mar. 1	82.34	July 3	82.42	Sept. 25	87.42	Dec. 31	82.25
Apr. 7	81.19	Aug. 1	84.08	Oct. 30	88.59		

4/28-4Q2 (*949, p. 198; *991, p. 148). R. S. Rowe. Land-surface datum is 88.45 feet above preliminary sea-level datum of 1934 (altitude by spirit levels, 1945).

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	72.57	May 2	65.67	Aug. 1	ab 90.66	Oct. 30	70.18
Mar. 1	70.01	June 3	63.70	28	b 83.66	Nov. 27	68.59
Apr. 7	67.25	July 3	73.00	Sept. 25	ab 90.22	Dec. 31	66.72

a Below mean sea level. b Nearby well pumping.

4/28-4R1 (*941, p. 164; *949, p. 198; *991, p. 148). L. M. Cavaletto.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	61.71	May 2	57.18	Aug. 1	a 61.16	Oct. 30	62.42
Mar. 1	59.88	June 3	55.96	28	59.92	Nov. 27	61.04
Apr. 7	58.23	July 3	58.97	Sept. 25	63.90	Dec. 30	59.14

a Nearby well pumping.

4/28-4R2 (*941, p. 165; *949, p. 199; *991, p. 148). G. M. Gallagher. Land-surface datum is 98.20 feet above preliminary sea-level datum of 1934, (altitude by spirit levels, 1945).

Water level, in feet below land-surface datum, 1944

Jan. 26	53.60	May 2	50.41	Aug. 1	a 53.29	Oct. 30	54.38
Mar. 1	52.32	June 3	49.51	28	52.62	Nov. 27	53.03
Apr. 7	51.10	July 3	52.41	Sept. 25	a 55.55	Dec. 30	51.55

a Nearby well pumping.

4/28-4R3 (*941, p. 165; *949, p. 199; *991, p. 149). Cavaletto & Gallagher. Land-surface datum is 90.69 feet above preliminary sea-level datum of 1934 (altitude by spirit levels, 1945).

Water level, in feet below land-surface datum, 1944

Jan. 26	72.65	May 2	65.45	Aug. 1	a 81.02	Oct. 30	70.51
Mar. 1	69.74	June 3	63.38	28	67.92	Nov. 27	68.65
Apr. 7	67.08	July 3	67.49	Sept. 25	a 80.78	Dec. 30	a 70.28

a Nearby well pumping.

4/28-5C1 (*949, p. 199; *991, p. 149). Mario Mostachetti. Measurements discontinued after Oct. 30.

Water level, in feet below land-surface datum, 1944

Jan. 26	6.72	June 3	5.14	Aug. 1	6.24	Sept. 25	8.16
Mar. 1	3.94	July 3	5.44	28	b 13.81	Oct. 30	9.06
Apr. 7	a 13.53						

a Water entering well at surface through leaking valve.

b Pumping.

4/28-5J2 (*949, p. 200; *991, p. 149). Harry Sexton.

Water level, in feet below land-surface datum, 1944

Jan. 26	12.50	May 2	10.49	Aug. 1	12.23	Nov. 27	12.42
Mar. 1	10.62	June 3	11.06	Sept. 25	13.44	Dec. 31	12.14
Apr. 7	9.76	July 3	11.33	Oct. 30	a 19.34		

a Pumping recently.

4/28-5R4 (*991, p. 149). F. J. Ewing. Land-surface datum is 53.95 feet above preliminary sea-level datum of 1934 (altitude by spirit levels, 1945).

Water level, in feet below land-surface datum, 1944

Jan. 26	46.93	May 2	44.23	Aug. 1	45.63	Oct. 30	48.73
Mar. 1	45.79	June 3	43.39	28	a 47.37	Nov. 27	47.12
Apr. 7	44.88	July 3	47.40	Sept. 25	46.78	Dec. 31	46.28

a Nearby well pumping.

4/28-8K5 (*991, p. 149). Harry Sexton.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 26.36	May 2	24.35	Aug. 1	a 25.49	Oct. 30	ab 30.52
Mar. 1	a 25.83	June 3	23.73	28	ab 27.43	Nov. 27	a 30.48
Apr. 7	24.97	July 3	b 23.42	Sept. 25	ab 29.05	Dec. 31	a 29.99

a Below mean sea level.

b Nearby well pumping.

4/28-9A3 (*941, p. 166; *949, p. 200; *991, p. 150). L. M. Cavaletto.

Water level, in feet below land-surface datum, 1944 ^{a/}
(From float gage beginning Mar. 17)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	44.32	May 2	41.47		42.05	Oct. 30	46.78
Mar. 1	42.81		40.93		c 50.00		45.46
17 b	41.87		c 45.76	Aug. 1	46.19		c 51.35
	41.45	June 3	c 41.17		44.18	Nov. 27	45.44
	42.49		40.77		c 50.35		45.55
Apr. 7	41.65		c 48.27	28	45.67		c 47.85
	41.11	July 3	42.44	Sept. 25	c 49.18	Dec. 30	44.17
	c 47.11						

a Undated entries are highest and lowest levels between dates of observation.

b "High-low" float gage installed.

c Nearby well pumping.

4/28-9E1 (*991, p. 150). A. T. Spaulding.

Water level, in feet below land-surface datum, 1944

Jan. 26	35.15	May 2	32.48	Aug. 1	39.07	Oct. 30	40.70
Mar. 1	34.09	June 3	31.84	23	33.96	Nov. 27	39.15
Apr. 7	32.98	July 3	36.08	Sept. 25	39.89		

4/28-10A1 (*949, p. 201; *991, p. 150). C. C. Lee.

Water level, in feet below land-surface datum, 1944

Jan. 26	97.37	May 2	93.30	Aug. 1	96.32	Oct. 30	98.32
Mar. 1	97.86	June 3	93.62	28	96.52	Nov. 27	98.01
Apr. 7	93.70	July 3 a	95.74	Sept. 25	97.00	Dec. 30	99.01

a Nearby well pumping.

4/28-10F1 (*949, p. 201; *991, p. 150). J. S. Edwards.

Water level, in feet below land-surface datum, 1944

Jan. 26	62.07	May 2	60.14	Aug. 1	62.56	Oct. 30	67.45
Mar. 1	60.84	June 3	60.93	28	66.71	Nov. 27	65.99
Apr. 7	59.32	July 3	64.52	Sept. 25	65.24	Dec. 30	64.83

4/28-10F2 (*991, p. 151). J. S. Edwards. Measurements discontinued after Dec. 30.

Water level, in feet below land-surface datum, 1944

Jan. 26	70.14	May 2	67.68	Aug. 1	70.27	Oct. 30	72.81
Mar. 1	69.24	June 3	67.51	28	72.11	Nov. 27	72.05
Apr. 7	68.37	July 3	69.80	Sept. 25	74.20	Dec. 30	72.08

4/28-10K2 (*949, p. 201; *991, p. 151). Norman Troup.

Water level, in feet below land-surface datum, 1944

Jan. 26 a	87.55	May 2 a	85.14	Aug. 1 a	90.98	Nov. 27 a	89.98
Mar. 1 ab	87.66	June 3 a	84.47	28 a	90.22	Dec. 30 a	88.72
Apr. 7 a	85.74	July 3 a	90.81	Sept. 25 a	94.38		

a Below mean sea level.

b Pumping recently.

4/28-10N6 (*949, p. 201; *991, p. 151). Dr. E. O. Campbell.

Water level, in feet below land-surface datum, 1944

Jan. 26	22.50	May 2	21.64	Aug. 1	21.97	Oct. 30	22.57
Mar. 1	22.15	June 3	21.62	28	22.14	Nov. 27	22.66
Apr. 7	21.78	July 3	21.73	Sept. 25	22.36	Dec. 30	22.75

4/28-11K1 (*991, p. 151). Giovanni Cavalli. Measurements discontinued after Dec. 31.

Water level, in feet below land-surface datum, 1944

Jan. 26	77.14	May 2	76.66	Aug. 1 a	82.62	Oct. 30 a	83.34
Mar. 1	75.72	June 3	78.49	28 a	82.03	Nov. 27 a	80.36
Apr. 7	75.90	July 3 a	81.81	Sept. 25 a	82.82	Dec. 31 a	79.05

a Below mean sea level.

4/28-12L4 (*941, p. 167; *949, p. 202; *991, p. 151). L. More.

Water level at noon, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	45.29	Apr. 5	a 61.00	July 5	a 83.05	Oct. 5	a 88.95
10	44.15	10	a 70.50	10	a 64.24	10	67.88
15	44.20	15	a 49.08	15	a 92.62	15	66.32
20	43.27	20	a 50.32	20	a 86.60	20	64.66
25	43.09	25	a 61.00	25	a 73.62	25	63.03
31	42.82	30	a 51.12	31	a 74.03	31	58.66
Feb. 5	42.20	May 5	a 50.22	Aug. 5	a 65.42	Nov. 5	57.11
10	42.00	10	a 48.61	10	a 63.24	10	57.20
15	42.17	15	a 45.46	15	a 64.00	15	53.64
20	41.50	20	a 49.10	20	a 62.64	20	52.02
25	39.81	25	a 53.05	25	a 63.16	25	51.30
29	40.06	31	a 46.17	31	a 68.42	30	50.04
Mar. 5	39.24	June 5	a 45.58	Sept. 5	a 95.05	Dec. 5	49.54
10	39.57	10	a 49.89	10	a 95.90	10	46.30
15	a 40.05	15	a 46.98	15	a 69.88	15	48.01
20	39.34	20	a 48.08	20	64.98	20	47.30
25	a 45.91	25	a 70.00	25	65.02	25	46.17
31	a 46.80	30	a 87.50	30	65.07	31	45.45

a Nearby well pumping.

4/28-15E1 (*949, p. 202; *991, p. 152). A. J. Holloway.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 43.60	May 2	a 40.99	Aug. 1	a 52.65	Oct. 30	a 48.20
Mar. 1	a 41.67	June 3	a 40.34	28	a 45.23	Nov. 27	a 46.55
Apr. 7	a 40.86	July 3	a 42.14	Sept. 25	a 49.12	Dec. 31	a 44.95

a Below mean sea level.

4/28-15G2 (*949, p. 202; *991, p. 152). Ignace Mariani. Formerly owned by J. J. Wheeler.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 53.42	May 2	a 53.58	Aug. 28	ab 58.30	Nov. 27	a 55.98
Mar. 1	a 51.65	June 3	a 49.56	Sept. 25	ab 59.45	Dec. 30	a 54.64
Apr. 7	a 51.14	July 3	a 52.85	Oct. 30	ab 58.50		

a Below mean sea level.

b Nearby well pumping.

4/28-16F2 (*991, n. 152). John Begg.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 28.73	May 2	a 26.69	Aug. 1	a 36.77	Oct. 30	a 35.41
Mar. 1	a 27.12	June 3	a 26.26	28	ab 47.20	Nov. 27	a 31.72
Apr. 7	a 26.96	July 3	a 27.79	Sept. 25	a 37.08	Dec. 31	ab 30.42

a Below mean sea level.

b Nearby well pumping.

4/28-16F3 (*991, p. 152). John Begg.

Water level, in feet below land-surface datum, 1944

Jan. 26	12.14	May 2	11.00	Aug. 1	11.70	Oct. 30	12.83
Mar. 1	11.24	June 3	11.00	28	12.02	Nov. 27	12.44
Apr. 7	11.08	July 3	11.30	Sept. 25	12.39	Dec. 31	12.74

4/28-17H3 (*941, p. 167; *949, p. 203; *991, p. 152). J. J. Mathews.

Water level, in feet below land-surface datum, 1944

Jan. 26	4.61	May 2	3.13	Aug. 1	4.83	Oct. 30	6.00
Mar. 1	1.49	June 3	3.64	28	5.31	Nov. 27	5.16
Apr. 7	3.18	July 3	4.29	Sept. 25	5.66	Dec. 31	5.67

4/28-17H11 (*941, p. 168; *949, p. 203; *991, p. 153). Mrs. L. Oakley and Mrs. M. Bonetti.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 13.65	May 2	a 11.91	Aug. 28	a 21.97	Nov. 27	a 13.48
Mar. 1	a 12.14	July 3	a 12.64	Sept. 25	ab 26.60	Dec. 31	a 14.62
Apr. 7	a 14.19	Aug. 1	a 18.11	Oct. 30	a 19.27		

a Below mean sea level.

b Pumping recently.

4/28-18G2 (*949, p. 203; *991, p. 153). T. B. Bishop Co.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	a 23.25	June 3	a 32.85	Sept. 25	a 27.62	Nov. 27	a 24.28
Apr. 7	a 20.66	July 3	a 34.84	Oct. 30	a 26.75	Dec. 31	a 22.81
May 2	a 22.32	Aug. 1	a 34.52				

a Below mean sea level.

4/28-18N3 (*949, p. 204; *991, p. 153). C. A. Storke.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 13.44	May 2	a 10.12	Aug. 1	a 13.26	Oct. 30	a 15.18
Mar. 1	a 10.03	June 3	a 10.52	28	a 14.73	Nov. 27	a 13.96
Apr. 7	a 9.89	July 3	a 11.28	Sept. 25	a 18.92	Dec. 31	a 14.55

a Below mean sea level.

4/29-13K2 (*949, p. 204; *991, p. 153). T. B. Bishop Co.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 43.97	May 2	a 42.08	Aug. 1	a 43.10	Oct. 30	a 44.08
Mar. 1	a 42.20	June 3	a 42.24	28	a 43.91	Nov. 27	a 43.23
Apr. 7	a 41.62	July 3	a 42.94	Sept. 25	a 44.05	Dec. 31	a 42.62

a Below mean sea level.

4/29-14A3 (*949, p. 205; *991, p. 153). Frank Baker.

Water level, in feet below land-surface datum, 1944

Jan. 26	a 72.62	May 2	ab 79.90	Aug. 1	a 73.19	Oct. 30	a 73.66
Mar. 1	a 72.20	June 3	a 71.76	28	a 73.62	Nov. 30	a 72.93
Apr. 7	a 72.45	July 3	a 72.26	Sept. 25	a 73.89	Dec. 31	a 72.35

a Below mean sea level.

b Pumping.

Santa Ynez, San Antonio, Santa Maria, and Cuyama Valleys

6/30-2P1 (*949, p. 205; *991, p. 154). L. B. and K. W. Manning.
In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	31.43	June 30	31.22	Sept. 29	31.75	Dec. 1	32.18
Apr. 28	30.73	Aug. 4	31.23	Nov. 3	a 41.40	30	31.88
June 2	30.90						

a Pumping.

6/30-6A1 (*949, p. 205; *991, p. 154). Sam Torrence. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	43.84	June 30	50.51	Sept. 29	55.95	Dec. 1	49.97
Apr. 28	a 45.79	Aug. 4	b 67.56	Nov. 3	54.25	30	49.14
June 2	50.36	Sept. 1	55.44				

a Pumping recently.

b Pumping.

6/30-7K1 (*949, p. 205; *991, p. 154). Mrs. Anderson. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	38.22	June 30	a 39.59	Sept. 1	a 39.74	Dec. 1	38.88
Apr. 28	38.60	Aug. 4	a 39.73	29	a 39.83	30	38.83
June 2	38.79						

a Pumping.

6/30-9N1 (*949, p. 205; *991, p. 154). San Lucas Ranch. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	31.04	June 2	30.72	Sept. 1	30.71	Dec. 1	30.74
Apr. 28	30.92	30	30.75	29	30.82	30	30.90

6/30-1CR1 (*949, p. 206; *991, p. 154). L. B. and K. W. Manning.
In Middle Santa Ynez Valley.

6/30-10R1. L. B. and K. W. Manning--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 3	18.04	June 30	20.83	Sept. 29	21.15	Dec. 1	20.83
Apr. 28	20.32	Aug. 4	20.87	Nov. 3	20.98	30	20.76
June 2	20.68	Sept. 1	21.08				

6/30-29E1 (*949, p. 206; *991, p. 154). Rancho Juan y Lolita. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Apr. 28	12.21	Aug. 4	a 13.51	Sept. 29	16.62	Dec. 1	14.50
June 2	11.45	Sept. 1	15.02	Nov. 3	18.02	30	13.53
30	12.70						

a Nearby well pumping.

6/31-11E1 (*949, p. 207; *991, p. 155). T. Petersen. In Middle Santa Ynez Valley. Water levels, in feet below land-surface datum, 1944: Mar. 3, 35.82; Nov. 3, 52.78; Dec. 1, 46.42; Dec. 30, 42.45.

6/31-13D1 (*949, p. 207; *991, p. 155). Mrs. W. E. Parker. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	103.49	June 30	103.25	Sept. 29	103.38	Dec. 1	103.19
Apr. 28	103.13	Aug. 4	103.27	Nov. 3	103.33	30	103.23
June 2	a 104.19	Sept. 1	103.33				

a Pumping recently.

6/31-17F1 (*949, p. 208; *991, p. 155). J. R. Orton. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	16.02	June 30	17.14	Sept. 29	17.20	Dec. 1	16.87
Apr. 27	16.37	Aug. 3	18.29	Nov. 3	17.11	30	16.75
May 31	16.80	Sept. 1	17.45				

6/31-21E2 (*991, p. 155). Alisal Corporation. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 3	6.35	June 30	7.79	Sept. 29	8.00	Dec. 1	7.89
Apr. 28	7.49	Aug. 4	7.93	Nov. 3	7.97	30	7.69
June 2	7.74	Sept. 1	7.97				

6/32-6K1 (*949, p. 209; *991, p. 156). Mrs. M. Barker. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 2	16.15	June 28	16.75	Sept. 27	a 25.65	Nov. 30	17.10
Apr. 27	a 19.08	Aug. 2	17.05	Nov. 2	17.09	Dec. 29	17.02
May 31	17.23	30	a 17.32				

a Pumping.

6/32-9A1 (*949, p. 209; *991, p. 156). Owen Hollister. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 2	29.11	June 28	a 32.36	Sept. 27	31.98	Nov. 30	30.68
Apr. 27	30.42	Aug. 2	a 33.36	Nov. 2	31.81	Dec. 29	30.46
May 31	30.65	30	32.81				

a Nearby well pumping.

6/32-11H1 (*949, p. 209; *991, p. 156). W. M. Hunt. In Middle Santa Ynez Valley. No measurements made in 1944; measurements discontinued.

6/32-12J2 (*941, p. 153; *949, p. 210; *991, p. 156). A. Bodine. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	28.83	Apr. 27	27.99	Aug. 2	26.06	Nov. 3	27.16
18	28.66	June 2	27.65	Sept. 1	26.00	Dec. 1	27.65
Mar. 8	27.36	28	26.99	27	26.48	29	28.16

6/32-16P3 (*949, p. 210; *991, p. 157). Channing Peake. Formerly owned by Lind Ranch. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 2	42.86	May 31 a	45.20	Nov. 2	45.96	Dec. 29	45.20
May 3	44.61	June 28 a	45.76	30	45.28		

a Pumping recently.

6/33-9P1 (*941, p. 154; *949, p. 211; *991, p. 157). Hollister Estate. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944 a/
(From float gage)

Mar. 2	35.55		35.74		36.70	Nov. 2	37.09
	34.95		36.06	Aug. 30	36.69		37.03
	35.55	June 28	36.02		36.69		37.16
Apr. 26	35.23		36.02		36.98	30	37.03
	35.21		36.55	Sept. 27	36.98		36.95
	35.79	Aug. 2	36.44		36.98		37.06
May 31	35.79		36.44		37.13	Dec. 29	36.98

a Undated entries are highest and lowest levels between dates of observation.

6/33-12L1 (*949, p. 211; *991, p. 158). J. Corbillini. In Middle Santa Ynez Valley. Water levels, in feet below land-surface datum, 1944: Mar. 2, 44.00 (pumping); May 31, 15.92; Aug. 2, 33.85 (pumping); Nov. 30, 16.48.

6/34-2A1 (*941, p. 154; *949, p. 212; *991, p. 158). C. Madsen. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	38.16	Mar. 8	36.35	June 7	38.20	Aug. 23	38.62
12	33.24	15	36.66	15	38.27	30	38.60
18	38.24	29	37.36	21	38.34	Sept. 6	38.58
Feb. 9	37.96	Apr. 11	37.68	28	38.40	27	38.59
16	38.08	26	37.89	July 5	38.43	Nov. 2	38.57
23	34.52	May 3	37.79	19	38.46	30	38.34
28	36.98	17	38.00	Aug. 2	38.54	Dec. 29	38.16
Mar. 2	36.60	23	38.10	16	38.56		

6/34-4D1 (*949, p. 212; *991, p. 158). Peter Tognatti. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Mar. 2	23.58	Sept. 27	31.80	Nov. 30	27.78
Aug. 9	31.05	Nov. 2	30.94		

6/34-602 (*991, p. 158). Bank of America. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	50.12	June 28 a	55.70	Sept. 27	56.65	Nov. 30	53.57
Apr. 26	53.77	Aug. 30	57.28	Nov. 2	56.27	Dec. 29	54.41
May 31	54.24						

a Pumping.

7/24-13C1 (*949, p. 237; *991, p. 158). County of Ventura. Apache School District. In Cuyama Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 1	5.34	June 27	7.93	Sept. 26	9.22	Nov. 28	9.47
Apr. 25	6.36	July 27	8.61	Oct. 31	9.54	Dec. 27	9.44
May 30	7.33	Aug. 29	8.95				

7/31-23P1 (*949, p. 213; *991, p. 159). F. L. Mattei. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 3	9.54	June 30	11.74	Sept. 29	12.80	Dec. 1	12.15
Apr. 27	10.02	Aug. 4 a	16.60	Nov. 3	12.58	30 a	14.30
June 1 a	15.22						

a Pumping.

7/31-25L1 (*949, p. 213; *991, p. 159). Russell Smith. In Middle Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 3	57.50	June 30	56.25	Sept. 1	57.85	Dec. 1	59.38
Apr. 27	55.83	Aug. 4 a	62.18	Nov. 3	58.94	30	60.05
June 1 a	57.65						

a Pumping.

7/31-35K1 (*949, p. 213; *991, p. 159). B. H. and A. R. Hill. In Middle Santa Ynez Valley. No measurements made in 1944; measurements discontinued.

7/31-36L2 (*949, p. 213; *991, p. 159). Dr. W. B. Swackhamer. In Middle Santa Ynez Valley.

Water level at noon, in feet below land-surface datum, 1944

(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	17.82	Mar. 31	16.72	June 25	17.15	Sept. 15	17.83
10	17.72	Apr. 5	16.72	30	17.21	20	18.00
15	17.78	10	16.68	July 5	17.26	25	17.90
20	17.75	15	16.70	10 a	17.48	30	18.03
25	17.57	20	16.82	15	17.40	Oct. 5	18.02
31	17.72	25	16.71	20	17.37	10 a	18.14
Feb. 5	17.70	30	16.70	25	17.44	15	18.09
10	17.74	May 5	16.68	31	17.46	17	18.06
15	17.58	10	16.72	Aug. 5	17.56	26	18.05
20	17.39	15	16.82	10 a	17.98	31	18.13
25	17.26	20	16.86	15	17.63	Nov. 4	18.12
29	17.14	25 a	17.06	20	17.72	Dec. 1	17.97
Mar. 5	17.10	31	16.95	25 a	17.92	5	18.04
10	16.92	*June 5	16.93	31	17.82	10	18.00
15	16.82	10	17.03	Sept. 5 a	18.02	14	18.05
20	16.78	15	17.03	10	17.82	31	18.07
25	16.65	20 a	17.52				

a Nearby well pumping.

7/33-30C1 (#949, p.214; #991, p.158). John Valla. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	151.03	June 28 a	152.41	Sept. 27 a	151.08	Nov. 30	150.82
Apr. 26 a	151.06	Aug. 2 a	151.15	Nov. 2	151.03	Dec. 29	150.74
May 31 a	150.71	30 a	151.11				

a Nearby well pumping.

7/34-22H2 (#949, p. 215; #991, p. 160). H. E. Harris. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	22.14	May 3	23.00	Aug. 2	22.62	Nov. 2	22.53
Feb. 28	21.94	31	22.52	30	22.65	30	22.50
Apr. 26	22.93	June 28 a	23.05	Sept. 27	22.60	Dec. 29	22.52

a Nearby well pumping.

7/34-22J3 (#949, p. 215; #991, p. 160). H. E. Harris. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	22.61	May 31	22.61	Aug. 30	23.23	Nov. 30	22.95
Feb. 28	22.45	June 28 a	25.08	Sept. 27	23.22	Dec. 29	22.95
May 3	24.71	Aug. 2	23.31	Nov. 2	23.02		

a Nearby well pumping.

7/34-22J5 (#991, p. 160). Geol. Survey, U. S. Dept. of Interior. H. E. Harris property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	6.65	May 31	6.20	Aug. 2	6.99	Sept. 27	7.43
Feb. 28	6.04	June 28	6.54	30	7.25	Nov. 2	7.60
May 3	5.34						

7/34-22Q1 (#991, p. 160). Geol. Survey, U.S. Dept. of Interior. A. Scolari property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18	12.54	May 3	12.37	Aug. 2	13.19	Nov. 2	14.00
Feb. 28	11.35	31	12.45	30	13.54	30	13.12
Apr. 26	12.37	June 28	12.60	Sept. 27	13.72	Dec. 29	12.96

7/34-22Q3 (#991, p. 160). Geol. Survey, U.S. Dept. of Interior. H. E. Harris property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 18	7.92	May 3	7.43	June 28	8.75
Feb. 28	6.80	31	7.77	Aug. 2	8.46

7/34-26A2 (#941, p. 155; #949, p. 216; #991, p. 161). K. McConnell. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	35.49	Mar. 15	35.33	June 15	35.65	Aug. 16	35.85
12	35.51	29	35.29	21	35.70	23	35.93
18	35.51	Apr. 11	35.25	28	35.62	30	35.87
Feb. 9	35.50	18	35.29	July 5	35.62	Sept. 6	35.95
16	35.48	26	35.27	12	35.68	27	35.89
23	35.42	May 3	35.30	19	35.78	Nov. 2	35.92
28	35.43	17	35.32	Aug. 2	35.87	30	35.96
Mar. 2	35.42	31	35.40	9	35.91	Dec. 29	36.00
8	35.38						

7/34-26D2 (*991, p. 161). Geol. Survey, U.S. Dept. of Interior. Union Sugar Co. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	9.73	May 31	9.46	Aug. 16	10.13	Sept. 27	10.48
18	9.75	June 28	9.61	23	10.18	Nov. 2	10.70
Feb. 28	8.77	July 19	9.82	30	10.27	30	10.24
Apr. 26	9.23	Aug. 2	9.96	Sept. 6	10.32	Dec. 29	10.16
May 3	9.24	9	10.04				

7/34-26E1 (*991, p. 161). Geol. Survey, U.S. Dept. of Interior. Union Sugar Co. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	9.44	Mar. 15	8.02	June 7	9.53	Aug. 16	10.38
12	9.51	29	8.68	15	9.62	23	10.57
18	9.52	Apr. 11	8.94	21	9.70	30	10.77
Feb. 9	9.29	18	9.07	28	9.76	Sept. 6	10.29
16	9.29	26	9.20	July 5	9.80	27	11.10
23	7.01	May 3	9.16	12	9.87	Nov. 2	11.55
28	7.07	17	9.32	19	9.92	30	9.98
Mar. 2	7.77	23	9.40	Aug. 2	10.02	Dec. 29	9.83
8	7.78	31	9.46	9	10.14		

7/34-26F1 (*941, p. 156; *991, p. 161). Geol. Survey, U.S. Dept. of Interior. Union Sugar Co. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	32.40	Feb. 28	32.19	Apr. 18	32.16	July 5	32.53
12	32.43	Mar. 2	32.10	26	32.24	12	32.61
18	32.41	8	32.10	May 3	32.14	Aug. 30	32.99
Feb. 9	32.33	15	32.02	17	32.20	Sept. 27	32.93
16	32.32	29	31.97	31	32.62	Nov. 2	32.99
23	32.14	Apr. 11	32.09	June 28	32.49	30	32.86

7/34-26F4 (*991, p. 162). Geol. Survey, U.S. Dept. of Interior. Union Sugar Co. property. Water-stage recorder removed on Jan. 11.

Water level at noon, in feet below land-surface datum, 1944
(From recorder charts Jan. 1-11)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	16.52	Mar. 2	16.35	May 31	16.16	Aug. 9	a 16.80
5	16.54	8	16.23	June 7	a 16.39	16	a 16.79
10	16.51	15	16.13	15	a 16.46	23	a 16.85
11	16.53	29	16.02	21	a 16.48	30	16.71
12	16.48	Apr. 11	15.94	28	16.36	Sept. 6	a 16.70
18	16.52	18	16.04	July 5	16.31	27	16.67
Feb. 9	16.45	26	16.01	12	16.22	Nov. 2	16.90
16	16.47	May 3	16.07	19	a 16.70	30	16.90
23	16.40	17	16.02	Aug. 2	a 16.60	Dec. 29	16.86
28	16.35						

a Nearby well pumping.

7/34-26F5 (*991, p. 162). Geol. Survey, U.S. Dept. of Interior. Union Sugar Co. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	15.36	Mar. 15	14.52	May 31	14.86	Aug. 2	15.53
12	15.32	29	14.39	June 7	14.95	9	15.58
18	15.37	Apr. 1	14.43	15	15.06	16	15.55
Feb. 9	15.27	18	14.51	21	15.14	23	15.68
16	15.27	26	14.60	28	15.15	30	15.77
23	15.12	May 3	14.67	July 5	15.19	Sept. 6	15.85
28	15.01	17	14.76	12	15.25	27	15.90
Mar. 2	14.92	23	14.70	19	15.34	Dec. 29	15.70
8	14.73						

7/34-26M1 (*991, p. 162). Geol. Survey, U.S. Dept. of Interior. Valla Bros. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	10.20	Mar. 15	8.83	June 7	10.07	Aug. 16	10.82
12	10.23	29	9.22	15	10.17	23	10.94
18	10.25	Apr. 11	9.42	21	10.26	30	11.11
Feb. 9	10.07	18	9.55	28	10.33	Sept. 6	11.03
16	10.11	26	9.68	July 5	10.39	27	11.44
23	9.55	May 3	9.72	12	10.42	Nov. 2	11.92
28	9.16	17	9.87	19	10.52	30	10.80
Mar. 2	9.02	23	9.92	Aug. 2	10.64	Dec. 29	10.63
8	8.81	31	10.00	9	10.71		

7/34-26N2. Geol. Survey, U. S. Dept. of Interior. Roy Bland property. In Lower Santa Ynez Valley, about 1.6 miles nearly northeast of Lompoc, 230 yards north of North Avenue, 350 feet east of North First Street, at base of terrace, on the Santa Ynez River flood plain. Bored observation well, diameter 2 inches, measured depth 11.2 feet. Unconfined water in alluvial gravel and sand. Measuring point, top south side of casing, 3.00 feet above land-surface datum, and 87.78 feet above sea level datum of 1929.

Water level, in feet below land-surface datum, 1944							
Jan. 12	8.96	Mar. 15	7.36	June 7	9.08	Aug. 16	9.91
18	8.94	29	7.75	15	9.26	23	9.96
Feb. 9	8.74	Apr. 11	8.10	21	9.34	30	10.05
16	8.73	18	8.34	28	9.40	Sept. 6	9.94
23	6.03	26 a	8.41	July 5	9.46	27	10.30
24	6.55	May 3	8.56	12	9.51	Nov. 2	10.33
28	7.29	17	8.73	19	9.59	30	9.59
Mar. 2	7.33	23	8.79	Aug. 2	9.70	Dec. 29	9.45
8	7.24	31	8.95	9	9.77		

a Nearby well pumping.

7/34-26P1 (*991, p. 162). Roy Bland. In Lower Santa Ynez Valley. Water-stage recorder removed Jan. 11.

Water level at noon, in feet below land-surface datum, 1944 (From recorder charts Jan. 1-11)											
Jan.	1	12.96	Mar.	29	11.64	June	15	12.72	Aug.	16	13.29
	5	12.92	Apr.	11	11.92		21	12.79		23	13.37
	10	12.90		18	12.09		28	12.85		30	13.46
	11	12.90		26	12.23	July	5	12.92	Sept.	6	13.48
Feb.	9	12.76	May	3	12.27		12	12.95		27	13.72
	16	12.78		17	12.40		19	13.02	Nov.	2	14.01
	28	11.74		23	12.45	Aug.	2	13.14		30	13.32
Mar.	8	11.42		31	12.52		9	13.20	Dec.	29	13.07
	15	11.32	June	7	12.61						

7/34-26Q1 (*991, p. 163). A. G. Hibbits. In Lower Santa Ynez Valley. Measurements discontinued after Aug. 16.

Water level, in feet below land-surface datum, 1944															
Jan.	5	a	14.03	Feb.	28		12.44	Apr.	18	c	14.03	June	7		12.52
	12		12.61		2	b	12.83		26	c	14.35		15		12.42
	18		12.63		8		12.22		3		12.20		28		12.56
Feb.	9		12.57		15		12.08		17		12.16	July	5		12.60
	16		12.57		29		11.87		31		12.28	Aug.	16	c	14.83
	23		12.50	Apr.	11	c	13.96								

a Pumping.

b Pumping recently.

c Nearby well pumping.

7/34-26Q2 (*991, p. 163). A. G. Hibbits. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	33.25	Mar. 8	32.89	June 15	33.08	Aug. 23	33.85
12	33.24	15	32.74	21	33.17	30	33.88
18	33.25	29	32.54	28	33.13	Sept. 6	34.15
Feb. 9	33.18	Apr. 11	a 44.45	July 5	33.25	27	33.95
16	33.17	May 3	32.86	12	33.24	Nov. 2	33.90
23	33.12	17	32.80	19	33.54	30	33.74
28	33.07	31	32.94	Aug. 2	33.58	Dec. 29	33.88
Mar. 2	32.99	June 7	33.00	9	b 34.30		

a Pumping.

b Pumping recently.

7/34-26R2 (*949, p. 216; *991, p. 163). W. T. McHenry. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	33.94	May 17	34.19	Sept. 6	34.64	Nov. 30	34.71
Feb. 16	34.03	July 12	34.22	27	34.72	Dec. 29	34.67
Mar. 8	a 33.79	Aug. 30	34.58	Nov. 2	34.75		

a Pumping recently.

7/34-27A3 (*991, p. 163). Geol. Survey, U.S. Dept. of Interior. L. H. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 18	8.13	June 28	8.38	Aug. 16	9.04	Sept. 27	9.32
Feb. 28	6.98	July 19	8.67	23	9.12	Nov. 2	9.45
Apr. 26	7.70	Aug. 2	8.84	30	9.16	30	8.78
May 3	7.72	9	8.95	Sept. 6	9.22	Dec. 29	8.61
31	8.10						

7/34-27H2 (*991, p. 163). Geol. Survey, U.S. Dept. of Interior. L. H. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	12.54	Mar. 15	11.16	May 31	12.50	Aug. 2	13.16
12	12.58	29	11.69	June 7	12.56	9	13.24
18	12.58	Apr. 11	11.91	15	12.65	16	13.49
Feb. 16	12.46	18	12.03	21	12.75	23	13.60
23	10.30	26	12.17	28	12.82	Sept. 6	13.75
24	10.48	May 3	12.19	July 5	12.89	27	14.00
28	11.25	17	12.33	12	12.94	Nov. 30	13.10
Mar. 2	11.02	23	12.41	19	13.00	Dec. 29	13.00
8	10.93						

7/34-27J2 (*991, p. 164). Geol. Survey, U.S. Dept. of Interior. L. H. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	12.41	Mar. 8	11.45	May 31	12.17	Aug. 9	13.20
12	12.36	15	11.23	June 7	12.25	16	13.32
18	12.31	29	11.23	15	12.40	23	13.38
Feb. 9	12.20	Apr. 11	11.38	21	12.50	30	13.46
16	12.15	18	11.53	28	12.61	Sept. 6	13.54
23	12.10	26	11.71	July 5	12.69	27	13.69
24	12.07	May 3	11.78	12	12.76	Nov. 2	13.80
28	11.85	17	12.01	19	12.85	30	13.22
Mar. 2	11.67	23	12.11	Aug. 2	13.10	Dec. 29	12.98

7/34-27J3 (*991, p. 164). Geol. Survey, U. S. Dept. of Interior. L.H. Schuyler property. In Lower Santa Ynez Valley.

7/34-27J3. L. H. Schuyler property--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	14.14	Mar. 8	13.26	May 31	13.99	Aug. 9	15.20
12	14.12	15	13.05	June 7	14.22	16	15.25
18	14.10	29	13.07	15	14.30	23	15.23
Feb. 9	13.93	Apr. 11	13.28	21	14.42	30	15.40
16	13.89	18	13.34	28	14.50	Sept. 6	15.39
23	13.83	26	13.63	July 5	14.58	27	15.42
24	13.76	May 3	13.68	12	14.68	Nov. 2	15.58
28	13.59	17	13.87	19	14.78	30	14.97
Mar. 2	13.45	23	13.91	Aug. 2	15.14	Dec. 29	14.80

7/34-27J4 (*991, p. 164). L. H. Schuyler. In Lower Santa Ynez Valley. Land-surface datum is 33.74 feet above sea-level datum of 1929. Water-stage recorder installed on Jan. 11, 1944, and removed on Dec. 5.

Water level at noon, in feet below land-surface datum, 1944 (From recorder charts Jan. 11-Dec. 5)							
Jan. 5	16.47	Mar. 31	15.74	June 20	16.10	Sept. 10	17.07
11	16.41	Apr. 5	15.70	25	16.15	15	17.11
15	16.40	10	15.67	30	16.20	20	17.15
20	16.39	15	15.66	July 5	16.26	25	17.18
25	16.37	20	15.67	10	16.30	30	17.21
31	16.35	25	15.69	15	16.34	Oct. 5	17.24
Feb. 5	16.32	30	15.72	20	16.41	10	17.27
10	16.30	May 5	15.74	25	16.48	15	17.28
15	16.27	10	15.75	31	16.57	17	17.29
20	16.25	15	15.79	Aug. 5	16.64	26	17.35
25	16.21	20	15.33	10	16.72	31	17.37
29	16.17	25	15.86	15	16.78	Nov. 5	17.38
Mar. 5	16.10	31	15.91	20	16.82	8	17.39
10	16.02	June 5	15.35	25	16.87	30	17.36
15	15.94	10	15.98	31	16.96	Dec. 5	17.54
20	15.87	15	16.04	Sept. 5	17.02	29	17.20
25	15.81						

7/34-27J5. Geol. Survey, U. S. Dept. of Interior. L. H. Schuyler property. In Lower Santa Ynez Valley, about 1.6 miles nearly northeast of Lompoc, 20 feet north of observation well 27J4, at foot of terrace on the Santa Ynez River flood plain. Bored observation well, diameter 6 inches, measured depth 16.6 feet. Unconfined water in alluvial gravel and sand. Measuring point, top east side of concrete-tile casing, 0.50 foot above land-surface datum and 88.36 feet above sea-level datum of 1929. Water-stage recorder installed on Jan. 11, 1944.

Water level at noon, in feet below land-surface datum, 1944 (From recorder charts)							
Jan. 11	14.86	Apr. 15	14.19	July 5	15.36	Sept. 25	16.20
15	14.89	20	14.30	9	15.36	30	16.21
18	14.92	25	14.42	12	15.42	Oct. 5	16.22
25	14.93	30	14.46	19	15.53	10	16.30
Feb. 10	14.71	May 5	14.45	26	15.64	15	16.32
15	14.66	10	14.48	31	15.83	17	16.32
20	14.62	15	14.70	Aug. 5	15.86	26	16.37
25	14.31	20	14.79	10	15.94	31	16.38
29	14.14	25	14.74	15	16.00	Nov. 5	16.28
Mar. 5	13.97	31	14.82	20	16.00	9	16.16
10	13.80	June 5	14.93	25	15.98	30	15.68
15	13.73	10	15.03	31	16.09	Dec. 5	15.63
20	13.72	15	15.12	Sept. 6	16.16	10	15.60
25	13.78	20	15.20	10	16.15	13	15.58
31	13.78	25	15.25	15	16.23	29	15.50
Apr. 5	13.88	28	15.27	20	16.20	31	15.49
10	14.02						

7/34-2711 (#949, p. 217; #991, p. 164). Mrs. Susan Van Clief. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	29.29	Feb. 28	28.76	May 17	a 31.65	Aug. 2	a 31.61
11	29.27	Mar. 2	28.65	23	29.51	9	a 32.31
18	29.39	8	28.49	31	29.80	16	31.05
Feb. 9	29.07	15	28.36	June 7	30.19	23	30.75
16	29.08	29	28.67	15	30.19	30	a 33.05
22	28.90	Apr. 11	29.08	21	30.46	Sept. 6	a 31.66
23	29.01	18	29.17	28	30.23	27	30.71
24	28.88	26	29.47	July 5	30.29	Nov. 2	30.92
25	28.84	May 3	29.30	12	a 31.44	30	30.27
26	28.80	10	29.55	19	30.67	Dec. 29	30.16

a Nearby well pumping.

7/34-27P2. Geol. Survey, U. S. Dept. of Interior. Mary Skaarup property. In Lower Santa Ynez Valley, about 1.3 miles nearly north-northeast of Lompoc, 300 yards north of North Avenue, 25 feet west of "A" Street, in gully. Bored observation well, diameter 2 inches, measured depth 17.5 feet. Unconfined water in alluvial sand and silt. Measuring point, top north side of casing, 3.00 feet above land-surface datum and 85.72 feet above sea-level datum of 1929.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	13.86	Mar. 2	12.10	May 31	13.61	Aug. 9	14.80
12	13.83	8	11.96	June 7	13.55	16	14.90
Feb. 9	13.67	15	12.24	15	13.87	23	14.92
16	13.63	29	12.55	21	13.97	30	14.99
22	13.47	Apr. 11	12.78	28	14.06	Sept. 6	15.04
23	13.33	18	12.97	July 5	14.14	27	15.12
24	13.04	26	13.11	12	14.25	Nov. 2	15.15
25	12.69	May 3	13.22	19	14.36	30	14.90
26	12.49	17	13.47	Aug. 2	14.66	Dec. 29	14.31
28	12.35	23	13.52				

7/34-28H2 (#949, p. 217; #991, p. 165). T. M. Parks. In Lower Santa Ynez Valley.

Water level at noon, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	24.21	Mar. 31	a 24.49	June 25	a 30.40	Sept. 15	27.21
10	24.12	Apr. 5	a 23.76	30	26.62	20	26.78
15	24.17	10	a 26.84	July 5	25.82	25	26.53
20	a 26.64	15	a 24.74	10	a 27.00	30	26.45
25	24.25	20	a 26.08	15	a 23.14	Oct. 5	26.94
31	24.22	25	a 25.59	20	a 27.12	10	a 29.01
Feb. 5	24.00	30	23.78	25	a 29.87	15	27.48
10	23.92	May 5	a 25.85	31	a 27.55	17	26.34
15	23.93	10	a 26.45	Aug. 5	a 30.10	27	26.80
20	24.00	15	a 26.84	10	a 30.24	31	26.40
25	23.50	20	a 26.30	15	a 29.42	Nov. 5	26.03
29	23.40	25	a 27.36	20	a 27.48	9	26.03
Mar. 5	23.20	31	a 23.15	25	a 27.77	30	25.59
10	23.01	June 5	a 28.75	31	a 30.15	Dec. 5	26.28
15	23.07	10	a 29.90	Sept. 5	27.52	10	25.84
23	23.90	15	26.50	10	27.80	29	25.35
25	24.14	20	a 29.50				

a Nearby well pumping.

7/34-28R1 (#991, p. 165). A. C. Zvolanek. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	5.87	Feb. 26	5.28	Apr. 26	6.35	June 28	6.68
12	5.32	28	5.33	May 3	6.60	Aug. 2	b 11.30
13	c 4.6	Mar. 2	5.04	17	9.19	30	10.24
Feb. 9	5.63	8	4.83	31	8.16	Sept. 27	8.31
16	5.74	15	4.86	June 7	8.34	Nov. 2	8.74
23	5.26	29	6.90	15	8.90	30	7.77
24	5.30	Apr. 11	a 26.14	21	9.30	Dec. 29	7.19
25	5.33	13	6.62				

a Pumping.

b Nearby well pumping.

7/34-28R2 (*991, p. 166). Geol. Survey, U. S. Dept. of Interior.
A. C. Zvolanek property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	4.57	Feb. 28	3.19	May 17	4.50	Aug. 9	6.11
12	4.55	Mar. 2	2.70	23	a 4.57	16	a 6.25
18	4.53	8	2.88	31	4.62	23	6.23
Feb. 9	4.27	15	3.13	June 7	4.84	30	6.31
16	4.28	29	3.51	15	5.01	Sept. 6	6.33
23	3.02	Apr. 11	a 3.81	21	5.15	27	6.30
24	2.98	18	3.98	28	5.24	Nov. 2	6.25
25	3.06	26	4.14	July 19	5.54	30	5.83
26	3.00	May 3	4.22	Aug. 2	5.95	Dec. 29	5.80

a Nearby well pumping.

7/34-30A1 (*991, p. 166). G. P. Sanor. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	16.94	Mar. 29	18.86	June 15	a 26.95	Aug. 16	25.63
12	16.97	Apr. 11	a 23.51	21	a 25.99	23	a 27.32
18	14.58	18	a 23.03	28	a 26.29	30	a 26.73
Feb. 9	16.62	26	a 24.93	July 5	24.39	Sept. 6	25.72
16	a 19.78	May 3	21.25	12	a 26.08	27	24.54
23	16.35	10	21.32	19	a 27.02	Nov. 2	23.15
Mar. 2	15.76	17	22.58	Aug. 2	a 29.30	30	21.07
8	15.42	31	a 23.86	9	a 27.24	Dec. 29	20.64
15	17.21	June 7	a 25.44				

a Nearby well pumping.

7/34-30R1 (*949, p. 218; *991, p. 166). Mrs. E. Manfrina. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 2	15.92	June 28	a 20.39	Sept. 27	a 19.21	Nov. 30	16.70
Apr. 26	a 18.13	Aug. 2	17.51	Nov. 2	17.02	Dec. 29	16.30
May 31	16.74	30	17.37				

a Nearby well pumping.

7/34-31C1 (*941, p. 157; *949, p. 218; *991, p. 167). Union Sugar Co. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Mar. 2	13.59	Aug. 30	a 27.99	Nov. 2	20.54	Dec. 29	17.48
Apr. 26	a 24.76	Sept. 27	a 25.58	30	17.15		
May 31	a 24.62						

a Nearby well pumping.

7/34-32R2 (*941, p. 157; *949, p. 218; *991, p. 167). Lewis Bros. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Jan. 5	21.99	Mar. 29	a 25.23	June 7	27.12	Aug. 16	26.03
12	22.08	Apr. 11	21.75	15	a 27.44	23	25.18
18	21.99	18	23.24	21	26.78	30	26.15
Feb. 9	21.75	26	a 25.03	28	a 27.39	Sept. 6	25.98
16	21.82	May 3	22.72	July 5	27.06	27	a 27.59
23	21.36	10	22.88	12	26.98	Nov. 2	a 28.71
Mar. 2	20.68	17	a 26.03	19	a 27.85	30	24.38
8	20.30	23	24.95	Aug. 2	26.34	Dec. 29	25.23
15	20.24	30	25.32	9	25.64		

a Nearby well pumping.

7/34-34A1 (*949, p. 219; *991, p. 167). Mary Skaarup. In Lower Santa Ynez Valley.

7/34-34A1. Mary Skaarup--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	29.08	Mar. 2	29.39	May 17	32.37	Aug. 9	31.96
12	29.94	8	30.39	31	32.91	16 b	40.22
18	30.00	15	28.99	June 7	30.34	23	30.75
Feb. 9 a	31.06	29	30.56	28	34.84	Sept. 6	31.49
16	31.69	Apr. 11 a	30.35	July 5	32.52	27	30.87
23	31.00	18	30.92	12	32.22	Nov. 2	31.26
24	29.61	26	30.01	19	30.92	30	30.84
25 a	33.07	May 3	23.69	Aug. 2	30.84	Dec. 29	30.62
28	29.54						

a Pumping.

b Nearby well pumping.

7/34-34F1. Geol. Survey, U. S. Dept. of Interior. Fred S. Anderson property. In Lower Santa Ynez Valley, in northeast Lompoc, 125 feet west of "A" Street, 65 feet south of Pine Avenue, 20 feet northwest of frame dwelling, 5 feet east of driveway. Bored observation well, diameter 2 inches, measured depth 35.8 feet. Unconfined water in alluvial sand and silt. Measuring point, top north side of casing, 2.25 feet above land-surface datum and 106.80 feet above sea-level datum of 1929. Measurements discontinued after July 12.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	35.01	Feb. 25	34.74	Mar. 29	34.38	May 23	34.70
18	35.00	26	34.73	Apr. 11	34.39	31	34.77
Feb. 9	34.87	28	34.71	18	34.28	June 7	34.87
16	34.84	Mar. 2	34.65	26	34.49	15	35.02
23	34.80	8	34.60	May 3	34.57	21	34.98
24	34.80	15	34.51	17	34.68	July 12	35.25

7/34-34H1 (*949, p. 220; *991, p. 167). Mrs. M. Balaam. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	36.58	Feb. 26	35.97	May 23 a	36.80	Aug. 9 a	39.01
12	36.54	28	35.85	31 a	38.79	16 a	39.35
18	36.67	Mar. 2	35.75	June 7 a	38.70	23	37.75
Feb. 9	36.50	8	35.51	15 a	39.40	30	37.87
16	36.35	15	35.48	21 a	39.44	Sept. 6	37.92
22	36.14	29	35.55	28 a	39.10	27	37.90
23	36.09	Apr. 26 a	39.02	July 5 a	39.08	Nov. 2	38.41
24	36.03	May 3	36.31	19 b	37.96	30	37.56
25	36.02	17	36.52	Aug. 2	37.53	Dec. 29	37.39

a Nearby well pumping.

b Pumping recently.

7/34-34H2 (*991, p. 167). Geol. Survey, U. S. Dept. of Interior. Mrs. Mary Skaarup property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	36.00	Feb. 28	35.43	May 23 a	36.00	Aug. 9 a	36.91
12	35.99	Mar. 2	35.44	31 a	36.37	16 a	37.12
18	35.94	8	35.19	June 7 a	36.54	23	37.00
Feb. 9	35.83	15	35.00	15 a	36.70	30	36.97
16	35.81	29	35.00	21 a	36.82	Sept. 6	36.92
22	35.69	Apr. 11 a	35.64	28 a	36.77	27	36.94
23	35.69	18 a	36.07	July 5 a	36.77	Nov. 2	37.02
24	35.57	26 a	36.38	12 a	36.92	30	36.72
25	35.52	May 3	35.93	19	36.92	Dec. 29	36.45
26	35.47	17	35.82	Aug. 2	36.72		

a Nearby well pumping.

7/34-34J1. Geol. Survey, U. S. Dept. of Interior. E. Schuyler property. In Lower Santa Ynez Valley, about 1.0 mile nearly east-northeast of Lompoc, 270 yards west of First Street, 20 feet south of Southern Pacific Railroad, 5 feet southwest of 2-inch steel standpipe. Bored observation well, diameter 2 inches, measured depth 38.3 feet. Unconfined water in alluvial sand and silt. Measuring point, top south side of casing, 3.25 feet above land-surface datum and 117.76 feet above sea-level datum of 1929.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	37.52	Mar. 2	36.23	May 31	36.29	Aug. 9	36.43
18	36.46	8	36.12	June 7	36.34	16	36.52
Feb. 9	36.45	15	35.95	15	36.47	23	36.61
16	36.41	29	35.81	21	36.48	30	36.65
22	34.95	Apr. 11	35.84	28 a	36.36	Sept. 6	36.64
23	36.35	18	35.95	July 5	36.06	27	36.75
24	36.34	26	36.05	12	36.01	Nov. 2	36.92
25	36.32	May 3	36.28	19	36.05	30	36.90
26	36.27	17	36.25	Aug. 2	36.33	Dec. 29	36.87
28	36.28	23	36.23				

a Nearby well pumping.

7/34-34K4 (*991, p. 168). Geol. Survey, U. S. Dept. of Interior. Fred Houk property. In Lower Santa Ynez Valley. Measurements discontinued after June 21.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	40.78	Feb. 24	40.68	Mar. 15	40.57	May 17	40.53
12	40.88	25	40.70	29	40.60	23	40.52
18	40.84	26	40.66	Apr. 11	40.39	31	40.62
Feb. 9	40.83	28	40.72	18	40.41	June 7	40.64
16	40.78	Mar. 2	40.56	26	40.45	15 a	40.76
22	40.56	8	40.66	May 3	40.48	21	40.77
23	40.69						

a Nearby well pumping.

7/34-35B1 (*991, p. 168). Antonio Mattias. In Lower Santa Ynez Valley. No measurements made in 1944; measurements discontinued.

7/34-35B2 (*991, p. 168). U. S. Geological Survey. A. G. Hibbits property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	12.72	Feb. 28	12.38	Apr. 26	12.17	June 15	12.59
12	12.75	Mar. 2	12.32	May 3	12.13	Sept. 6	12.96
18	12.70	8	12.25	17	12.34	27	13.80
Feb. 9	12.70	15	12.12	23	12.33	Nov. 2	13.50
16	12.70	29	11.83	31 a	12.36	30	13.10
23	12.40	Apr. 11	11.80	June 7	12.41	Dec. 29	12.95
24	12.42	18	11.92				

a Nearby well pumping.

7/34-35C2 (*991, p. 168). Geol. Survey, U. S. Dept. of Interior. Valla Bros. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	13.50	Mar. 8	12.93	May 31	12.77	Aug. 9	13.43
12	13.54	15	12.73	June 7	12.85	16	13.47
18	13.54	29	12.47	15	12.83	23	13.55
Feb. 9	13.48	Apr. 11	12.40	21	12.89	30	13.60
16	13.47	18	12.39	28	12.97	Sept. 6	13.67
23	13.16	26	12.37	July 5	13.06	27	13.85
24	13.17	May 3	12.40	12	13.13	Nov. 2	14.00
28	13.14	17	12.61	18	13.26	30	13.85
Mar. 2	13.03	23	12.68	Aug. 2	13.36	Dec. 29	13.75

7/34-35C3 (#991, p. 168). Geol. Survey, U. S. Dept. of Interior.
Mrs. Mary Skaarup property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date		Water level	Date		Water level	Date	Water level
Jan. 5	15.05	Mar. 15	13.55	June 7	14.94	Aug. 9	15.58
12	15.11	29	14.08	15	15.05	16	15.65
18	15.10	Apr. 11	14.40	21	15.15	23	15.58
Feb. 9	14.80	18	14.39	28	15.25	Sept. 6	15.68
16	14.84	26	14.60	July 5	15.33	27	15.83
23	12.58	May 3	14.57	12	15.32	Nov. 2	15.64
28	13.76	17	14.79	19	15.35	30	15.39
Mar. 2	13.52	23	14.86	Aug. 2	15.46	Dec. 29	15.27
8	13.29	31	14.97				

7/34-35D3 (#991, p. 169). Geol. Survey, U. S. Dept. of Interior.
Mrs. Mary Skaarup property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date		Water level	Date		Water level	Date	Water level
Jan. 5	7.03	Mar. 2	5.49	May 31	7.33	Aug. 9	7.87
12	7.27	8	5.34	June 7	7.43	16	7.97
18	7.31	15	5.60	15	7.52	23	7.96
Feb. 9	7.12	29	6.23	21	7.61	30	7.93
16	7.22	Apr. 11 a	6.66	28	7.69	Sept. 6	7.84
23	4.13	18	6.92	July 5	7.70	27	7.99
24	4.50	26 a	7.18	12	7.76	Nov. 2	7.84
25	4.98	May 3	6.99	19	7.84	30	7.48
26	5.13	17	7.10	Aug. 2	7.77	Dec. 29	7.33
28	5.72	23 a	7.17				

a Nearby well pumping.

7/34-35D5 (#991, p. 169). Geol. Survey, U. S. Dept. of Interior.
Mrs. Mary Skaarup property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date		Water level	Date		Water level	Date	Water level
Jan. 12	32.13	Feb. 24	35.13	Apr. 26 a	35.50	June 15 a	35.10
18	33.78	25	35.00	May 17	31.95	21 a	35.40
Feb. 9	35.39	26	34.89	23 a	32.95	28 a	35.69
16	35.40	28	33.77	31	33.93	July 5	36.01
22	35.40	Apr. 11 a	34.21	June 7 a	34.56	19	36.10
23	35.35	18 a	34.75				

a Nearby well pumping.

7/34-35F2 (#991, p. 169). Valla Bros. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date		Water level	Date		Water level	Date	Water level
Jan. 5	17.13	Mar. 8	15.18	June 7 a	17.08	Aug. 9 a	17.57
12	17.12	15	15.52	15	17.03	16 a	17.53
18	19.16	29	16.16	21	17.15	Sept. 6 a	17.46
Feb. 9	16.87	Apr. 11	16.96	28	17.35	27	17.58
16	17.05	26 a	18.08	July 12	17.38	Nov. 2	17.47
28	15.65	May 3	16.71	19 a	17.43	30	17.38
Mar. 2	15.69	31 a	16.99	Aug. 2	17.42	Dec. 29	17.24

a Nearby well pumping.

7/34-35F5 (#991, p. 169). M. Schuyler. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date		Water level	Date		Water level	Date	Water level
Jan. 5	38.99	Feb. 28	37.76	May 23	39.10	Aug. 9	39.95
12	39.03	Mar. 2	37.55	31 a	39.75	16	40.18
18	39.37	8	37.33	June 7 a	40.35	23 a	40.83
Feb. 9	38.81	15	37.50	15	39.57	30	39.94
16	38.87	29	38.05	21 a	40.70	Sept. 6	39.71
22	36.65	Apr. 11 a	39.97	28 a	40.98	27 a	40.63
23	36.88	18 a	40.24	July 5 a	40.33	Nov. 2	39.69
24	37.21	May 3	38.76	12 a	40.49	30	39.42
25	37.44	17 a	39.92	Aug. 2	39.58	Dec. 29	39.23
26	37.54						

a Nearby well pumping.

7/34-35F6 (*991, p. 170). Geol. Survey, U. S. Dept. of Interior.
M. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	37.86	Feb. 28	36.42	May 23	37.88	Aug. 9	38.67
12	37.94	Mar. 2	36.27	31 a	37.97	16	38.90
18	37.92	8	36.06	June 7 a	38.35	23 a	38.88
Feb. 9	37.70	15	36.20	15	38.21	30	38.79
16	37.80	29	36.88	21 a	38.59	Sept. 6	38.54
22	36.09	Apr. 11 a	37.78	28 a	39.03	27 a	38.78
23	35.91	18	38.03	July 5 a	38.80	Nov. 2	38.52
24	35.97	26 a	38.17	12	38.60	30	38.23
25	36.13	May 3	37.81	19 a	39.30	Dec. 29	38.12
26	36.22	17 a	38.10	Aug. 2	38.47		

a Nearby well pumping.

7/34-35F8 (*991, p. 170). Geol. Survey, U. S. Dept. of Interior.
Valla Bros. property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	16.68	Mar. 29	15.49	June 15	15.70	Aug. 16 a	16.68
12	16.72	Apr. 11	15.78	21	16.11	23 a	16.92
18	16.70	18	15.97	28	16.40	30 a	16.59
Feb. 9	16.54	26 a	16.09	July 5 a	16.59	Sept. 6 a	16.69
16	16.62	May 3	15.97	12	16.39	27	16.99
28	15.54	17	15.79	19 a	16.57	Nov. 2	17.01
Mar. 2	15.46	23 a	16.15	Aug. 2	16.42	30	16.85
8	15.22	31 a	16.26	9 a	16.77	Dec. 29	16.81
15	15.12	June 7 a	16.34				

a Nearby well pumping.

7/34-35F10 (*991, p. 170). Geol. Survey, U. S. Dept. of Interior.
M. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	6.84	Feb. 28	5.07	May 17	6.79	July 19	7.50
12	6.90	Mar. 2	4.72	23	6.81	Aug. 2	7.37
18	6.92	8	4.69	31	6.90	9	7.47
Feb. 9	6.73	15	5.04	June 7	7.02	16	7.55
16	6.87	29	5.89	15	7.09	23	7.53
23	2.64	Apr. 11 a	6.39	21	7.21	30	7.51
24	3.70	18	6.59	28	7.55	Sept. 6	7.40
25	4.40	26 a	6.76	July 5	7.34	27 a	7.55
26	4.64	May 3	6.60	12	7.33	Nov. 2	7.42

a Nearby well pumping.

7/34-35F12 (*991, p. 170). Geol. Survey, U. S. Dept. of Interior.
M. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	5.15	Mar. 8	2.90	May 31 a	5.25	Aug. 9	5.82
12	6.22	15	3.28	June 7 a	5.42	16	5.93
18	4.65	29	4.21	15 a	5.44	23	5.93
Feb. 9	4.99	Apr. 11 a	4.83	21 a	5.64	30	5.90
16	5.06	18	5.05	28	5.87	Sept. 6	5.76
24	1.67	26 a	5.17	July 5	5.80	27 a	5.90
25	2.57	May 3	4.94	12	5.73	Nov. 2	5.75
26	2.93	17	5.21	19 a	5.94	30	5.45
28	3.35	23	5.17	Aug. 2	5.70	Dec. 29	5.28
Mar. 2	2.96						

a Nearby well pumping.

7/34-35K2 (*949, p. 221; *991, p. 171). Mrs. M. McDonald. In Lower Santa Ynez Valley.

7/34-35K2. Mrs. M. McDonald--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	10.04	Mar. 29	8.79	June 15	a 12.89	Aug. 16	a 12.34
12	10.99	Apr. 11	a 11.90	21	11.27	23	11.04
18	9.99	18	a 9.52	28	10.57	30	10.96
Feb. 9	9.36	26	a 12.83	July 5	10.73	Sept. 6	10.64
16	9.36	May 3	9.83	12	12.02	27	12.73
23	9.54	17	9.57	19	11.08	Nov. 2	10.63
Mar. 2	9.09	31	10.34	Aug. 2	12.01	30	10.25
8	8.34	June 7	10.32	9	a 13.01	Dec. 29	10.15
15	8.68						

a Nearby well pumping.

7/34-35K6 (*991, p. 171). Geol. Survey, U. S. Dept. of Interior.
A. Dettamanti property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	8.15	Mar. 8	6.00	May 31	8.17	Aug. 9	8.73
12	8.23	15	6.28	June 7	7.37	16	8.73
18	8.23	29	7.15	15	8.25	23	8.74
Feb. 9	7.91	Apr. 11	7.60	21	8.44	30	8.79
16	8.04	18	7.73	28	8.55	Sept. 6	8.72
24	4.83	26	7.93	July 5	8.51	27	8.79
26	5.96	May 6	7.79	12	8.57	Nov. 2	8.69
28	6.39	17	7.99	19	8.63	30	8.33
Mar. 2	6.25	23	8.03	Aug. 2	8.73	Dec. 29	8.27

7/34-35K7 (*991, p. 171). Geol. Survey, U. S. Dept. of Interior.
W. P. and N. L. Robinson property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	5.24	Mar. 2	3.18	May 23	5.21	Aug. 2	5.66
12	5.29	8	3.13	31	5.28	9	5.70
18	5.32	15	3.60	June 7	5.38	16	5.73
Feb. 9	5.02	29	4.40	15	5.40	23	5.82
16	5.16	Apr. 11	4.30	21	5.56	30	5.74
24	2.27	18	4.96	28	5.67	Sept. 6	5.69
25	3.15	26	5.02	July 5	5.64	27	5.73
26	3.42	May 3	4.88	12	5.63	Nov. 2	5.67
28	3.78	17	5.21	19	5.67		

7/34-35L1 (*991, p. 171). E. Schuyler. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	37.31	Aug. 16	38.52	Sept. 6	38.74	Nov. 30	37.53
June 15	37.49	30	38.29	Nov. 2	37.76	Dec. 29	37.30
Aug. 2	37.85						

7/34-35L2 (*991, p. 172). Geol. Survey, U. S. Dept. of Interior.
M. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	6.36	Feb. 28	4.97	May 17	a 6.43	July 19	a 6.94
12	6.44	Mar. 2	4.55	23	6.45	Aug. 2	6.95
18	6.41	8	4.40	31	a 6.49	9	7.01
Feb. 9	6.16	15	4.83	June 7	a 6.60	16	7.05
16	6.30	29	5.69	15	6.70	23	a 7.05
23	1.45	Apr. 11	a 6.08	21	a 6.86	30	7.02
24	3.01	18	6.26	28	a 6.96	Sept. 6	6.93
25	3.96	26	a 6.23	July 5	6.93	27	a 6.99
26	4.46	May 3	6.15	12	6.89	Nov. 2	6.86

a Nearby well pumping.

7/34-35L3 (*991, p. 172). Geol. Survey, U. S. Dept. of Interior.
M. Schuyler property. In Lower Santa Ynez Valley.

7/34-35L3. M. Schuyler--Continued.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	5.73	Mar. 15	4.31	May 31	a 6.07	Aug. 2	6.52
12	5.79	29	5.14	June 7	a 6.47	9	6.71
18	5.80	Apr. 11	a 6.13	15	6.24	16	6.84
Feb. 24	2.74	18	6.32	21	a 6.85	23	6.89
25	3.74	26	a 6.16	28	a 7.22	30	6.72
26	4.00	May 3	5.82	July 5	6.95	Sept. 6	6.50
28	4.43	17	6.19	12	a 6.72	27	a 6.71
Mar. 2	4.10	23	6.01	19	6.99	Nov. 2	6.43
8	3.93						

a Nearby well pumping.

7/34-35M1 (*991, p. 172). Geol. Survey, U. S. Dept. of Interior.
E. Schuyler property. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	37.32	Feb. 28	36.69	May 23	37.16	Aug. 9	37.49
12	37.35	Mar. 2	36.64	31	a 37.20	16	37.70
18	37.30	8	36.44	June 7	a 37.36	23	37.73
Feb. 9	37.31	15	36.30	15	37.52	30	37.88
16	37.22	29	36.38	21	37.54	Sept. 6	37.68
22	37.08	Apr. 11	36.82	28	a 37.79	27	a 37.80
23	36.97	18	37.06	July 5	a 37.43	Nov. 2	37.81
24	36.87	26	a 37.23	12	a 37.22	30	37.55
25	36.79	May 3	37.22	19	a 37.26	Dec. 29	37.55
26	36.74	17	a 37.24	Aug. 2	37.42		

a Nearby well pumping.

7/34-35N1 (*949, p. 221; *991, p. 172). E. Schuyler. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	a 37.30	Mar. 8	37.30	May 31	36.54	Aug. 9	35.45
12	36.54	15	36.53	June 7	36.65	16	36.20
18	a 37.14	29	36.35	15	36.74	23	36.26
Feb. 9	37.02	Apr. 11	36.25	21	36.87	30	36.44
16	a 36.98	18	36.29	28	32.60	Sept. 6	35.97
24	36.33	26	36.36	July 5	32.89	27	36.55
25	36.97	May 3	36.47	12	33.70	Nov. 2	38.14
28	36.90	17	36.52	19	34.37	30	37.03
Mar. 2	36.83	23	36.52	Aug. 2	36.66	Dec. 29	37.14

a Pumping recently.

7/34-35P1 (*949, p. 221; *991, p. 172). W. P. and N. L. Robinson.
In lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
(From float gage)							
Jan. 5	37.12		34.45		37.50		37.18
	37.12		35.01	Apr. 11	37.34		37.21
	37.17	Feb. 25	35.01		37.34	May 31	37.18
12	37.17		35.01		37.73		37.18
	37.16		35.46	18	37.70		37.86
	37.18	28	35.42		37.31	June 7	37.74
18	37.17	Mar. 2	35.20	37.87	37.87		37.38
	37.13		35.00	26	37.32		37.89
	37.18		35.98		36.92	15	37.38
25	37.13	8	35.97		37.36		37.37
Feb. 9	36.83		35.29	May 3	36.93		37.92
	36.87		36.07		36.93	21	37.92
	37.00	15	35.30		37.64		37.92
16	37.00		35.28	17	37.57		39.10
	34.46		36.25		37.20	28	38.82
	37.01	29	36.25		37.66		38.36
23	34.46		36.18	23	37.20		38.93

a Undated entries are highest and lowest levels between dates of observation.

7/34-35Pl. W. P. and N. L. Robinson--Continued.

Water level, in feet below land-surface datum, 1944 ^{a/}							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 5	38.36		37.76		38.15		37.75
	37.82		38.31		38.59		38.65
	38.38	Aug. 9	38.02	Aug. 30	38.23	Nov. 2	37.75
July 12	38.01		38.02		37.94		37.26
	37.83		38.64		38.23		38.97
	38.18	16	38.39	Sept. 6	37.94	30	37.35
19	37.85		37.99		37.86		37.23
	37.75		38.61		38.30		37.36
	38.61	23	38.39	27	37.92	Dec. 29	37.27
Aug. 2	37.76						

a Undated entries are highest and lowest levels between dates of observation.

7/35-18J1 (*941, p. 158; *949, p. 222; *991, p. 173). War Department, Camp Cooke Military Reservation. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	1.30	Aug. 2	2.20	Sept. 27	0.81	Nov. 30	1.32
May 31	2.57	30	1.62	Nov. 2	.37	Dec. 29	.72
June 28	2.45						

7/35-20J1 (*949, p. 223; *991, p. 173). War Department, Camp Cooke Military Reservation. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	5.75	June 28	7.67	Sept. 27	8.02	Nov. 30	7.70
Apr. 26	6.99	Aug. 2	7.96	Nov. 2	8.04	Dec. 29	7.48
May 31	7.32	30	8.01				

7/35-23N1 (*949, p. 224; *991, p. 174). Union Sugar Co. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	10.49	Apr. 26	14.18	Aug. 2	18.07	Nov. 2	13.49
Feb. 16	10.77	May 31	15.87	30	12.99	30	11.64
Mar. 2	9.96	June 23	17.54	Sept. 27	12.47	Dec. 29	11.32
29	a 19.15						

a Pumping.

7/35-24K1 (*949, p. 225; *991, p. 175). A. B. Henning. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	20.50	May 31	23.05	Nov. 30	19.04		
Apr. 26	a 30.56	Sept. 27	22.02	Dec. 29	19.41		

a Nearby well pumping.

7/35-24K2 (*949, p. 225; *991, p. 175). A. B. Henning. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 2	20.18	Aug. 30	a 24.16	Nov. 30	18.20		
May 31	21.56	Sept. 27	21.61	Dec. 29	19.01		

a Nearby well pumping.

7/35-26J3 (*949, p. 226; *991, p. 175). County of Santa Barbara, Artesia School District. In Lower Santa Ynez Valley.

7/35-26J3. County of Santa Barbara, Artesia School District--Continued

Water level at noon, in feet below land-surface datum, 1944
(From recorder charts)

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	7.24	Apr. 5	9.88	July 5	a 14.40	Oct. 5	10.38
10	7.52	10	a 10.86	10	13.09	10	11.47
15	7.78	15	a 14.66	15	13.83	15	a 12.27
20	7.10	20	a 20.40	20	a 17.90	20	10.86
25	6.90	25	a 22.70	25	a 16.05	25	11.36
31	7.09	30	10.36	31	a 14.90	31	11.12
Feb. 5	7.18	May 5	9.10	Aug. 5	a 16.55	Nov. 5	8.94
10	7.29	10	a 9.90	10	a 17.06	10	a 12.20
15	7.38	15	a 13.90	15	15.74	15	7.78
20	6.78	20	a 13.90	20	14.90	19	8.39
25	6.10	25	11.63	25	a 16.45	30	7.70
29	6.03	31	11.15	31	14.28	Dec. 5	8.50
Mar. 5	6.08	June 5	a 14.30	Sept. 5	a 15.20	10	9.39
10	6.03	10	a 14.45	10	a 17.42	15	a 10.91
15	6.77	15	a 12.02	15	a 16.78	20	a 17.26
20	7.40	20	13.50	20	12.60	25	8.78
25	8.73	25	13.90	25	11.76	31	7.51
31	10.50	30	a 18.35	30	10.84		

a Nearby well pumping.

7/35-27C2 (*941, p. 160; *949, p. 226; *991, p. 176). Southern Pacific Railroad. In Lower Santa Ynez Valley.

Water level, in feet below land-surface datum, 1944 ^a/_(From float gage)

Jan. 5	10.01		7.96		9.85		10.81
	9.91		8.23		9.96		12.53
	10.01	Mar. 22	8.23	May 31	9.93	Aug. 9	10.88
12	9.91		8.23		9.90		10.94
	9.80		8.98		10.07		11.11
	9.91	29	8.98	June 7	10.04	16	11.05
18	9.74		8.71		10.04		10.99
	9.71		9.52		10.50		11.21
	9.84	Apr. 11	9.13	15	10.50	23	11.03
25	9.71		9.11		10.46		10.91
	9.00		9.54		10.61		11.06
	9.90	18	9.54	21	10.60	30	10.95
Feb. 9	9.03		9.53		10.60		10.85
	8.96		9.81		10.98		10.96
	9.16	26	9.79	28	10.96	Sept. 6	10.93
16	9.15		9.10		10.95		10.65
	8.20		10.06		11.32		11.05
	9.19		9.16	July 5	11.19	27	10.75
23	8.21	May 3	9.03		10.79		10.59
	7.91		9.64		11.58		10.79
	8.22	10	9.63	12	10.87	Nov. 2	10.60
Mar. 2	7.91		9.63		10.86		10.17
	7.89		10.19		11.13		10.65
	7.97	17	10.16	19	11.07	30	10.22
8	7.92		9.91		10.67		10.11
	7.86		10.34		11.86		10.24
	7.99	23	9.91	Aug. 2	b 11.86	Dec. 29	10.21
15	7.99						

a Undated entries are highest and lowest levels between dates of observation.

b Nearby well pumping.

7/35-36E3 (*991, p. 176). Southern Pacific Milling Co. In Lower Santa Ynez Valley.

7/35-36E3. Southern Pacific Milling Co.--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	14.31	Mar. 29	13.04	June 7	15.58	Aug. 16	19.02
12	14.22	Apr. 11	13.50	15	16.97	23	18.47
18	14.18	18	13.97	21	15.76	30	18.09
Feb. 9	13.83	26	14.36	28	17.44	Sept. 6	17.51
16	13.85	May 3	14.08	July 5	16.89	27	18.99
23	13.09	10	14.72	12	18.70	Nov. 2	17.68
Mar. 2	12.61	17	14.75	19	19.53	30	15.97
8	12.47	23	14.78	Aug. 2	16.74	Dec. 29	15.80
15	12.42	31	14.71	9	17.29		

8/32-30K2. John Parma. In San Antonio Valley, at west edge of Los Alamos, 200 feet south of U. S. Highway 101, and 60 feet west of Den Street, 45 feet south of frame pump house painted white. Abandoned drilled irrigation well, diameter 16 inches, reported depth 100 feet. Confined water in alluvial gravel and sand. Measuring point, top south side of casing, 1.50 feet above land-surface datum and about 556 feet above mean sea level.

Water level, in feet above land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Dec. 2, 1943	+1.00	June 1, 1944	+1.09	Sept. 28, 1944	+0.93
Jan. 12, 1944	+0.97	29	+1.01	Nov. 1	+0.20
Feb. 29	+1.16	Aug. 3	+1.04	29	+0.40
Apr. 26	+1.14	31	+1.02	Dec. 28	+1.12

8/33-20K1. Virginia Barca. In San Antonio Valley, about 5.2 miles nearly west of Los Alamos, 75 feet south of Harris-Los Alamos Road, 250 feet west of paved T-road south, 20 feet west of frame dwelling, 15 feet north of wood tank and tower, in corrugated-steel pump house. Drilled irrigation well, diameter 16 inches, reported depth 351 feet. Confined water in older alluvium. Measuring point, top north side of pump base through hole, 0.50 foot above land-surface datum and about 410 feet above mean sea level.

Water level, in feet below land-surface datum, 1943-44

Dec. 3, 1943	6.39	June 29, 1944	b 50.11	Nov. 1, 1944	7.28
Feb. 29, 1944	4.27	Aug. 3	9.11	29	5.37
Apr. 26	a 15.12	31	b 49.35	Dec. 28	4.99
June 1	b 44.79	Sept. 28	14.58		

a Pumping recently.

b Pumping.

8/33-20R1. Virginia Barca. In San Antonio Valley, about 5.1 miles nearly west of Los Alamos, 150 feet south of Harris-Los Alamos Road, 35 feet east of paved T-road south, 60 feet west of stucco dwelling, 15 feet west of frame tank house, beneath metal windmill tower. Drilled domestic well, diameter 10 inches, reported depth 75 feet. Probably unconfined water in younger alluvium. Measuring point, top east side of casing, 1.50 feet above land-surface datum and about 412 feet above mean sea level.

Water level, in feet below land-surface datum, 1943-44

Dec. 3, 1943	25.25	Aug. 3, 1944	25.26	Nov. 1, 1944	26.34
June 1, 1944	a 25.61	31	b 27.80	29	25.55
29	a 26.70	Sept. 28	26.18	Dec. 28	25.16

a Nearby well pumping.

b Pumping.

8/34-23B1. Josephine Harris Estate. In San Antonio Valley, about 8.3 miles nearly west of Los Alamos, 0.28 mile south of Harris-Los Alamos Road, 100 feet west of State Highway 1, 60 feet north of frame dwelling, 40 feet south of San Antonio Creek. Abandoned drilled industrial well, diameter 12 inches, reported depth 150 feet. Measuring point, top east side of casing, 2.00 feet above land-surface datum and about 312 feet above mean sea level.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Dec. 4, 1943	13.54	June 1, 1944	a 12.54	Sept. 28, 1944	a 13.76
Jan. 12, 1944	a 13.25	29	a 12.88	Nov. 1	a 13.68
Feb. 29	a 12.19	Aug. 3	a 13.74	29	13.36
Apr. 26	a 12.55	31	a 13.64	Dec. 28	13.18

a Nearby well pumping.

9/24-19Q1 (*941, p. 146; *949, p. 237; *991, p. 177). Arthur Davis (owner erroneously indicated as U. S. Forest Service in Water-Supply Papers 941 and 949). In Cuyama Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 1	30.85	June 27	17.39	Sept. 26	20.87	Nov. 28	22.61
Apr. 25	16.20	July 27	18.73	Oct. 31	21.90	Dec. 27	23.20
May 30	16.13	Aug. 29	19.98				

9/32-7N1 (*941, p. 147; *949, p. 228; *991, p. 177). Valerio Tognazzini. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1 a 43.44	Apr. 1 a 37.52	June 29 b 54.46	Nov. 1	41.43
28 44.20	27 34.62	July 1 ac 36.83	29	43.40
Feb. 29 43.87	June 1 b 54.28	Oct. 1 a 42.33	Dec. 28	43.05
a By Santa Maria Valley Water Conservation District.				
b Pumping.				
c Pumping recently.				

9/32-17G1 (*949, p. 228; *991, p. 177). E. C. Lyman. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 28 25.28	June 1 a 15.83	Aug. 31 b 30.93	Nov. 29	22.30
Feb. 29 22.30	29 17.25	Sept. 28 b 20.25	Dec. 28	23.53
Apr. 27 11.91	Aug. 3 b 24.67	Nov. 1 b 26.88		

a Pumping.

b Nearby well pumping.

9/33-2A1 (*941, p. 147; *949, p. 229; *991, p. 178). Santa Maria Realty Co. In Santa Maria Valley. Land-surface datum is about 378 feet above mean sea level (by aneroid levels, 1944).

Water level, in feet below land-surface datum, 1944

Jan. 1 a 31.00	Apr. 27 24.90	Aug. 3 b 33.88	Nov. 1	30.58
28 31.35	June 1 24.61	Sept. 28 29.86	29	30.81
Feb. 29 29.46	29 26.14	Oct. 1 a 29.70	Dec. 28	31.11
Apr. 1 a 24.83	July 1 a 26.33			

a By Santa Maria Valley Water Conservation District.

b Pumping.

9/34-3N3 (*941, p. 148; *949, p. 229; *991, p. 178). City of Santa Maria well 3. In Santa Maria Valley. Land-surface datum is about 253 feet above mean sea level (by aneroid levels, 1944). Measured by city of Santa Maria.

Water level, in feet below land-surface datum, 1944

Jan. 31 150.8	Apr. 30 151.0	July 31 150.1	Oct. 31 149.4
Feb. 29 150.3	May 31 151.0	Aug. 31 149.6	Nov. 30 149.4
Mar. 31 150.3	June 30 150.1	Sept. 30 149.4	Dec. 31 149.2

10/25-30F1 (*949, p. 238; *991, p. 178). H. S. Russell. In Cuyama Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 1	49.33	May 30	50.14	July 28	a 50.35	Dec. 27	49.05
Apr. 25	49.46	June 27	50.20	Nov. 28	48.67		

a Pumping recently.

10/26-18F1 (*941, p. 146; *949, p. 238; *991, p. 178). H. S. Russell. In Cuyama Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Mar. 1	53.47	Oct. 31	58.70	Dec. 27	54.72
June 27	a 55.65	Nov. 28	55.45		

a Nearby well pumping.

10/26-22A1 (*941, p. 146; *949, p. 238; *991, p. 178). H. S. Russell. In Cuyama Valley.

Water level, in feet with reference to land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 1	+0.51	June 27	a-10.69	Sept. 26	a-14.11	Nov. 28	-0.66
Apr. 25	-1.42	July 27	a-15.12	Oct. 31	-2.64	Dec. 27	-1.18
May 30	-1.65	Aug. 29	a-22.14				

a Nearby well pumping.

10/27-12R1 (*941, p. 147; *949, p. 238; *991, p. 178). H. S. Russell. In Cuyama Valley.

Water level, in feet below land-surface datum, 1944

Mar. 1	39.45	May 30	a 58.30	July 26	a 59.56	Nov. 28	40.86
Apr. 25	38.68	June 27	a 57.60	Oct. 31	42.37	Dec. 27	39.95

a Pumping.

10/33-7R2. P. T. Bonetti. In Santa Maria Valley, about 3.0 miles east of Santa Maria, 1.5 miles east of Suey Road, 50 feet north of East Main Street, 60 feet south of barn, beneath metal windmill tower. Drilled domestic well, diameter 8 inches, reported depth 100 feet. Unconfined water in alluvial gravel and sand. Measuring point, top south side of casing, 0.50 foot above land-surface datum and about 272 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

June 29	63.91	Aug. 31	71.76	Nov. 1	76.76	Dec. 28	80.05
Aug. 3	68.49	Sept. 28	74.05	29	78.48		

10/33-18G1 (*949, p. 229; *991, p. 173). La Brea Securities Co. well 8. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 78.30; Apr. 1, 83.00 (pumping recently); July 1, 84.32 (pumping recently); Oct. 1, 80.10.

10/33-19B1 (*941, p. 148; *949, p. 229; *991, p. 179). Owen T. Rice. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	a 76.25	Apr. 27	78.29	Aug. 3	77.52	Nov. 1	79.57
28	76.65	June 1	b 93.92		cd 73.5	29	79.05
Feb. 29	77.55	29	b 95.30	Sept. 28	78.49	Dec. 23	79.60
Apr. 1	a 78.40	July 1	ac 77.25	Oct. 1	a 78.67		

a By Santa Maria Valley Water Conservation District.

b Pumping.

c Pumping recently.

d By San Joaquin Power Division, Pacific Gas & Electric Co.

10/33-20N2. T. B. Adam Estate. In Santa Maria Valley, about 3.6 miles nearly east-southeast of Santa Maria, 200 yards north of Rice Road, 175 feet east of Telephone Road extended, 40 feet south of terrace edge, 15 feet west of wood tank and tower, beneath metal windmill tower. Drilled stock well, diameter 8 inches, reported depth 175 feet. Unconfined water in older alluvium. Measuring point, top north side of casing, 1.95 feet above land-surface datum and about 322 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 29	a 127.70	Aug. 31	a 128.57	Nov. 1	127.56	Dec. 28	127.70
Aug. 3	127.98	Sept. 28	127.85	29	127.46		

a Nearby well pumping.

10/33-21N2. Frank Costa, Jr. In Santa Maria Valley, about 4.5 miles nearly east-southeast of Santa Maria, 0.4 mile west of Santa Maria Valley Railroad, 70 feet north of State Highway 140, 10 feet north of frame dwelling. Abandoned drilled irrigation well, diameter 16 inches, reported depth 215 feet. Unconfined water in alluvial gravel and sand. Measuring point, top east side of casing, 1.50 feet above land-surface datum and about 308 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

June 29	a 67.14	Aug. 31	a 70.98	Nov. 1	70.56	Dec. 28	71.62
Aug. 3	a 69.59	Sept. 28	a 72.01	29	71.07		

a Nearby well pumping.

10/33-27G1 (#949, p. 230; #991, p. 179). W. C. Adam. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 43.00; Apr. 1, 34.60; July 1, 32.45; Oct. 1, 44.60 (pumping recently).

10/33-27K1 (#941, p. 149; #949, p. 230; #991, p. 179). Newhall Land & Farming Co. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944 ^{a/}

(From float gage)

Feb. 4	42.18		30.63		34.46	Nov. 1	43.76
	37.86	June 1	29.63		38.71		43.70
	42.16		29.57	Aug. 31	b 38.71		43.90
29	37.86		31.90		38.71	29	43.89
	30.63	29	b 31.90		41.55		43.89
	37.86		31.87	Sept. 28	b 41.55		44.72
Apr. 27	30.63		36.46		41.55	Dec. 28	44.51
	29.06	Aug. 3	b 36.46		43.76		

a Undated entries are highest and lowest levels between dates of observation.

b Nearby well pumping.

10/33-28A1 (#949, p. 230; #991, p. 179). Joe Soares. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	a 46.60	Apr. 27	40.28	July 1	ab 40.63	Oct. 1	a 47.40
28	47.56	June 1	38.67	Aug. bd	49.5	Nov. 29	49.05
Feb. 29	47.83	29	c 70.15	Sept. 28	47.35	Dec. 28	49.93
Apr. 1	ab 43.60						

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

c Pumping.

d By San Joaquin Power Division of Pacific Gas & Electric Co.

10/33-31A1 (#991, p. 179). M. Fleisher & Co. In Santa Maria Valley. Measurements discontinued after Dec. 28.

10/33-31A1. M. Fleisher & Co.--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 29	130.08	Aug. 4 a	138.50	Sept. 28	130.11	Nov. 29	129.78
Apr. 27	130.19	31 a	138.18	Nov. 1	129.90	Dec. 28	129.81
June 29 a	137.47						

a Pumping recently.

10/33-34H1. Dan Donovan Estate. In Santa Maria Valley, about 1.3 miles nearly northwest of Garey, 0.3 mile south of State Highway 140, 60 feet west of right-of-way of Pacific Coast Railway (abandoned), in field. Drilled irrigation well, diameter 16 inches, reported depth 416 feet. Unconfined water in alluvial gravel and sand. Measuring point, top north side of pump base through hole, 0.50 foot above land-surface datum and about 352 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
June 29	41.90	Sept. 28	50.41	Nov. 29	53.67
Aug. 31	47.72	Nov. 1	53.00	Dec. 28	54.21

10/33-35B1. Newhall Land & Farming Co. In Santa Maria Valley, about 1.2 miles nearly north-northwest of Garey, 0.5 mile east of right-of-way of Pacific Coast Railway (abandoned), 30 feet north of State Highway 140, in field. Drilled irrigation well, diameter 12 inches, measured depth 124.3 feet. Unconfined water in alluvial gravel and sand. Measuring point, bottom south edge of pump base, 0.50 foot above concrete foundation and land-surface datum, and about 350 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 29	19.75	Aug. 31	29.76	Nov. 1	35.03	Dec. 28	33.93
Aug. 3	26.28	Sept. 28	32.54	29	33.24		

10/34-2R1 (*949, p. 231; *991, p. 179). Gracio Apalatequi. Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1 a	80.80	June 1	73.98	Aug. 29	79.92	Nov. 1	82.81
Feb. 29	82.30	27	76.04	Sept. 26	81.62	28	83.55
Apr. 1 a	70.52	July 1 a	76.60	Oct. 1 a	81.60	Dec. 27	84.36
25	73.75	Aug. 3	78.01				

a By Santa Maria Valley Water Conservation District.

10/34-6N1 (*949, p. 231; *991, p. 180). Grisingher & Signorelli. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1 a	48.55	July 1 a	51.78	Aug. 31	53.12	Nov. 29	50.34
Apr. 1 ab	50.47	Aug. 3	52.33	Oct. 1 ab	54.20	Dec. 28	49.66
June 29	51.72						

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

10/34-8Q1 (*991, p. 180). Sawdey & Hunt. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Feb. 29	61.19	June 1	62.83	Aug. 3 a	64.93	Nov. 1	65.11
Apr. 27	62.20	29	63.84	Sept. 28	65.56	Dec. 28	62.86

a Pumping recently.

10/34-9F1 (#991, p. 180). Mrs. A. E. Preisker. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 73.78; Apr. 1, 70.62 (pumping recently); July 1, 72.03; Oct. 1, 79.62 (pumping recently).

10/34-14E3 (#941, p. 151; #949, p. 231; #991, p. 180). City of Santa Maria. In Santa Maria Valley. Measurements by city of Santa Maria, except as indicated.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	96.33	Apr. 16	96.04	July 16	96.95	Oct. 15	98.51
9	96.15	23	96.33	23	97.08	22	98.23
16	95.96	26 a	96.38	30	97.40	29	98.25
23	95.81	30	96.31	Aug. 3	a 97.41	Nov. 1	a 98.19
28 a	95.80	May 7	96.19	6	97.62	5	98.08
Feb. 6	95.73	14	96.06	13	97.75	12	97.94
13	95.60	21	96.12	20	97.90	19	97.79
20	95.48	28	96.10	27 b	98.38	26	97.60
27	95.46	June 1	a 96.01	29 a	97.91	29 a	97.52
29 a	95.45	4	96.25	Sept. 3	98.00	Dec. 3	97.56
Mar. 5	95.46	11	96.26	10	98.08	10	97.50
12	95.40	18	96.38	17	98.12	17	97.40
19	95.46	25	96.52	24	98.08	24	97.08
29 ab	96.47	27 a	96.50	28 a	98.18	27 a	96.98
Apr. 2	95.83	July 2	96.64	Oct. 1	98.21	31	96.96
9	95.92	9	96.90				

a By Geological Survey.

b Nearby well pumping.

c Nearby well pumping recently.

10/34-20H1. Ullisse Tognazzini. In Santa Maria Valley, about 2.5 miles nearly west-southwest of Santa Maria, 1.3 miles south of State Highway 168, 0.9 mile east of Casmaia Road, 70 feet north of Santa Maria Valley Railroad, 10 feet east of concrete reservoir, in corrugated-steel pump house. Drilled irrigation well, diameter 16 inches, reported depth 246 feet. Unconfined water in alluvial gravel and sand. Measuring point, bottom west edge of pump base through hole, 0.70 foot above land-surface datum and about 183 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
June 29	a 86.36	Nov. 1	69.15	Dec. 28	67.11
Sept. 28	69.63	29	67.90		

a Pumping.

10/34-22R1 (#949, p. 232; #991, p. 180). George J. Wheat. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	ab 97.20	June 1	94.44	Aug. 31	96.13	Nov. 1	95.61
Feb. 29	93.64	29	95.19	Sept. 28	95.89	29	94.58
Apr. 1	a 96.20	July 1	a 95.00	Oct. 1	ab 95.90	Dec. 28	93.97
26	94.30	Aug. 3	95.82				

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

10/34-23H1 (*949, p. 232; *991, p.181). Marion B. Rice. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	a 106.00	Apr. 1	a 104.75	Aug. 31	107.26	Nov. 1	106.96
28	105.17	27	105.60	Sept. 28	107.11	29	106.34
Feb. 29	104.63	July 1	a 105.57	Oct. 1	a 107.20	Dec. 28	105.87

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

10/34-31F1. Union Sugar Co. In Santa Maria Valley, about 1.2 miles nearly southeast of Betteravia, 1.0 mile south of Betteravia-Santa Maria Road, 0.7 mile west of Casmallia Road, 100 feet north of ranch road, in field. Abandoned drilled irrigation well, diameter 10 inches, reported depth 175 feet. Unconfined water in terrace gravel and sand. Measuring point, top west side of casing, level with concrete foundation and land-surface datum, and about 179 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

June 1	76.81	Aug. 3	77.82	Sept. 28	79.10	Nov. 29	78.10
29	77.35	31	79.22	Nov. 1	78.73	Dec. 28	77.25

10/35-7F1 (*941, p. 152; 949, p. 232; *991, p. 181). M. J. Ellis. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	(ab)	June 1	2.78	Aug. 31	7.29	Nov. 1	1.57
Feb. 29	(b)	29	5.34	Sept. 28	7.31	29	(b)
Apr. 1	ac 5.10	July 1	a 5.10	Oct. 1	a 6.63	Dec. 28	(b)
27	1.37	Aug. 3	8.62				

a By Santa Maria Valley Water Conservation District.

b Flowing.

c Pumping recently.

10/35-7G3 (*949, p. 233; *991, p. 131). John Jenkins. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944 ^{a/}
(From float gage)

Feb. 29	4.18		10.61		11.86		5.81
	3.24		16.38		b 18.07		b 13.40
	b 14.42	June 29	b 16.38	Sept. 28	12.81	Nov. 29	6.77
Apr. 27	10.03	Aug. 3	16.25		9.56		5.67
	6.17		12.56		b 16.95		9.72
	b 14.54		b 19.63	Nov. 1	9.76	Dec. 28	5.67
June 1	10.04	31	14.82				

a Undated entries are highest and lowest levels between dates of observation.

b Nearby well pumping.

10/35-9F1 (*941, p. 152; *949, p. 233; *991, p. 181). Waller-Franklin Seed Co. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	a 14.50	June 1	b 41.90	Aug. 31	25.91	Nov. 1	21.20
Feb. 29	13.74	29	b 44.04	Sept. 28	23.35	29	16.20
Apr. 1	a 18.80	July 1	ac 26.42	Oct. 1	a 24.25	Dec. 28	15.49
27	20.06	Aug. 3	26.56				

a By Santa Maria Valley Water Conservation District.

b Pumping.

c Pumping recently.

10/35-9N1 (#949, p. 234; #991, p. 181). Agnes King. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 13.55; Apr. 1, 22.97 (pumping recently); July 1, 32.30 (pumping recently); Oct. 1, 25.05.

10/35-12M1 (#949, p. 234; #991, p. 181). E. and G. LeRoy. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	a 38.50	June 1	44.85	Aug. 31	47.46	Nov. 1	43.79
Feb. 29	37.50	July 1	a 47.10	Sept. 28	46.49	29	40.82
Apr. 1	ab 44.60	Aug. 3	47.55	Oct. 1	a 46.70	Dec. 28	39.23
27	39.79						

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

10/35-21B1 (#949, p. 234; #991, p. 182). C. P. Mathison. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	a 9.26	June 1	15.95	Aug. 3	c 53.60	Nov. 1	17.50
Feb. 29	7.85	29	19.81	Sept. 28	18.13	29	11.58
Apr. 1	a 14.20	July 1	ab 24.60	Oct. 1	a 20.10	Dec. 28	9.27
27	13.94						

a By Santa Maria Valley Water Conservation District.

b Pumping recently.

c Pumping.

10/35-24B1 (#941, p. 152; #949, p. 234; #991, p. 182). Union Sugar Co. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	a 44.44	June 1	b 47.27	Aug. 31	48.74	Nov. 1	48.77
Feb. 29	42.55	29	c 58.45	Sept. 28	b 50.26	29	44.60
Apr. 1	a 46.67	July 1	a 49.50	Oct. 1	ab 51.42	Dec. 28	43.53
27	44.91	Aug. 3	49.80				

a By Santa Maria Valley Water Conservation District.

b Nearby well pumping.

c Pumping.

11/28-17L1 (#949, p. 238; #991, p. 182). Seers Ranch. In Guyama Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 1	19.77	June 27	19.51	Sept. 28	20.05	Nov. 28	19.86
Apr. 25	19.65	July 26	19.92	Oct. 31	20.03	Dec. 27	19.82
May 30	19.70	Aug. 29	20.22				

11/34-29P1 (#949, p. 235; #991, p. 182). A. Guerra. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944							
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 29	41.27	June 29	41.46	Sept. 28	47.19	Nov. 29	47.36
June 1	41.69	Aug. 3	a 52.05	Nov. 1	47.16	Dec. 28	47.84

a Nearby well pumping.

11/34-30Q1 (#949, p. 235; #991, p. 182). Mary Bolton. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 44.60; Apr. 1, 44.30 (pumping recently); July 1, 47.10 (pumping recently); Oct. 1, 46.50.

11/35-20E1 (#941, p. 153; #949, p. 235; #991, p. 182). Union Sugar Co. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	a 11.00	June 1	6.68	Aug. 31	5.95	Nov. 1	5.10
Feb. 29	(b)	29 de	93.18	Sept. 28	8.15	29	.26
Apr. 1	ac 44.75	July 1	a 7.83	Oct. 1	a 8.20	Dec. 28	.05
27	5.91						

a By Santa Maria Valley Water Conservation District.

b Flowing.

c Pumping recently.

d Pumping.

e Below mean sea level.

11/35-25H1. M. J. Mendoza. In Santa Maria Valley, about 5.4 miles nearly northwest of Santa Maria, 0.7 mile east of Bonita Road, 250 feet southeast of two-story frame dwelling, 30 feet north of Guadalupe-Nipomo Road. Abandoned drilled irrigation well, diameter 16 inches, reported depth 129 feet. Unconfined water in alluvial gravel and sand. Measuring point, top north side of casing, level with concrete foundation, 0.70 foot above land-surface datum and about 136 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

June 29	33.42	Aug. 31	33.49	Nov. 1	35.19	Dec. 28	35.46
Aug. 3	33.62	Sept. 28	34.40	29	35.31		

11/35-26M2. Sam Tognazzini. In Santa Maria Valley, about 3.7 miles nearly north-northeast of Guadalupe, 0.5 mile west of Y-junction of Oso Flaco Road and Guadalupe-Nipomo Road, 50 feet north of Oso Flaco Road, 40 feet east of irrigation well 26M1. Abandoned drilled irrigation well, diameter 14 inches, reported depth 324 feet. Probably confined water in alluvial gravel and sand. Measuring point, top south side of casing, 0.50 foot below top of concrete foundation, and 1.00 foot above land-surface datum and about 107 feet above mean sea level.

Water level, in feet below land-surface datum, 1944

June 29	33.66	Aug. 31	a 41.68	Nov. 1	33.62	Dec. 28	29.15
Aug. 3	a 36.16	Sept. 28	a 41.06	29	28.92		

a Nearby well pumping.

11/35-28M1 (#949, p. 236; #991, p. 182). Union Sugar Co. In Santa Maria Valley. Measurements made by Santa Maria Valley Water Conservation District. Water levels, in feet below land-surface datum, 1944: Jan. 1, 11.71; Apr. 1, 14.00; July 1, 27.33; Oct. 1, 28.50 (pumping recently).

11/35-33G1 (#949, p. 236; #991, p. 183). H. E. Pezzoni. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	a 17.60	June 1	b 30.06	Aug. 31	26.70	Nov. 1	23.80
Feb. 29	16.49	29	26.95	Sept. 28	25.20	29	18.35
Apr. 1	a 20.48	July 1	ac 25.30	Oct. 1	a 26.60	Dec. 28	18.35
27	22.41	Aug. 3	b 35.12				

a By Santa Maria Valley Water Conservation District.

b Pumping.

c Pumping recently.

11/35-35A1 (#949, p. 236; #991, p. 183). Bello Estate. In Santa Maria Valley.

Water level, in feet below land-surface datum, 1944

Jan. 1	a 33.70	July 1	a 36.60	Aug. 31	b 38.88	Nov. 1	b 37.81
Apr. 1	a 32.38	Aug. 3	b 38.05	Oct. 1	a 38.60	29	b 35.23
June 29	36.45						

a By Santa Maria Valley Water Conservation District.

b Nearby well pumping.

HAWAII

By H. T. Stearns

INTRODUCTION

Cooperation was continued with the Hawaii Division of Hydrography. The systematic study of the geology and ground-water resources of the island of Hawaii was completed and a report is in preparation. A systematic study of the geology and ground-water resources of the island of Kauai was begun in November. Special investigations were made for the armed forces in the Territory and in the Western Pacific war theater, and confidential reports on ground-water conditions and rock supplies in these areas were submitted to the War Department.

The total ground-water draft during 1944 for the Territory of Hawaii was about 226 billion gallons (about 624,000 acre-feet, or an average of about 620 million gallons a day). This was about 24 billion gallons more than the total pumpage reported for 1943, but of this almost three-fourths of a billion gallons is pumpage from Oahu not previously included in the report. All islands showed an increase in pumpage except Maui, but virtually all of the total increase occurred on Oahu where severe drought conditions existed throughout the year. The average rainfall over the Territory was 57.81 inches, which is 4.57 inches less than the average for last year and 15.90 inches below normal.

RECORDS OF ARTESIAN HEAD, WATER LEVEL, AND PUMPAGE

The tables in this report set forth data on ground-water conditions in the Territory in 1944, such as artesian head, water level, and the chloride content of the waters. In the section on Oahu is a table listing, by name and number, the artesian areas on that island and giving the time of high and low artesian heads in each; in the records that follow, these areas are referred to by the numbers shown in this table. At the end of the report is a table showing, by pumping plants, the ground-water draft in the Territory during the year.

In the tables of well records, the measurements of artesian head or water level are given, in feet, with reference both to mean sea level and to land-surface datum. They are listed in two columns, designated A and B--those in A being referred to mean sea level and those in B to land-surface datum. The symbol + in Column B indicates that the artesian head or water level is above land-surface datum; no symbol indicates below land-surface datum. In some of the wells the measurement given is the water level; in others it is the height to which the water would rise in a casing or tube as indicated by the shut-in pressure.

ISLAND OF OAHU

During 1944 the Geological Survey made 320 measurements of artesian head and 406 determinations of chloride on 162 wells in the island of Oahu, 19 of which were measured monthly. The Board of Water Supply, City and County of Honolulu, made 136 measurements of artesian head in 90 wells, 46 of which were measured more than once. Automatic water-stage recorders were maintained by the Geological Survey on 2 wells throughout the year and by the Board of Water Supply on 12 wells.

The drought became more severe in 1944. Average rainfall on Oahu for the year amounted to 51.48 inches, which is 14.04 inches less than in 1943 and 17.37 inches below normal. Most of the wells in the 12 artesian areas showed losses in underground storage, and during the year the head in wells indicative of artesian conditions in areas 2, 3, 4, and 5 dropped below the previous all-time lows of 1926. Total pumpage for the island amounted to about 155 billion gallons. Of this, about three-fourths of a billion gallons was pumpage not previously included. Comparison of pumpage during 1944 with that of 1943, on the basis of the data included in the 1943 report, shows that the 1944 pumpage exceeded that of 1943 by about 24 billion gallons.

The Halawa shaft (U.S.G.S. shaft 12), belonging to the Honolulu Board of Water Supply, was completed and put in operation on August 22.

Time of high and low heads in artesian areas and net gain or loss in static head, in feet, as shown by typical wells on the island of Oahu, 1944

(*777, p. 47; 817, p. 35; 840, p. 58; 845, p. 55; 886, p. 81; 911, p. 138; 941, p. 170; 949, p. 241; 991, p. 186).

Area	Name	Well High	Low	Net gain or loss
1	St. Louis Heights	2 March	September	+0.57

Artesian head in feet, in five wells in the Honolulu District, 1944--Cont.

(Mean daily measurements furnished by Board of Water Supply, City and County of Honolulu, from recorder charts)

Area	1		2		3		4		5	
Well	2		83		132		144		1A	
Altitude(ft.)	37		27		43		26		18	
	A	B	A	B	A	B	A	B	A	B
15	23.68	13.32	.....	.....	25.55	17.45	22.71	3.29	8.71	9.29
22	23.34	13.66	.....	.....	25.38	17.62	.....	.....	.....	.....
29	.....	.....	25.75	1.25	.....	.....	22.77	3.23	8.60	9.40
Feb. 5	22.92	14.08	25.63	1.37	25.26	17.74	.....	.....	.....	.....
12	.....	.....	.....	.....	25.48	17.52	.....	.....	8.56	9.44
19	.....	.....	25.74	1.26	.....	.....	.....	.....	8.63	9.37
26	23.51	13.49	25.79	1.21	25.63	17.37	23.27	2.73	8.67	9.33
Mar. 5	24.07	12.93	25.97	1.03	25.85	17.15	23.60	2.40	8.78	9.22
12	24.33	12.67	26.09	.91	26.02	16.98	23.82	2.18	8.77	9.23
19	24.20	12.80	26.22	.78	26.19	16.81	24.00	2.00	8.77	9.23
26	24.30	12.70	26.37	.63	26.33	16.67	.....	.....	8.77	9.23
Apr. 2	24.11	12.89	26.54	.46	26.47	16.53	24.04	1.96	.....	.....
9	24.13	12.87	26.63	.37	26.50	16.50	23.96	2.04	8.66	9.34
16	23.89	13.11	26.68	.32	26.58	16.42	23.52	2.48	8.63	9.37
23	23.75	13.25	26.64	.36	26.46	16.54	23.25	2.75	.....	.....
30	23.29	13.71	26.56	.46	26.33	16.67	23.07	2.93	.....	.....
May 7	22.89	14.11	26.35	.65	26.07	16.93	22.82	3.18	.....	.....
14	22.71	14.29	26.15	.85	.....	.....	22.55	3.45	.....	.....
21	.....	.....	25.98	1.02	25.64	17.36	22.43	3.57	.....	.....
28	22.02	14.98	25.77	1.23	25.30	17.70	22.26	3.74	.....	.....
June 4	21.84	15.16	25.61	1.39	25.10	17.90	22.17	3.83	.....	.....
11	21.58	15.42	25.44	1.56	25.07	17.93	22.05	3.95	.....	.....
18	21.52	15.48	25.32	1.68	25.04	17.96	21.93	4.07	.....	.....
25	21.24	15.76	25.13	1.87	24.76	18.24	.....	.....	.....	.....
July 2	21.19	15.81	.....	.....	24.67	18.33	21.79	4.21	.....	.....
9	20.99	16.01	.....	.....	24.57	18.43	21.75	4.25	.....	.....
16	20.98	16.02	.....	.....	24.45	18.55	.....	.....	.....	.....
23	20.80	16.20	.....	.....	24.25	18.75	.....	.....	.....	.....
30	20.63	16.37	24.30	2.70	24.09	18.91	.....	.....	.....	.....
Aug. 6	20.40	16.60	24.08	2.92	23.98	19.02	21.40	4.60	.....	.....
13	.....	.....	.....	.....	23.78	19.22	21.27	4.73	.....	.....
20	19.89	17.11	.....	.....	23.67	19.33	.....	.....	.....	.....
27	19.96	17.04	.....	.....	23.63	19.37	.....	.....	.....	.....
Sept. 3	19.81	17.19	23.69	3.31	23.67	19.33	20.94	5.06	.....	.....
10	.....	.....	23.74	3.26	23.60	19.40	20.93	5.07	.....	.....
17	19.72	17.28	.....	.....	23.47	19.53	20.82	5.18	.....	.....
24	20.01	16.99	23.79	3.21	23.66	19.34	20.86	5.14	.....	.....
Oct. 1	20.12	16.88	23.66	3.34	23.41	19.59	20.76	5.24	.....	.....
8	20.47	16.53	23.63	3.37	23.50	19.50	20.80	5.20	.....	.....
15	21.07	15.93	23.60	3.40	23.46	19.54	20.75	5.25	.....	.....
22	21.71	15.29	23.51	3.49	.....	.....	20.76	5.24	.....	.....
29	21.87	15.13	23.47	3.53	23.23	19.77	20.75	5.25	.....	.....
Nov. 5	22.14	14.86	23.44	3.56	.....	.....	20.94	5.16	.....	.....
12	22.62	14.38	23.59	3.41	.....	.....	20.94	5.06	.....	.....
19	22.96	14.04	23.57	3.43	.....	.....	20.90	5.10	.....	.....
26	23.00	14.00	.....	.....	.....	.....	.....	.....	.....	.....
Dec. 3	23.14	13.86	23.70	3.30	.....	.....	20.80	5.20	.....	.....
10	.....	.....	.....	.....	.....	.....	20.89	5.11	.....	.....
17	23.72	13.28	23.79	3.21	.....	.....	20.94	5.06	.....	.....
24	23.95	13.05	23.85	3.15	23.60	19.40	21.04	4.96	.....	.....
31	24.44	12.56	.....	.....	23.77	19.23	.....	.....	.....	.....

Artesian head, in feet, and chloride, in parts per million, in typical wells on Oahu, 1944

Well 1B (area 5) (*777, p. 50; *817, p. 37; 840, pp. 56, 61; 845, p. 57; 886, p. 83; 911, p. 139; 941, p. 172; 949, p. 243; *991, p. 188). Bishop Estate. On north side of Waiialae Golf Links, Kaimuki.

Well 1B (area 5)--Continued.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 25	8.54	9.68	222	July 26	8.22	10.00	200
Feb. 23	8.62	9.60	181	Aug. 22	8.19	10.03	194
Mar. 23	8.80	9.42	188	Sept. 27	8.14	10.08	195
Apr. 27	8.52	9.70	191	Oct. 28	8.08	10.16	194
May 25	8.27	9.95	188	Nov. 27	8.12	10.10	206
June 22	8.28	9.94	191	Dec. 27	8.20	10.02	193

Well 9 (area 1) (*777, p. 49; 817, p. 37; 840, pp. 56, 62; 845, p. 27; 886, p. 83; 911, p. 139; 941, p. 172; 949, p. 243; *991, p. 188).

Jan. 24	23.19	+7.11	56	July 25	19.98	+3.90	54
Feb. 23	23.59	+7.51	53	Aug. 22	19.62	+3.61	53
Mar. 21	24.10	+8.02	55	Sept. 26	20.00	+3.92	50
Apr. 29	23.28	+7.20	52	Oct. 28	21.81	+5.73	53
May 24	21.98	+5.90	52	Nov. 27	22.61	+5.53	53
June 22	21.38	+5.30	54	Dec. 27	24.22	+8.14	55

Well 81 (area 2) (*777, p. 49; 817, p. 37; 840, pp. 56, 62; 845, p. 57; 886, p. 83; 911, p. 139; 941, p. 172; 949, p. 243; *991, p. 188). A. Young. On Young Street, Honolulu.

Jan. 24	25.84	+7.80	42	July 25	24.23	+6.19	40
Feb. 23	25.64	+7.60	42	Aug. 22	23.45	+5.41	38
Mar. 21	26.08	+8.04	40	Sept. 26	23.65	+5.61	38
Apr. 26	26.48	+8.44	39	Oct. 28	23.36	+5.32	37
May 23	26.03	+7.99	37	Nov. 27	23.56	+5.52	37
June 22	25.23	+7.19	38	Dec. 27	23.65	+5.61	36

Well 119 (area 3) (*777, p. 49; *817, p. 37; 840, pp. 56, 62; 845, p. 57; 886, p. 83; 911, p. 139; 941, p. 172; 949, p. 243; *991, p. 188). Honolulu Gas Co. In Honolulu.

Jan. 25	23.14	+18.92	395	July 25	22.05	+17.83	420
Feb. 22	23.01	+18.79	368	Aug. 22	21.44	+17.22	382
Mar. 21	24.30	+20.08	385	Sept. 26	22.75	+18.53	359
Apr. 25	24.93	+20.71	385	Oct. 27	24.38	+20.16	378
May 23	23.53	+19.31	377	Nov. 28	22.16	+17.94	382
June 27	23.04	+18.82	382	Dec. 29	22.25	+18.03	401

a Meter test showed small leak in casing 60 feet below tee on well.

Well 153 (area 4) (*777, p. 50; 817, p. 37; 840, pp. 56, 62; 845, p. 58; 886, p. 83; 911, p. 140; 941, p. 173; 949, p. 243; *991, p. 188). S. Damon Estate. Moanalua Gardens, Honolulu.

Jan. 24	22.18	+1.80	60	July 26	21.48	+1.10	56
Feb. 21	22.97	+2.59	61	Aug. 25	20.99	+1.61	56
Mar. 21	23.88	+3.50	56	Sept. 28	20.75	+1.37	53
Apr. 27	23.01	+2.63	56	Oct. 28	20.67	+1.29	55
May 23	22.13	+1.75	56	Nov. 27	20.78	+1.40	56
June 28	21.73	+1.35	56	Dec. 27	20.97	+1.59	55

Well 187B (area 6) (*817, p. 37; 840, pp. 56, 62; 845, p. 58; 886, p. 83; 911, p. 140; 941, p. 173; 949, p. 243; *991, p. 189). U. S. Navy. Near Aiea railroad station.

Well 187B (area 6)--Continued.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 13	18.15	+8.22	...	Apr. 26	.....	....	146
24	.....	....	145	May 23	.....	....	156
Feb. 8	18.45	+8.52	...	June 22	.....	....	155
11	18.25	+8.32	...	July 25	.....	....	168
20	18.35	+8.42	...	Aug. 10	16.66	+6.73	...
23	.....	....	145	25	.....	....	171
29	19.15	+9.22	...	Sept. 26	.....	....	166
Mar. 3	19.55	+9.62	...	Oct. 28	.....	....	189
15	20.25	+10.32	...	Nov. 16	16.46	+6.53	...
23	.....	....	126	22	.....	....	191
27	20.55	+10.62	...	Dec. 27	.....	....	210

Well 190 (area 6) (*777, p. 51; *817, p. 37; 840, pp. 57, 62; 845, p. 58; 886, p. 83; 911, p. 140; 941, p. 173; 949, p. 243; *991, p. 189).
C. B. Cooper. Half a mile west of Aiea.

Jan. 24	18.60	4.13	78	July 25	17.43	5.30	83
Feb. 23	19.08	3.65	72	Aug. 18	16.93	5.80	86
Mar. 22	20.96	1.77	69	Sept. 26	16.30	6.43	93
Apr. 26	18.98	3.75	71	Oct. 28	16.55	6.18	108
May 23	18.20	4.53	74	Nov. 22	16.63	6.10	100
June 22	17.73	5.00	76	Dec. 27	17.23	5.50	102

Well 193 (area 6) (*777, p. 51; 817, p. 38; 840, pp. 57, 62; 845, p. 58; 886, p. 83; 911, p. 140; 941, p. 173; 949, p. 244; *991, p. 189).
L. L. McCandless Estate. In Waimalu Valley, 1 mile northwest of Aiea.

Jan. 24	17.71	+4.66	173	July 25	16.88	+3.83	161
Feb. 23	18.23	+5.18	168	Aug. 18	16.13	+3.08	148
Mar. 22	20.03	+6.98	173	Sept. 26	15.61	+2.56	145
Apr. 26	18.31	+5.26	168	Oct. 28	16.06	+3.01	143
May 23	17.31	+4.26	161	Nov. 22	16.11	+3.06	147
June 22	16.93	+3.88	151	Dec. 27	16.93	+3.88	152

Well 201 (area 6) (*777, p. 52; 817, p. 38; 840, pp. 57, 62; 845, p. 58; 886, p. 83; 911, p. 140; 941, p. 173; 949, p. 244; *991, p. 189).
Bishop Estate. Pearl City.

Jan. 24	16.82	+7.65	440	July 25	15.78	+6.61	358
Feb. 23	17.47	+8.30	460	Aug. 18	15.37	+6.20	361
Mar. 22	18.77	+9.60	610	Sept. 26	15.02	+5.85	326
Apr. 26	17.27	+8.10	564	Oct. 28	15.19	+6.02	312
May 23	16.36	+7.19	577	Nov. 22	15.23	+6.06	306
June 22	15.98	+6.81	403	Dec. 27	16.07	+6.90	356

Well 244 (area 6) (*777, p. 52; 817, p. 38; 840, pp. 57, 62; 845, p. 58; 886, p. 84; 911, p. 140; 941, p. 173; 949, p. 244; *991, p. 189).
Bishop Estate. Waipahu.

Jan. 24	18.17	+7.70	136	July 25	16.97	+6.50	123
Feb. 23	19.28	+8.81	134	Aug. 18	16.53	+6.06	120
Mar. 22	21.38	+10.91	122	Sept. 26	16.06	+5.59	119
Apr. 26	18.87	+8.40	126	Oct. 28	16.39	+5.92	120
May 23	17.47	+7.00	124	Nov. 22	16.45	+5.98	116
June 22	17.27	+6.80	121	Dec. 27	18.09	+7.63	124

Well 266 (area 6) (*777, p. 52; 817, p. 38; 840, pp. 57, 62; 845, p. 58; 886, p. 84; 911, p. 140; 941, p. 173; 949, p. 244; *991, p. 190). Honouliuli Ranch. 1.75 miles northeast of Ewa.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 22	15.73	+3.07	230	July 25	14.88	+2.22	234
Feb. 23	18.24	+5.58	220	Aug. 18	14.44	+1.78	224
Mar. 22	21.01	+8.35	186	Sept. 26	13.88	+1.22	236
Apr. 26	17.80	+5.14	189	Oct. 28	14.26	+1.60	238
May 23	15.46	+2.80	280	Nov. 22	14.48	+1.82	229
June 22	15.17	+2.51	219	Dec. 27	17.66	+5.00	234

Well 276 (area 11) (*817, p. 38; 840, pp. 57-63; 845, p. 58; 886, p. 84; 911, p. 140; 941, p. 174; 949, p. 244). Ewa Plantation Co. 4.5 miles west of Ewa. Measuring point is 14.06 feet above mean sea level, or 26.52 feet below land-surface datum. Records furnished by owner; figures are monthly averages.

1943

Jan.	14.48	26.10	507	July	12.77	27.61	606
Feb.	14.13	26.45	587	Aug.	(a)	(a)	607
Mar.	13.56	27.02	612	Sept.	12.59	28.19	608
Apr.	13.28	27.30	611	Oct.	12.53	28.05	609
May	13.42	27.16	601	Nov.	12.90	27.68	602
June	13.25	27.33	606	Dec.	12.63	27.95	597

1944

Jan.	12.80	27.78	601	July	12.43	28.15	598
Feb.	13.15	27.43	582	Aug.	(a)	(a)	602
Mar.	13.79	26.79	532	Sept.	11.79	28.79	604
Apr.	13.20	27.38	604	Oct.	12.11	28.47	603
May	11.89	28.69	598	Nov.	12.22	28.36	600
June	12.03	28.55	599	Dec.	12.34	28.24	580

a Pumps running.

Well 286 (area 12) (*777, p. 54; 817, p. 38; 840, pp. 57, 63; 845, p. 59; 886, p. 84; 911, p. 141; 941, p. 174; 949, p. 244; *991, p. 190). Waialua Agricultural Co., Mokuia.

Jan. 25	17.56	+5.57	148	July 26	17.10	+5.11	132
Feb. 25	17.94	+5.95	147	Aug. 23	17.08	+5.09	137
Mar. 24	18.19	+6.20	130	Sept. 27	17.04	+5.05	127
Apr. 27	17.31	+5.32	132	Oct. 30	17.15	+5.16	130
May 24	17.00	+5.01	126	Nov. 25	17.19	+5.20	130
June 23	16.95	+4.96	131	Dec. 21	17.30	+5.31	136

Well 308 (area 12) (*777, p. 54; 817, p. 38; 840, pp. 57, 63; 845, p. 59; 886, p. 84; 911, p. 141; 941, p. 174; 949, p. 244; *991, p. 190). J. F. Mendonca. 1.5 miles west of Waialua Mill.

Jan. 25	18.82	+10.36	121	July 26	19.98	+11.52	102
Feb. 25	19.46	+11.00	119	Aug. 23	18.27	+9.81	111
Mar. 24	19.57	+11.11	96	Sept. 27	18.38	+9.92	102
Apr. 27	18.46	+10.00	117	Oct. 30	18.49	+10.03	102
May 24	18.06	+9.60	115	Nov. 25	18.89	+10.43	97
June 23	18.06	+9.60	115	Dec. 21	19.08	+10.62	102

Well 326 (area 7) (*777, p. 52; 817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 84; 911, p. 141; 941, p. 174; 949, pp. 244, 245; *991, p. 190). Waialua Agricultural Co. About 0.5 mile south of Waialua.

Well 326 (area 7)--Continued.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 25	10.89	+4.70	77	July 26	10.39	+4.20	72
Feb. 25	11.24	+5.05	75	Aug. 23	9.97	+3.78	73
Mar. 24	11.39	+5.20	71	Sept. 27	10.00	+3.81	72
Apr. 27	10.29	+4.10	71	Oct. 30	9.80	+3.61	72
May 24	10.09	+3.90	71	Nov. 25	10.15	+3.96	69
June 23	9.99	+3.80	73	Dec. 21	10.09	+3.90	72

Well 337 (area 8) (*777, p. 53; 817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 84; 911, p. 141; 941, p. 174; 949, p. 245; *991, p. 190).
 Waialee Training School for Boys.

Jan. 25	13.87	7.58	152	July 26	12.89	8.64	97
Feb. 25	14.07	7.38	145	Aug. 23	12.75	8.70	99
Mar. 24	13.57	7.88	81	Sept. 19	13.05	8.40	106
Apr. 27	13.70	7.75	89	Oct. 30	13.30	8.15	109
May 24	13.23	8.22	89	Nov. 25	13.40	8.05	102
June 23	12.85	8.60	95	Dec. 21	12.71	8.74	108

Well 356 (area 8) (*777, p. 53; 817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 85; 911, p. 141; 941, p. 174; 949, p. 245; *991, p. 191).
 Kahuku Plantation Co. At sugar mill in Kahuku.

Jan. 25	11.81	+2.98	180	July 26	11.32	+2.49	194
Feb. 25	12.61	+3.78	181	Aug. 23	11.38	+2.55	204
Mar. 24	13.60	+4.77	168	Sept. 27	10.69	+1.86	203
Apr. 27	11.21	+2.38	188	Oct. 30	11.12	+2.29	189
May 24	10.57	+1.74	186	Nov. 25	12.42	+3.59	172
June 23	11.55	+2.72	180	Dec. 21	11.75	+2.92	173

Well 396 (area 8) (*777, p. 53; *817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 85; 911, p. 141; 941, p. 174; 949, p. 245; *991, p. 191).
 Kahuku Plantation Co. In Hauula.

Jan. 25	19.38	+9.02	58	July 26	18.43	+8.07	57
Feb. 25	19.09	+8.73	58	Aug. 23	17.93	+7.57	59
Mar. 24	20.26	+9.90	55	Sept. 27	17.74	+7.38	57
Apr. 27	19.30	+8.94	53	Oct. 30	18.22	+7.86	60
May 24	18.15	+7.79	57	Nov. 25	18.79	+8.43	62
June 23	18.62	+8.26	59	Dec. 21	18.70	+8.34	62

Well 405 (area 9) (*817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 85; 911, p. 141; *941, p. 174; 949, p. 245; *991, p. 191). M. E.
 Foster Estate. In Kahana.

Jan. 25	17.17	+11.41	44	July 26	16.49	+10.73	41
Feb. 25	16.76	+11.00	44	Aug. 23	16.47	+10.71	41
Mar. 24	17.17	+11.41	43	Sept. 27	16.08	+10.32	42
Apr. 27	16.86	+11.10	43	Oct. 30	15.99	+10.23	41
May 24	16.56	+10.80	41	Nov. 25	15.89	+10.13	43
June 23	16.17	+10.41	41	Dec. 21	15.98	+10.22	42

Well 406 (area 10) (*777, p. 53; 817, p. 39; 840, pp. 58, 63; 845, p. 59; 886, p. 85; 911, p. 141; 941, p. 175; 949, p. 245; *991, p. 191).
 F. M. Swanzy. In Kaaawa Valley.

Jan. 25	15.23	+4.96	213	Apr. 27	14.46	+4.19	194
Feb. 25	14.68	+4.41	206	May 24	14.20	+3.93	205
Mar. 24	14.79	+4.52	202	June 23	13.99	+3.72	204

Well 406 (area 10)--Continued.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
July 26	13.85	+3.58	218	Oct. 30	13.33	+3.06	222
Aug. 23	13.77	+3.50	224	Nov. 25	13.32	+3.05	226
Sept. 27	12.87	+2.60	224	Dec. 21	13.17	+2.90	228

Water levels, in feet, and chloride, in parts per million, in test borings in Oahu, 1944

Test boring Oahu T1 (tributary to area 12) (*845, p. 60; 886, p. 85; 911, p. 141; 941, p. 175; 949, p. 245; *991, p. 191). Waialua Agricultural Co. In Kuakonahua Gulch, 4 miles south of Waialua.

Date	Water level		Chloride	Date	Water level		Chloride
Jan. 5	17.25	256.36	31	July 31	16.16	257.45	21
Feb. 1	16.87	256.74	31	Sept. 2	15.95	257.66	21
Mar. 1	16.64	256.97	21	Oct. 2	16.41	257.20	21
Apr. 3	16.83	256.78	21	31	15.83	257.78	21
May 1	17.08	266.53	21	Nov. 30	16.16	257.45	21
31	16.82	256.99	21	Dec. 30	17.75	255.86	42
July 1	16.58	257.03	21				

Test boring Oahu T2 (tributary to area 7) (*845, p. 60; 886, p. 85; 911, p. 142; 941, p. 175; 949, p. 245; *991, p. 192). Waialua Agricultural Co. Near Anahulu Canyon, 3.5 miles east of Haleiwa.

Jan. 5	5.79	336.09	145	Aug. 1	8.41	333.47	125
Feb. 1	6.53	335.35	166	Sept. 1	5.74	336.14	145
Mar. 1	6.83	335.05	31	Oct. 2	7.01	334.87	83
Apr. 3	7.49	334.39	62	31	7.20	334.68	114
May 1	7.16	334.72	135	Nov. 30	5.76	336.12	114
31	12.62	329.26	114	Dec. 30	6.83	335.05	156
June 30	6.33	335.55	135				

Test boring Oahu T5 (tributary to area 11) (*886, p. 84; 911, p. 142; 941, p. 175; 949, p. 246; *991, p. 192). Suburban Water Works, Honolulu. 5 miles west of Ewa on main highway.

Jan. 26	4.64	74.49	585	July 27	4.25	74.88	525
Feb. 24	4.67	74.46	252	Aug. 23	4.17	74.96	477
Mar. 25	4.95	74.18	68	Sept. 28	4.31	74.82	487
Apr. 28	4.23	74.90	344	Oct. 31	4.18	74.95	535
May 25	4.08	75.05	458	Nov. 24	4.23	74.90	505
June 24	4.27	74.86	505	Dec. 28	4.43	74.70	503

Test boring Oahu T15 (*911, p. 142; 941, p. 175; 949, p. 246; *991, p. 192). Suburban Water Works, Honolulu. 1.8 miles above mouth of Nanakuli Gulch.

Jan. 26	2.22	476.42	105	July 27	1.94	476.70	94
Feb. 24	2.26	476.38	101	Aug. 23	1.88	476.76	94
Mar. 25	2.56	476.08	107	Sept. 28	1.98	476.66	91
Apr. 28	2.15	476.59	94	Oct. 31	2.04	476.60	94
May 25	2.09	476.55	93	Nov. 24	1.87	476.77	92
June 24	2.04	476.60	95	Dec. 28	2.06	476.58	91

Test boring Oahu T20 (tributary to area 6) (*991, p. 192). U. S. Navy. 2 miles northwest of Ewa on main highway to Waianae.

Jan. 26	17.45	122.05	295	Apr. 28	17.71	121.89	265
Feb. 24	17.60	121.90	264	May 25	17.17	122.33	248
Mar. 25	18.25	121.25	246	June 24	16.93	122.57	252

Test boring Oahu T20--Continued.

Date	Water level		Chloride	Date	Water level		Chloride
	A	B			A	B	
July 27	16.69	122.81	272	Oct. 31	16.48	123.02	242
Aug. 23	16.60	122.90	242	Nov. 24	16.48	123.02	240
Sept. 28	16.55	122.95	243	Dec. 28	16.90	122.60	234

ISLAND OF MAUI

The water levels in the wells owned by the Hawaiian Commercial & Sugar Co. and the Maui Agricultural Co. on the windward side of the island showed a net rise for the year of 0.02 to 0.22 foot. Water levels in three wells of the Pioneer Mill Co. on the leeward side of West Maui showed a further net decline in 1944 of 0.10 to 0.55 foot; and three wells showed a net rise of 0.06 foot to 1.46 feet. The chloride content in wells on the windward side of Maui was slightly higher than in 1943, except for four wells in which it was slightly lower. The chloride content in three wells on the leeward side of West Maui was higher than in 1943, and in three it was lower.

The East Maui Irrigation Co. ditch deliveries to the Isthmus amounted to 63.6 billion gallons in 1944, 1.7 billion gallons less than in 1943. The Hawaiian Commercial & Sugar Co. started its pumping season in January. One pump was closed in November and the others in December. The Maui Agricultural Co.'s pumping season began in January except for one pump which was started in February. Five pumps were shut down in November and the remainder in December. All the Pioneer Mill Co.'s pumps were started in January; two were closed in October and the others in December.

On December 27 temperature readings were made at the Puu Hele and Iao Valley test holes with a Taylor etched stem thermometer by Wesley Wong of the Wailuku Sugar Co. At 10:30 a.m. the temperature was 72° F. inside Puu Hele test hole and 70° F. outside. At 1:30 p.m. the temperature both inside and outside the hole was 73° F. Inside Iao Valley test hole the temperature was 72° F. at 2:30 p.m., and outside it was 70° F.

The data in the following table were furnished by R. E. Hughes, of the Hawaiian Commercial & Sugar Co., R. Bradley, of the Maui Agricultural Co., and J. T. Moir, Jr., of the Pioneer Mill Co.

Chloride, in parts per million, and water levels and net gain or loss in static level, in feet above sea level, on Maui, 1944

(*911, p. 143; 941, p. 176; 949, p. 247; *991, p. 193)

Location	Geol. Survey well no.	Chloride	Water level	
			Dec. 31	Gain or loss
Hawaiian Commercial & Sugar Co.				
1 (Kihei)	14	...	....	....
2	25	458	5.14	+0.22
3	22	356	4.07	+0.21
4	24	500	3.14	+0.08
5	19	430	4.29	+0.08
6	18	374	4.95	+0.12
7	16	312	5.25	+0.08
8	17	431	5.12	+0.18
3 (Kihei)	15	399	6.42	+0.02
Maui Agricultural Co.				
Lower Paia				
(pumps 1, 5, and 6)	30	520	4.42	+0.17
Kaheka (pumps 3 and 4)	27	283	5.21	+0.04
Paia School (pump 7)	28	294	4.12	+0.04
Mill (pumps 8 and 13)	29	453	4.54	+0.04
Kuau (pump 12)	31	294	4.37	+0.04
Pioneer Mill Co.				
Kaanapali	3	641	1.96	-0.11
Kahoma	5	511	1.97	-0.55
Lahaina	9	803	2.40	-0.10
Mill	7	1,001	3.25	+0.06
Olowalu	10	508	3.52	+0.32
Ukumehame	12	472	5.73	+1.46

Water levels, in feet, and chloride, in parts per million, in test borings on Maui, 1944
(Measurements furnished by Wailuku Sugar Co.)

Test boring Maui T102 (Iao Valley) (*911, p. 144; 941, p. 176; 949, p. 247; *991, p. 194). Geological Survey, U. S. Dept of Interior. In Iao Valley, 1 mile west of Wailuku.

Date	Water level		Chloride	Date	Water level		Chloride
	A	B			A	B	
Jan. 19	32.10	421.80	18	July 14	29.91	423.99	18
Feb. 18	30.81	423.09	17	Aug. 15	29.86	424.04	19
Mar. 15	30.70	423.20	17	Sept. 19	29.96	423.94	19
Apr. 14	30.82	423.08	18	Oct. 17	30.06	423.84	18
May 11	31.13	422.77	18	Nov. 14	29.80	424.10	22
June 16	29.87	424.03	18	Dec. 14	30.62	423.28	20

Note: The wire measuring device was checked on June 16 and was found to have stretched 2 feet since March 1941 when it was last calibrated. Apparently the stretching occurred about January-February 1943, as all records after then were 2 feet in error. Correction of the 2-foot error has been made in measurements for January-May 1944. Measurements between Mar. 16 and Dec. 16, 1943, Water-Supply Paper 991, in column A should probably be decreased 2 feet and in column B increased 2 feet, to correct this error in both test holes.

Test boring Maui T110 (Puu Hele) (*911, p. 143; 941, p. 177; 949, p. 247; *991, p. 194). Wailuku Sugar Co. 2 miles north of Maalaea.

Jan. 19	6.99	305.71	272	Apr. 14	7.34	305.36	287
Feb. 18	7.16	305.54	276	May 11	7.05	305.65	287
Mar. 15	7.34	305.36	278	June 16	7.19	305.51	289

Test boring Maui T110--Continued.

Date	Water level		Chloride	Date	Water level		Chloride
	A	B			A	B	
July 14	7.44	305.26	299	Oct. 17	6.78	305.92	299
Aug. 15	6.78	305.92	297	Nov. 14	6.98	305.72	297
Sept. 19	6.63	306.07	295	Dec. 14	7.26	305.44	299

ISLAND OF MOLOKAI

The water level in test boring T1 fluctuated between an all-time high of 6.52 feet in August to a low of 6.11 feet in December, and showed a net decline for the year of 0.16 foot. The chloride content continued high, ranging from 592 to 600 parts per million.

The water level in the Connant well varied only slightly from its stages of 1943, the highest measurement for the year being 1.00 foot in April and the lowest 0.75 foot in June and September. In the Kamalo well the water level showed little variation from its stages of 1943, ranging from 1.75 feet in March and August to 2.00 feet in October. Ualapue well showed a net decline over 1943, ranging from an all-time low of 3.50 feet in July to a high of 4.00 feet in March and October.

The United States Army continued to pump water from a dug well at Kawela, 4 miles east of Kaunakakai.

Test boring Molokai T1 (*845, p. 62; 886, p. 87; 911, p. 144; 941, p. 177; 949, p. 248; *991, p. 195). Geological Survey, U. S. Dept. of Interior. 0.75 mile east of airport.

Water level, in feet, and chloride, in parts per million, 1944
(Measurements made by Solomon Hanakeawe, Hawaiian Homes Commission)

Date	Water level		Chloride	Date	Water level		Chloride
Jan. 15	6.27	391.17	640	July 15	6.19	391.25	635
Feb. 15	6.27	391.17	610	Aug. 15	6.52	390.92	601
Mar. 15	6.32	391.12	620	Sept. 15	6.19	391.25	599
Apr. 15	6.27	391.17	596	Oct. 15	6.27	391.17	599
May 15	6.27	391.17	592	Nov. 15	6.27	391.17	611
June 15	6.27	391.17	610	Dec. 15	6.11	391.33	600

Water levels, in feet, in observation wells in Molokai, 1944

(Measurements made by Herbert Wilson)

Connant well (*845, p. 63; 886, p. 87; 911, p. 144; 941, p. 177; 949, p. 248; *991, p. 195). Half a mile inland from Kaunakakai.

Date	Water level		Date	Water level		Date	Water level	
	A	B		A	B		A	B
Jan. 15	0.83	27.17	May 15	0.92	27.08	Sept. 15	0.75	27.25
Feb. 15	.92	27.08	June 15	.75	27.25	Oct. 15	.92	27.08
Mar. 15	.92	27.08	July 15	.83	27.17	Nov. 15	.92	27.08
Apr. 15	1.00	27.00	Aug. 15	.83	27.17	Dec. 15	.83	27.17

Kamalo well (*845, p. 63; 886, p. 87; 941, p. 177; 949, p. 248; *991, p. 195). Half a mile northeast of Kamalo wharf.

Date	Water level		Date	Water level		Date	Water level	
	A	B		A	B		A	B
Jan. 15	1.92	38.08	May 15	1.83	38.17	Sept. 15	1.83	38.17
Feb. 15	1.83	38.17	June 15	1.92	38.08	Oct. 15	2.00	38.00
Mar. 15	1.75	38.25	July 15	1.83	38.17	Nov. 15	1.83	38.17
Apr. 15	1.83	38.17	Aug. 15	1.75	38.25	Dec. 15	1.83	38.17

Ualapue well (*845, p. 63; 886, p. 87; 941, p. 177; 949, p. 248; *991, p. 195). 2.75 miles east of Kamalo well.

Jan. 15	3.58	39.42	May 15	3.82	39.08	Sept. 15	3.75	39.25
Feb. 15	3.58	39.42	June 15	3.75	39.25	Oct. 15	4.00	39.00
Mar. 15	4.00	39.00	July 15	3.50	39.50	Nov. 15	3.92	39.08
Apr. 15	3.92	39.08	Aug. 15	3.58	39.42	Dec. 15	3.83	39.17

ISLAND OF LANAI

The water level in Maunalei shaft 1 varied from a low of 2.40 feet in June to a high of 2.73 feet in January. The average rainfall on Lanai was 28.59 inches, 16.91 inches lower than in 1943 and 6.21 inches below normal.

Maunalei shaft 1 (*817, p. 41; 840, p. 65; 845, p. 63; 886, p. 87, 911, p. 144; 941, p. 178; 949, p. 249; *991, p. 195). 4 miles north-northeast of Lanai City.

Water level, in feet, 1943
(Records furnished by Hawaiian Pineapple Co.)

Date	Water level		Date	Water level		Date	Water level	
	A	B		A	B		A	B
Jan. 1	2.73	291.27	May 1	2.69	291.31	Sept. 1	2.52	291.48
Feb. 1	2.57	291.43	June 1	2.40	291.60	Oct. 1	2.61	291.39
Mar. 1	2.68	291.31	July 1	2.45	291.55	Nov. 1	2.55	291.45
Apr. 1	2.69	291.31	Aug. 1	2.59	291.41	Dec. 1	2.48	291.52

ISLAND OF HAWAII

The water level in the Olaa shaft showed wide variation throughout the year, ranging from a high of 12.82 feet on February 4 to a low of 16.62 feet on December 29. In the Ookala shaft (formerly called the Kaiwiki shaft) the water level from January through August was generally lower than in previous years, although no complete record has been kept since 1941. Chloride determinations from January to August ranged from 10 to 21 parts per million.

Excavation of the well at Paauiilo by the Hamakua Mill Co. has been completed but pumping equipment has not yet been installed. Chloride content of the water was 26 parts per million in March, and in September the water level was 2.94 feet above sea level.

Two wells were drilled by the United States Navy at the Hilo Naval Air Station with a well rig owned by the Hawaiian Division of Hydrography, but they have not been put in use. The test well in Kona, drilled by the Geological Survey, was completed but is not in use. On August 22 the chloride content of the water was 520 parts per million.

On June 8, rainfall at Puuwaawaa broke a 39-year record for that district when 5.12 inches fell in a 24-hour period.

The Kohala Ditch Co. has driven a tunnel 1,200 feet into the dike complex of Kohala Mountain which is yielding about 5 million gallons of water a day. Tunneling is still in progress.

Olaa shaft (*817, p. 42; 840, p. 66; 845, p. 64; 886, p. 88; 911, p. 145; 941, p. 178; 949, p. 249; *991, p. 196).

Water level, in feet, 1944
(Records furnished by George Duncan, Olaa Sugar Co., Ltd.)

Date	Water level		Date	Water level		Date	Water level	
	A	B		A	B		A	B
Jan. 7	13.12	206.88	May 12	13.31	206.69	Sept. 8	14.39	205.61
14	13.17	206.83	19	13.46	206.54	15	14.20	205.80
21	13.16	206.84	26	13.61	206.39	22	14.12	205.88
28	12.98	207.02	June 2	13.77	206.23	29	14.07	205.93
Feb. 4	12.82	207.18	9	14.00	206.00	6	14.00	206.00
11	12.90	207.10	16	14.02	205.98	13	13.89	206.11
18	13.02	206.98	23	14.10	205.90	20	13.80	206.20
25	12.98	207.02	30	13.95	206.05	27	13.67	206.33
Mar. 3	15.20	204.90	July 7	14.10	205.90	Nov. 3	13.95	206.05
10	14.40	205.60	14	14.07	205.93	10	13.97	206.03
17	14.00	206.00	21	14.08	205.92	17	14.10	205.90
24	13.82	206.18	28	14.33	205.67	24	14.57	205.43
31	13.60	206.40	Aug. 4	14.50	205.50	Dec. 1	14.95	205.05
Apr. 7	13.32	206.68	11	14.50	205.50	8	15.07	204.93
14	13.22	206.78	18	14.46	205.54	15	15.10	204.90
21	13.33	206.67	25	14.45	205.55	22	15.27	204.73
28	13.22	206.78	Sept. 1	14.45	205.55	29	16.62	203.38
May 5	13.23	206.77						

Ookala shaft (formerly known as the Kaiwika shaft) (*840, p. 66; 845, p. 64; 886, p. 88; 911, p. 145; 941, p. 178; 949, p. 250; *991, p. 196).

Water level, in feet, and chloride, in parts per million, 1944
(Records furnished by David E. Larsen, manager, Kaiwika Sugar Co. Unless otherwise indicated, measurements were made while one pump was operating.)

Date	Water level		Chloride	Date	Water level		Chloride
	A	B			A	B	
Jan. 24	a 5.25	a 294.75	16	Apr. 10	5.00	295.00	16
31	a 5.33	a 296.67	10	17	5.00	295.00	16
Feb. 3	a 5.08	a 294.92	10	25	4.96	295.04	10
16	5.08	294.92	10	May 2	4.79	295.21	10
23	a 5.25	a 294.75	16	9	4.58	295.42	16
28	5.33	294.67	10	16	4.62	295.38	16
Mar. 9	a 5.25	a 294.75	10	23	4.58	295.42	16
14	a 5.08	a 294.92	16	30	4.62	295.38	16
20	5.17	294.83	16	June 5	4.58	295.42	16
29	5.00	295.00	21	13	4.83	295.17	10
Apr. 4	5.00	295.00	10	19	4.87	295.13	15

a Two pumps operating.

Ookala shaft--Continued.

Water level, in feet, and chloride, in parts per million, 1944.
(Records furnished by David E. Larsen, manager. Kaiwiki Sugar Co. Unless otherwise indicated, measurements were made while one pump was operating.)

Date	Water level		Chloride	Date	Water level		Chloride
	A	B			A	B	
June 29	4.79	295.21	16	Aug. 2	4.75	295.25	10
July 5	4.83	295.17	10	9	4.62	295.38	10
10	a 4.54	a 295.46	10	16	4.75	295.25	18
19	a 4.62	a 295.38	16	23	4.67	295.33	16
25	4.92	295.08	10	30	a 4.62	a 295.38	16

a Two pumps operating.

ISLAND OF KAUAI

Wells in Kauai showed only slight variation in artesian head in 1944 from the preceding year, except for well 8. The highest artesian head for well 8 was only 0.04 foot higher than the lowest for 1943 and throughout the year the head varied from 9.45 to 12.06 feet. The chloride content of well 8 was higher than in 1943. The chloride content of well 35 ranged from 243 to 537 parts per million, the highest yet recorded for this well.

The depth and diameter of well 7, published on page 68 of Water-Supply Paper 840, is that reported by the driller. An inspection on October 21, 1925, showed this well to be 12 inches in diameter and 192 feet deep after cleaning. Discharge before and after cleaning was 185,000 gallons per day with a chloride content of 187 parts per million. Static head was 2.95 feet above the top of the casing. On March 17, 1926, the well was leaking.

The depth of well 8, published on page 68 of Water-Supply Paper 840, is that reported by the driller. On October 21, 1925, after cleaning out most of the debris, the depth was 211 feet. Discharge after cleaning was 443,000 gallons per day with a chloride content of 187 parts per million. Static head was 2.95 feet above the top of the casing.

Artesian head, in feet, and chloride, in parts per million, in typical artesian wells on Kauai, 1944

Well 2F (*840, p. 67; 845, p. 65; 886, p. 89; 911, p. 146; 941, p. 178; 949, p. 250; *991, p. 197). Records furnished by East Kauai Water Co. In Kealia.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 19	10.03	+1.98	45	July 19	9.86	+1.81	42
Feb. 22	9.94	+1.89	44	Aug. 24	9.88	+1.83	44
Mar. 18	10.11	+2.06	44	Sept. 23	10.15	+2.10	42
Apr. 20	9.75	+1.70	41	Oct. 24	10.07	+2.02	41
May 19	10.06	+2.01	42	Nov. 21	9.80	+1.75	44
June 20	9.72	+1.67	42	Dec. 30	9.76	+1.71	48

Well 7 (*840, p. 68; 845, p. 65; 886, p. 89; 911, p. 146; 941, p. 179; 949, p. 250; *991, p. 197). Wailua. (Records from Jan. 15-Aug. 15 furnished by Lihue Plantation Co. Samples thereafter titrated in the laboratory of the Geological Survey in Honolulu.)

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 15	145	July 15	.....	.....	140
Feb. 17	139	Aug. 15	.....	.....	139
Mar. 18	135	Sept. 4	.....	.....	139
Apr. 15	137	Oct.	.....	.....	...
May 16	134	Nov. 2	.....	.....	140
June 15	138	Dec. 29	.....	.....	154

Well 8 (*840, p. 68; 845, p. 65; 886, p. 89; 911, p. 146; 941, p. 179; 949, p. 250; *991, p. 197). In Wailua. Records furnished by Lihue Plantation Co.

Jan. 15	12.06	+0.11	112	July 15	.....	....	130
Feb. 17	11.83	.12	113	21	10.35	1.60	...
Mar. 18	11.70	.25	108	Aug. 15	.....	....	132
Apr. 15	10.75	1.19	102	Sept. 4	9.78	2.17	134
May 16	10.49	1.46	105	Nov. 2	9.45	2.50	142
June 15	10.35	1.60	127	Dec. 29	9.77	2.18	141

Well 14N (*840, p. 68; 886, p. 89; 911, p. 146; 941, p. 179; 949, p. 250; *991, p. 197). In Koloa. Records furnished by the Koloa Sugar Co.

Jan. 29	30.94	55.08	..	July 27	30.85	55.17	42
Feb. 28	30.94	55.08	..	Aug. 30	a 15.85	a 70.17	42
Mar. 30	31.92	55.00	..	Sept. 30	a 13.77	a 72.25	42
Apr. 29	30.52	55.50	41	Oct. 28	a 13.52	a 72.50	42
May 29	a 15.10	a 70.92	39	Nov. 28	a 10.02	a 76.00	43
June 26	a 12.77	a 73.25	42	Dec. 29	29.77	56.25	42

a Pumps operating.

Artesian head, in feet, and chloride, in parts per million,
in the Kekaha Sugar Co.'s wells on Kauai, 1944
(Records furnished by the Kekaha Sugar Co.)

Well 35 (*840, p. 68; 845, p. 65; 886, p. 89; 911, p. 146; 941, p. 179; 949, p. 251; *991, p. 198). Near Kekaha.

Jan. 16	9.29	+1.47	243	July 15	8.50	+0.68	255
Feb. 15	8.46	+.64	364	Aug. 15	8.13	+.31	279
Mar. 15	9.52	+1.70	303	Sept. 15	8.57	+.75	437
Apr. 17	7.63	.19	334	Oct. 16	8.89	+1.07	537
May 16	9.32	+1.50	303	Nov. 15	8.50	+.68	510
June 15	9.25	+1.43	267	Dec. 15	8.49	+.67	461

Well 37 (*840, p. 68; 845, p. 65; 886, p. 89; 911, p. 146; 941, p. 179; 949, p. 251; *991, p. 198). 4 miles northwest of Kekaha.

Jan. 16	10.04	+0.06	109	July 15	9.56	0.42	176
Feb. 15	10.10	+.12	109	Aug. 15	9.46	.52	109
Mar. 15	10.65	+.67	103	Sept. 15	9.27	.71	194
Apr. 17	10.18	+.20	97	Oct. 16	9.37	.61	182
May 16	9.60	.38	121	Nov. 15	9.26	.72	182
June 15	9.56	.42	170	Dec. 15	9.09	.89	170

Well 56 (*840, p. 68; 848, p. 65; 886, p. 89; 911, p. 146; 941, p. 180; 949, p. 251; *991, p. 198). 7.5 miles northwest of Kekaha.

Date	Head		Chloride	Date	Head		Chloride
	A	B			A	B	
Jan. 16	9.24	2.68	243	July 15	9.25	2.67	249
Feb. 15	9.22	2.70	243	Aug. 15	9.15	2.77	237
Mar. 15	9.69	2.23	249	Sept. 15	9.17	2.75	255
Apr. 17	9.37	2.55	243	Oct. 16	9.12	2.80	255
May 16	9.12	2.80	237	Nov. 15	9.19	2.73	279
June 15	9.19	2.73	249	Dec. 15	9.17	2.75	255

PUMPAGE

The following table gives the draft from all large ground-water pumping plants in the Territory of Hawaii. The wells represented include irrigation, domestic, and industrial wells. The draft from all other drilled wells entering the main basalt aquifer of Oahu is not included. The numbers in parentheses in the records for Oahu and Maui are those used by the Federal Geological Survey.

The total draft during 1944 was 226 billion gallons. This was 24 billion gallons more than in 1943, about 3.4 billion gallons of which was pumpage from Oahu not previously included in the report. Most of the increase was in the pumpage from Oahu. Severe drought and increased use and development of ground-water supplies for military installations accounts for this rise. Maui was the only island which showed a slight decrease in draft for the year.

The Honolulu Suburban Water System received 152 million gallons of spring and tunnel water by gravity supply from the Waianae Plantation power house in Waianae Valley in exchange for water used by that plantation from the city and county shaft at Lualualei (shaft 2). The following gravity supplies were also used by the Suburban Water System: Haiku tunnel, Kailua, 1,352 million gallons; Luluku tunnels and springs, Kailua, 313 million gallons; Waimanalo city and county tunnels, 97 million gallons.

The United States Navy used an estimated 237.25 million gallons of water from Lualualei tunnel, on Oahu, in addition to that listed. At Kahului, Maui, 347.72 million gallons of ditch water was purchased from the Hawaiian Commercial & Sugar Co. This water was purified by the Navy and some of it sold back to the plantation for domestic use. The balance was used at the Naval Air Station at Kahului.

Ground-water draft, in millions of gallons, from wells in
the Territory of Hawaii, 1944
(Data furnished by owners)

Island of Hawaii		Island of Maui	
Kaiwiki Sugar Co.	a 75	Maui Agricultural Co.--Continued	
Kohala Sugar Co.		Pump 7 (28)	3,291
Hoea Pump	113	Maliko (32)	1,360
Kohala Pump	1,446	(pumps 10 & 11)	
Waikane Pump	55	Pump 12 (31)	1,076
	1,614	Mill (29)	
Olaa Sugar Co.	212	(pumps 8 & 13)	4,290
Total	1,901		16,389
Island of Kauai ^{b/}		Maui Pineapple Co.	
County of Kauai		Kahului Cannery (13)	a 100
Waimea water works	165		
Hanapepe water works	98	Pioneer Mill Co.	
	263	Pump A (9) Lahaina	2,070
Kekaha Sugar Co.		Pump B (8) Lahaina	1,638
Well 9	555	Pump C (7) Mill c	2,341
Wells K-1 to K-5	764	Pump D (3)	
Wells M-1 to M-12	1,990	Kaanapali	d 1,474
Kekaha Pump	726	Pump E (9) Lahaina (e)	
Mana Pump	90	Pump F (2)	
Waiawa Pump	462	Honokowai	1,204
	4,587	Pump G (4)	
Koloa Sugar Co.		Hahakea	328
(3 pumps)	260	Pump H (3)	
Lihue Plantation Co.		Kaanapali	1,631
Shaft	500	Pump L (6)	
Kealia wells	a 200	Wahikuli	408
Hanamaulu shaft	a 6	Pump M (5) Kahoma	2,506
	726	Pump N (10)	
Total	5,836	Olowalu	663
		Pump O (11) Olawalu	97
		Pump P (12)	
		Ukumehame	279
			14,639
		U. S. Navy	
		Puunene air base	
		(shaft 33)	a 475
		Total	63,606
		Island of Molokai	
		U. S. Army	
		Kamakana well	a 8
		Other wells	a 1
		Total	a 9
		Island of Oahu	
		Ewa Plantation Co.	
		Pump 1 (268)	1,139
		Pump 2 (257)	1,125
		Pump 3 (264)	3,274
		Pump 4 (264)	3,142
		Pump 5 (259)	f 2,428
		Pump 6 (259)	g 2,600
		Pump 7 (263)	h 2,003
		Pump 8 (270)	i 589
		Pump 9A (273)	617
		Pump 9B (273)	0
		Pump 9C (273)	962

See footnotes at end of table.

Ground-water draft, in millions of gallons, from wells in
the Territory of Hawaii, 1943--Continued

Island of Oahu--Continued		Island of Oahu--Continued	
Ewa Plantation Co.--Continued		Kahuku Plantation Co.	
Pump 9E (273)	474	Pump 1 (353)	859
Pump 10 (276)	2,808	Pump 2 (341)	2,697
Pump 11 (276)	1,712	Pump 3 (362)	2,090
Pump 12 (276)	1,402	Pump 5 (352)	1,884
Pump 13 (276)	38	Pump 6 (362-1)	414
Pump 15 (shaft 3)	3,608	Pump 7 (363)	195
Pump 16 ↓		Pump 8 (357)	315
(shaft 3)	4,510	Pump 12 (361)	101
Pump 20		Pump 14 (338)	a 369
(dug well 20)	600	Pump 15 (348)	152
Pump 21		Pump 17 (362)	150
(dug well 21)	379	Pump 20 (377)	913
Pump 22		Pump 23 (387)	161
(dug well 22)	360	• Pump 25 (373)	107
Pump 23		Pump 26 (392)	199
(dug well 23)	2,740	Pump 27 (396)	258
Pump 24		Mill pump (355)	a 845 11,709
(dug well 24)	681		
Pump 25 (254)	471 37,662		
Hawaiian Electric Co.		Oahu Sugar Co.	
Wells & tunnel		Pump 1 (247)	2,699
(199-1 and		Pump 2 (249)	2,605
shaft 8)	3,350	Pump 3 (249)	1,671
Kaluaoou Spring	2,804 6,663	Pump 4 (248)	1,344
Honolulu Board of Water Supply		Pump 4B (tunnel)	t 432
Kalihi Station		Pumps 5 & 5B (274)	2,518
(shaft 6)	3,158	Pump 6 (239)	2,596
Waialae Station		Pump 6B (239)	1,317
(shaft 7)	180	Pump 7 (246)	3,204
Halawa Station k/		Pumps 8 & 8A	
(shaft 12)	m 1,227	(Waikale	
Kaimuki Station (7)	2,892	Spring)	1,775
Beretania Station		Pump 9 (Waiawa	
(88)	3,843	Spring)	589 20,750
Kalihi Station			
(128)	2,239 13,539		
Honolulu Plantation Co.		Private wells in	
Pump 1 (185)	m 1,606	Honolulu	u 5,173
Pump 2 (196)	1,521		
Pump 3 (186)	3,097	U. S. Army	
Pump 4 (197)	2,876	Schofield (shaft	
Pump 5 (189)	o 2,252	4)	2,376
Pump 6 (Kalaauo		Kahuku air base	
Spring)	504	(339)	a 186 2,562
Pump 16 (199-1)	p 3,562 15,418		
Honolulu Suburban Water System q/		U. S. Navy	
Pearl City		Aiea (shaft 5)	3,199
(shaft 9) r/	213	Red Hill	
Waipahu (21) r/	165	(shaft 11)	6,384
Nanakuli		Barbers Point	
(dug well 16) r/	38	(shaft 14)	669
Lualualei		Aiea wells (187)	1,629
(shaft 2) r/	76	Wahiawa Radio	
Waialua (well 33) r/	156	Station (330-2)	a 15
Hauula (394) r/	22	Moanalua	
Kaaawa (shaft 10) r/	89 759	(well 156) v/	68
		Pearl City well r/	3
		Ewa Junction r/	a 7 11,974
		Wahiawa Water Co.,	
		Ltd. r/	
		Deep Well (330-3)	42

See footnotes at end of table.

Ground-water draft, in millions of gallons, from wells in
the Territory of Hawaii, 1944--Continued
(Data furnished by owners)

Island of Oahu--Continued			Island of Oahu--Continued		
Waialeale Training School			Waianae Co.--Continued.		
Sunset Beach			Makaha		
(337-1 & 2)	9		(dug well 1B)	61	
School Pump			Makaha		
(337-1 & 2)	<u>29</u>	38	(dug well 2)	65	
Waialua Agricultural Co.			Lehano		
Pump 1 (321)	1,336		(dug well 3)	76	
Pump 2 (322)	4,579		Kuailua		
Pump 3 (331)	4,061		(dug well 4)	26	
Pump 4 (334)	1,953		Paheehoe		
Pump 5 (285)	1,429		(dug well 5)	41	
Pump 6 (298, 299,			Keekee		
& 301)	336		(dug well 6)	31	
Pump 7 (324)	1,345		Fahoa		
Pump 8 (329)	344		(dug well 7)	60	
Pump 9 (327)	111		Kahoolanaki		
Pump 10 (323)	2,361		(dug well 10)	61	
Pump 11 (296)	81		Kamailie (277)	869	
Pump 12 (332)	103		Shaft 17 (shaft 1)	191	
Pump 13 (328)	89		Makaha wells		
Pump 15 (317)	79		(277-9)	<u>a 73</u>	1,690
Pump 16 (316)	115		Waimano Home		
Mill (319)	<u>2,137</u>	20,459	(196-1) r/		wa 19
Waianae Co.			Total		x 148,457
Puko (dug well 1)	136		Grand total		220,008

a Estimated.

b Draft by McBryde Sugar Co. not included. Three pumps of this company in Hanalei Valley and one pump at Lawai Valley pump both ground and surface water, but it is not possible to separate the ground-water draft from the surface-water draft.

c 1,229 million gallons was wasted.

d 304 million gallons was wasted after being used for cooling.

e Abandoned in 1943.

f 99 million gallons was sold to the United States Navy.

g 267 million gallons was sold to the United States Navy.

h 11 million gallons was sold to the United States Navy.

i 231 million gallons was sold to the United States Navy.

j Published as dug well 16 in previous reports.

k Put into operation Aug. 22, 1944.

m 588 million gallons was wasted during construction.

n 1,151 million gallons was sold to the United States Navy.

o 3 million gallons was supplied to the Honolulu Suburban Water

System.

p Includes an inseparable amount from Kaluaopu Spring, obtained from the Hawaiian Electric Co.

q Formerly Honolulu Rural Water Works.

r Not included in previous pumpage data.

s This shaft was pumped by the Waianae Co. for irrigating sugarcane under an agreement whereby the Honolulu Suburban Water System receives water from the mountain tunnels in exchange.

t Water pumped from a horizontal tunnel which went dry during the year.

u Includes pumpage from wells belonging to military establishments in Honolulu, except for well 156 (Moanalua) which is now listed under United States Navy.

v Formerly included with pumpage from private wells in Honolulu.

w 180,000 gallons was sold to the United States Army.

x Pump 15, Honolulu Plantation Co., not included in Oahu total because it boosts water already listed under Hawaiian Electric Co. well.

NEW MEXICO

INTRODUCTION

By C. V. Theis and C. R. Murray

PROGRAM OF WORK

Investigation of the ground-water resources of New Mexico was continued in 1944 in cooperation with the State engineer. Studies of ground water in New Mexico have been confined largely to areas where it is used for irrigation and have been in progress in certain areas for many years. Measurement of water levels or artesian head in observation wells constitutes an important part of the program. Such wells are measured in January or February when recovery from the previous pumping season has taken place and comparison with water levels in former years can best be made. Measurements are also made in selected groups of observation wells at approximately 2-month intervals in order to note seasonal changes in water levels caused by precipitation or changes in pumping schedules. In all, 2,215 measurements were made during the year in wells exclusive of those equipped with water-stage recorders for which daily records are presented.

FLUCTUATIONS IN WATER LEVEL

Water levels rose during the first few months of 1944 in most areas in New Mexico, but began falling in the ground-water-irrigated areas in April with the beginning of the irrigation season. The declines continued until September, when generally heavy precipitation decreased irrigation requirements and water levels and artesian head began a rise. The rise continued through the remainder of the year. The period of recovery was longer than normal and in small areas over-all yearly rises occurred, but, in general, water levels failed to reach the stages at which they had started the year. The net effect of the heavy fall precipitation on water levels and artesian head was to cause a slackening in the rate of decline which has been occurring for the past few years.

WELL-NUMBERING SYSTEM

The system of numbering wells in New Mexico, used in all counties except Hidalgo and Sierra, is based on the common subdivisions in sectionized land, and, by means of it, the well number, in addition to designating the well, locates its position to the nearest 10-acre tract in the land net. The number is divided into four segments by periods. The first segment denotes the township north or south of the New Mexico base line; the second denotes the range east or west of the New Mexico principal meridian; and the third denotes the section. In an area such as Roosevelt County, where wells are situated both north and south of the base line, an N is added to the first segment of the well number if the township is north of the base line, but no letter is added if the township is south of the base line. In areas in which no confusion can arise, the direction north or south of the base line or east or west of the meridian is not given.

The fourth segment of the number, which consists of three digits, denotes the particular 10-acre tract in which the well is situated. For this purpose, the section is divided into four quarters, numbered 1, 2, 3, and 4, in the normal reading order, for the northwest, northeast, southwest, and southeast quarters, respectively. The first digit of the fourth segment gives the quarter section, which is a tract of 160 acres. Similarly, the quarter section is divided into four 40-acre tracts numbered in the same manner, and the second digit denotes the 40-acre tract. Finally the 40-acre tract is divided into four 10-acre tracts, and the third digit denotes the 10-acre tract. Thus, well 12.36.24.123 in Lea County is located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 24, T. 12 S., R. 36 E. If a well cannot be located accurately to a 10-acre tract, a zero is used as the third digit, and if it cannot be located accurately within a 40-acre tract, zeros are used for both the second and third digits. If the well cannot be located more closely than the section, the fourth segment of the well number is omitted. When it becomes possible to more accurately locate a well in whose number zeros have been used, the proper digit or digits are substituted for the zeros. In Water-Supply Paper 911 and earlier reports the digits corresponding to unknown 10-acre and 40-acre tracts were simply omitted, but this practice caused some confusion in cataloging the wells.

In Water-Supply Paper 941 and subsequent reports, wells the last segment of whose numbers ends in one or two zeros correspond to wells whose numbers in earlier reports are the same except for the omission of the last one or two zeros. Letters, a, b, c,..... are added to the last segment to designate the second, third, fourth, and succeeding wells in the same 10-acre tract.

The following diagram shows the method of numbering the tracts within a section:

111	112	121	122	211	212	221	222
-- (1) --	-- (2) --	-- (1) --	-- (2) --	-- (1) --	-- (2) --	-- (1) --	-- (2) --
113	114	123	124	213	214	223	224
[1]		[2]		[3]		[4]	
131	132	141	142	231	232	241	242
-- (3) --	-- (4) --	-- (3) --	-- (4) --	-- (3) --	-- (4) --	-- (3) --	-- (4) --
133	134	143	144	233	234	243	244
311	312	321	322	411	412	421	422
-- (1) --	-- (2) --	-- (1) --	-- (2) --	-- (1) --	-- (2) --	-- (1) --	-- (2) --
313	314	323	324	413	414	423	424
[3]		[4]		[5]		[6]	
331	332	341	342	431	432	441	442
-- (3) --	-- (4) --	-- (3) --	-- (4) --	-- (3) --	-- (4) --	-- (3) --	-- (4) --
333	334	343	344	433	434	443	444

WELL DESCRIPTIONS, RECORDS OF ARTESIAN HEAD, AND WATER-LEVEL MEASUREMENTS

Measurements for most of the observation wells in New Mexico are listed alphabetically by counties and numerically within each county. Two groups of measurements--those of artesian head in the Roswell artesian basin and those of water level in the artesian-intake area of that basin--are listed under the common heading "Chaves and Eddy Counties," and in these groups the wells are indicated by name only. The listing of water-level measurements in the shallow-water wells of the Roswell artesian basin, however, follows the general plan, each well appearing under the county in which it is situated.

Records of mean monthly and mean annual artesian head in the Roswell basin are expressed as water level in feet above sea level.

All other measurements are given in feet below a precisely established land-surface datum which approximates the land surface at the well. Where measurements are made from a measuring point from which the tape cannot hang vertically, such as the mouth of a discharge pipe, the correction to apply to the tape reading to reduce it to the land-surface datum is stated in the description of the measuring point, whereas if the tape hangs vertically throughout its whole length, the distance of the measuring point above the land-surface datum is stated in its description.

CHAVES AND EDDY COUNTIES (ROSWELL ARTESIAN BASIN)

By C. V. Theis

An intensive investigation by the Geological Survey of the artesian-water resources of the Roswell artesian basin was begun by A. G. Fiedler and S. S. Nye in 1925, and an intensive investigation of the shallow-water resources was begun by A. M. Morgan in 1937. The findings of these investigations have been published in Geological Survey Water-Supply Paper 639 and in the 7th to 13th biennial reports of the State engineer of New Mexico. Data on artesian head have been published in Water-Supply Papers 777, 817, 840, 845, 886, 911, 941, 949, and 991. Data on shallow-water levels have been published in Water-Supply Papers 845, 886, 911, 941, 949, and 991. A comprehensive report of the hydrology and agricultural development of the Pecos Valley has been published by the National Resources Planning Board as part 10 of the Regional Planning series, "The Pecos River Joint Investigation in the Pecos River Basin in New Mexico and Texas," 1942.

The precipitation at Roswell in 1944 was 11.75 inches, which is about 75 percent of the average, but considerably greater than that during 1943.

The following table gives the precipitation by months at Roswell, Hagerman, Artesia, and Carlsbad. The precipitation during the growing season, from April through September, was 8.40 inches, or about 85 percent of normal for that period. This precipitation occurred largely in the latter part of the growing season with the result that pumping was heavy during the first part of the season but relatively light during the latter part.

Precipitation, in inches, at stations in Roswell Basin and vicinity, 1944				
Month	Roswell	Hagerman	Artesia	Carlsbad
Jan.	0.90	0.64	0.65	0.90
Feb.	.58	.38	.35	.98
Mar.	.11	.00	.00	.00
Apr.	.07	.05	.05	.00
May	.14	.09	.00	.36
June	1.98	1.94	1.80	3.08
July	1.52	1.15	3.30	1.09
Aug.	3.83	2.17	2.90	2.18
Sept.	.86	3.62	3.95	4.16
Oct.	.89	.43	.25	.20
Nov.	.26	.30	.35	1.55
Dec.	.21	.20	.15	.36
Total	11.35	10.97	13.75	14.86

A preliminary study of the records of power and fuel used to operate 79 pumps in the valley indicates that the average use of power was about 88 percent of that used in 1943. There was no notable change in the area of irrigated land. It is probable, therefore, that about 168,000 acre-feet of artesian water and about 96,000 acre-feet of shallow water was used for irrigation. Judging from comparable power records the use of water during the first half of 1944 was slightly more than in the same period in 1943 and nearly 20 percent less in the second half of 1944 than in the second half of 1943.

ARTESIAN WELLS

Six continuous water-stage recorders were operated in 1944 on artesian observation wells. The records obtained from these wells were used to compute the mean monthly and mean annual artesian heads. The mean monthly head was computed by averaging the daily maximum and daily minimum heads throughout the month, values for missing days, if any, being interpolated. The mean annual head is the average of the mean monthly heads. In the following records the mean monthly and annual water levels are given in feet above sea level in conformity to previously published records but the daily maximum water levels are given in feet below land-surface datum.

Records of artesian head

Berrendo well (*777, p. 112; 817, p. 196; 840, p. 254; 845, p. 281; 886, p. 377; 911, p. 153; 941, p. 187; 949, p. 260; 991, p. 207). SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 9, T. 10 S., R. 24 E. Measuring point, top of floor of recorder shelter, 0.66 foot above land-surface datum and 3,586.82 feet above mean sea level. Beginning of record: June 1926. Extremes: Highest mean annual water level, 3,571.8 feet (1942). Lowest mean annual water level 3,563.0 (1940). Highest mean monthly water level, 3,574.8 (December 1926). Lowest mean monthly water level, 3,560.0 feet (August 1940).

Berrendo well--Continued.

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,572.82	May	31	3,568.52	Sept.	30	3,568.98
Feb.	29	3,573.16	June	30	3,567.74	Oct.	31	3,569.68
Mar.	31	3,572.39	July	31	3,567.60	Nov.	30	3,571.42
Apr.	30	3,569.81	Aug.	31	3,566.15	Dec.	31	3,572.28
						Annual	366	3,570.05

Highest daily water level, in feet below land-surface datum, 1944

(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.49	13.08	12.96	14.37	17.27	16.52	17.28	19.19	16.81	17.22	14.96	14.04
2	13.49	13.01	12.90	14.51	17.09	16.47	17.07	19.90	16.77	17.29	14.94	13.99
3	13.45	13.05	12.88	14.44	17.11	16.71	17.02	20.07	16.74	17.35	14.93	13.92
4	13.45	12.90	12.97	14.59	17.18	16.80	16.94	20.36	16.69	16.60	14.89	13.91
5	13.45	12.99	12.90	15.76	17.22	17.41	16.85	19.83	16.69	16.70	14.76	13.94
6	13.37	12.98	12.98	14.77	17.28	17.26	16.86	19.54	16.67	16.68	14.69	13.88
7	13.37	12.93	13.02	14.96	17.19	17.00	16.91	19.46	16.68	17.33	14.66	13.87
8	13.43	12.91	13.05	15.19	17.12	16.99	17.00	19.66	16.68	17.30	14.64	13.82
9	13.37	12.87	13.02	15.17	17.51	17.13	17.16	19.65	16.69	17.27	14.57	13.81
10	13.34	12.93	13.04	15.06	17.58	17.14	16.99	19.68	16.69	17.28	14.56	13.84
11	13.35	12.96	13.04	15.94	18.08	16.99	17.26	19.08	16.67	17.04	14.57	13.82
12	13.39	12.89	13.12	15.43	17.79	17.36	17.44	18.82	16.71	17.14	14.61	13.81
13	13.36	12.85	13.09	15.46	17.79	17.72	17.49	20.19	16.69	16.20	14.59	13.79
14	13.30	12.85	13.11	15.54	17.72	18.14	17.39	19.97	16.77	16.09	14.58	13.74
15	13.28	12.86	13.25	15.63	17.62	18.19	17.76	20.39	16.82	16.00	14.54	13.72
16	13.29	12.85	13.36	15.69	17.51	17.49	17.87	20.17	16.81	15.94	14.47	13.70
17	13.28	12.89	13.44	15.72	17.52	17.32	17.82	19.82	16.71	15.85	14.41	13.66
18	13.27	12.91	13.58	15.88	16.70	17.33	17.82	19.46	16.67	15.73	14.34	13.72
19	13.26	12.90	13.47	15.74	16.54	18.21	19.09	20.64	16.71	15.64	14.32	13.70
20	13.21	12.84	13.64	15.86	16.51	18.67	18.51	20.52	16.84	15.57	14.33	13.67
21	13.19	12.82	13.63	15.85	16.41	18.69	18.92	20.60	17.07	15.49	14.29	13.67
22	13.19	12.88	13.88	15.89	16.29	18.09	18.89	20.43	17.02	15.40	14.22	13.63
23	13.11	12.87	13.74	15.79	16.43	18.53	17.82	19.92	17.02	15.30	14.14	13.62
24	13.07	12.89	13.69	15.72	16.40	18.48	17.63	18.56	16.98	15.24	14.06	13.57
25	13.08	12.88	13.80	15.76	16.46	18.96	17.66	.....	16.85	15.21	14.07	13.57
26	13.07	12.92	13.80	15.89	16.49	18.25	18.74	17.54	16.76	15.19	14.10	13.57
27	13.14	12.94	13.84	16.14	16.52	18.05	18.87	17.27	16.47	15.18	14.04	13.56
28	13.09	12.96	13.98	15.98	16.44	18.78	18.87	17.11	16.44	15.18	14.04	13.53
29	13.08	13.00	13.88	16.96	16.40	17.77	18.85	16.97	16.42	15.10	14.03	13.51
30	13.08	.....	14.12	16.79	16.40	17.47	18.95	16.94	17.38	15.04	14.02	13.50
31	13.08	.....	14.25	.....	16.49	.....	18.91	16.91	.....	15.02	.....	13.53

Berrendo-Smith well (*911, p. 153; 941, p. 187; 949, p. 260; 991, p. 207). NE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 21, T. 10 S., R. 24 E. Measuring point, top of casing, 1.75 feet above land-surface datum and 3,582.40 feet above mean sea level. Beginning of record: June 1940. Extremes: Highest mean annual water level, 3,571.0 feet (1942). Lowest mean annual water level, 3,566.2 feet (1941). Highest mean monthly water level, 3,574.4 feet (January 1943). Lowest mean monthly water level, 3,557.9 feet (August 1940).

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,572.94	May	31	3,567.12	Sept.	30	3,567.50
Feb.	29	3,573.21	June	30	3,565.96	Oct.	31	3,570.12
Mar.	31	3,571.58	July	31	3,566.08	Nov.	30	3,571.78
Apr.	30	3,567.77	Aug.	31	3,564.32	Dec.	31	3,572.44
						Annual	366	3,569.24

Berrendo-Smith well--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.90	7.36	7.69	10.30	11.94	12.84	13.01	14.29	12.85	11.29	9.18	8.46
2	7.88	7.35	7.62	10.31	11.89	12.49	12.77	14.65	12.85	11.46	9.21	8.40
3	7.88	7.40	7.59	10.12	12.06	12.98	12.63	14.97	12.85	11.43	9.20	8.32
4	7.89	7.37	7.70	10.61	12.14	12.96	12.50	15.69	12.75	11.40	9.16	8.29
5	7.88	7.34	7.61	11.32	12.68	12.87	12.43	15.53	12.81	11.39	9.06	8.35
6	7.77	7.33	7.71	10.95	12.70	13.63	12.76	15.48	12.65	11.35	8.99	8.28
7	7.75	7.26	7.79	11.18	12.52	13.29	13.09	15.20	12.74	11.09	9.00	8.27
8	7.86	7.20	7.83	12.00	12.08	13.34	13.45	16.10	12.83	10.93	9.00	8.21
9	7.78	7.19	7.81	11.54	12.27	13.76	13.39	16.09	13.08	10.86	8.99	8.19
10	7.71	7.23	7.87	11.27	12.49	13.39	13.14	16.13	13.08	10.85	8.93	8.21
11	7.73	7.29	7.90	12.10	12.57	12.89	13.41	15.46	12.95	10.84	8.88	8.18
12	7.80	7.23	7.97	12.08	13.06	12.74	13.49	15.10	13.13	10.75	8.87	8.18
13	7.78	7.19	7.89	12.12	13.12	13.26	13.70	15.51	12.96	10.67	8.82	8.15
14	7.71	7.24	8.00	12.23	12.90	13.39	13.44	15.25	13.32	10.59	8.84	8.13
15	7.67	7.26	8.30	12.35	12.76	13.40	14.37	15.76	13.39	10.52	8.83	8.10
16	7.67	7.30	8.43	12.29	12.73	13.73	14.40	15.80	13.20	10.43	8.79	8.16
17	7.65	7.32	8.74	12.22	12.56	13.77	14.11	15.81	12.95	10.28	8.75	8.05
18	7.63	7.33	8.71	12.58	12.60	13.35	13.99	15.98	12.79	10.09	8.72	8.10
19	7.65	7.29	8.69	12.20	12.53	13.59	14.68	16.40	12.89	10.05	8.67	8.14
20	7.61	7.22	8.47	12.38	12.49	14.31	14.22	15.75	13.09	9.97	8.69	8.10
21	7.58	7.15	8.76	12.20	12.41	14.66	13.81	15.51	13.38	9.92	8.70	8.14
22	7.55	7.28	9.50	12.09	12.20	14.40	13.79	16.38	13.00	9.84	8.63	8.08
23	7.46	7.43	9.35	11.77	12.31	14.14	13.43	16.29	12.70	9.78	8.52	8.05
24	7.36	7.53	9.19	11.60	12.47	15.01	13.26	14.66	12.22	9.72	8.40	7.95
25	7.40	7.55	9.29	11.77	12.64	14.31	13.14	13.82	12.15	9.69	8.43	7.96
26	7.41	7.61	9.27	12.00	12.47	14.07	13.65	13.49	11.88	9.63	8.49	7.97
27	7.51	7.66	9.31	12.57	12.60	14.12	13.95	13.09	11.62	9.57	8.40	7.95
28	7.46	7.63	9.70	12.17	12.58	14.13	14.07	13.02	11.54	9.45	8.41	7.95
29	7.44	7.70	9.36	12.32	12.43	13.39	13.87	13.00	11.40	9.35	8.45	7.89
30	7.44	....	9.87	12.10	12.53	13.23	14.10	12.97	11.61	9.30	8.40	7.92
31	7.42	....	10.18	....	12.87	....	13.86	12.94	....	9.28	....	7.98

Mountain View well (#911, p. 153; 941, p. 187; 949, p. 260; 991, p. 207). NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 11 S., R. 24 E. Measuring point, top of casing, 3.94 feet above land-surface datum and 3,631.12 feet above mean sea level. Beginning of record: July 1940. Extremes: Highest mean annual water level, 3,569.6 feet (1942). Lowest mean annual water level, 3,564.2 feet (1941). Highest mean monthly water level, 3,573.6 feet (January 1942). Lowest mean monthly water level, 3,553.4 feet (August 1940).

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,571.44	May	31	3,563.92	Sept.	30	3,563.32
Feb.	29	3,571.90	June	30	3,562.85	Oct.	31	3,567.28
Mar.	31	3,569.50	July	31	3,563.72	Nov.	27	3,569.74
Apr.	30	3,565.24	Aug.	31	3,561.16	Dec.	31	3,570.82
						Annual	363	3,566.74

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	55.94	55.23	55.71	59.82	62.13	63.13	63.75	63.67	64.66	61.21	58.00	56.84
2	55.94	55.20	55.65	59.90	62.54	63.08	63.39	64.22	64.50	61.09	58.01	56.70
3	56.00	55.29	55.60	59.73	62.75	63.00	63.31	64.65	64.40	61.15	58.06	56.48
4	56.02	55.12	55.72	60.20	62.81	62.89	63.20	65.06	64.20	61.14	57.95	56.49
5	55.98	55.10	55.55	60.46	62.78	62.74	63.02	65.47	64.51	61.13	57.76	56.62
6	55.94	55.05	55.66	60.61	62.73	63.28	63.00	65.11	64.27	61.14	57.68	56.50
7	55.85	54.94	55.92	60.80	62.59	63.38	63.11	64.88	64.54	61.01	57.72	56.48
8	55.99	54.90	55.97	60.97	62.45	63.34	63.25	65.52	64.57	60.76	57.76	56.46
9	55.86	54.90	55.96	60.89	62.95	63.81	63.10	65.86	64.53	60.65	57.69	56.43
10	55.82	54.97	56.03	60.63	63.22	63.88	62.89	66.11	64.55	60.71	57.59	56.40
11	55.83	55.07	56.04	61.37	63.25	63.10	63.42	66.26	64.21	60.76	57.52	56.36
12	55.93	54.96	56.10	61.60	63.59	63.00	63.95	66.24	64.66	60.53	57.40	56.36

Mountain View well--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
13	55.84	54.86	56.00	61.81	63.63	63.54	64.26	66.17	64.80	60.43	57.34	56.35
14	55.71	55.07	56.30	62.28	63.07	63.82	63.98	65.94	64.74	60.32	57.40	56.27
15	55.70	55.06	56.60	62.55	62.93	64.07	64.15	66.45	64.71	60.18	57.37	56.19
16	55.72	55.18	56.85	62.01	63.20	64.24	63.86	66.82	64.35	59.80	57.36	56.24
17	55.69	55.18	56.99	61.89	63.36	64.57	63.62	67.13	63.71	59.51	.....	56.10
18	55.67	55.20	57.16	62.38	63.48	64.36	63.49	67.25	63.46	59.38	.....	56.23
19	55.68	55.20	56.81	62.23	63.51	64.31	63.50	67.16	63.53	59.24	.....	56.28
20	55.57	55.09	56.70	62.24	63.46	64.83	63.55	66.78	63.54	59.11	57.16	56.19
21	55.53	55.00	57.24	62.16	62.88	65.00	63.39	66.51	63.46	59.06	57.16	56.24
22	55.52	55.30	57.73	62.21	62.66	65.15	63.01	67.01	63.28	58.91	57.09	56.20
23	55.40	55.30	57.86	61.76	62.86	65.11	62.40	67.14	63.00	58.86	56.90	56.18
24	55.26	55.36	57.93	61.59	62.95	65.31	62.25	65.77	62.35	58.69	56.78	55.94
25	55.30	55.43	58.31	61.90	62.99	64.84	62.28	65.18	62.26	58.66	56.81	55.96
26	55.30	55.55	58.31	62.37	62.89	64.68	62.40	64.96	62.21	58.65	56.87	55.95
27	55.44	55.58	58.46	62.72	63.08	65.16	62.52	64.46	61.93	58.57	56.78	55.96
28	55.35	55.57	59.01	62.64	62.85	65.26	62.72	64.32	61.72	58.40	56.83	56.01
29	55.33	55.70	58.66	62.64	62.64	64.28	62.93	64.51	61.56	58.19	56.89	55.94
30	55.32	.....	59.16	62.85	62.90	63.97	62.94	64.61	61.44	58.12	56.82	55.92
31	55.31	.....	59.48	.....	63.00	.....	62.88	64.57	.....	58.10	.....	55.93

Orchard Park well (*777, p. 112; *817, p. 196; 840, p. 254; 845, p. 282; 886, p. 378; 911, p. 154; 941, p. 188; 949, p. 260; 991, p. 207). NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 12 S., R. 25 E. Measuring point, top of casing, 0.40 foot above land-surface datum and 3,546.59 feet above mean sea level. Beginning of record: August 1925. Extremes: Highest mean annual water level, 3,528.1 feet (1942). Lowest mean annual water level, 3,516.1 feet (1940). Highest mean monthly water level, 3,544.0 feet (January 1942). Lowest mean monthly water level, 3,501.2 feet (August 1943).

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,538.93	May	31	3,510.18	Sept.	30	3,516.05
Feb.	29	3,538.25	June	30	3,510.23	Oct.	31	3,531.77
Mar.	31	3,524.12	July	31	3,510.99	Nov.	12	3,538.37
Apr.	30	3,511.93	Aug.	31	3,503.50	Dec.	31	3,541.17
						Annual		3,522.96

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.43	5.33	14.77	30.22	35.30	28.41	33.69	40.76	36.38	19.16	8.17	6.22
2	7.45	5.34	15.32	28.85	35.72	28.13	30.34	43.12	36.08	18.78	8.19	5.62
3	7.26	5.33	15.60	28.30	36.40	28.31	29.33	42.67	34.30	19.10	8.90	5.03
4	7.30	5.05	15.74	30.02	36.97	28.44	29.23	42.57	33.45	18.44	.....	4.71
5	7.35	5.00	15.30	31.89	37.77	29.34	28.74	41.98	33.18	20.52	.....	4.47
6	7.21	5.03	14.55	32.77	37.94	31.23	29.77	40.36	31.80	20.72	.....	4.83
7	7.67	4.88	15.11	34.69	35.06	31.52	31.23	39.16	31.81	19.93	.....	4.95
8	7.68	4.92	16.03	35.81	34.49	30.70	31.47	40.82	33.03	19.07	.....	4.81
9	7.44	5.16	17.55	33.81	37.50	32.14	30.43	43.13	33.33	19.03	.....	5.05
10	7.83	5.39	18.17	32.27	38.49	31.56	30.08	42.81	33.12	19.46	.....	4.32
11	7.88	5.84	19.03	33.48	39.91	31.08	32.02	44.21	31.74	19.02	.....	3.97
12	7.38	5.75	19.90	33.43	39.88	30.74	34.23	45.54	30.82	17.03	.....	3.90
13	7.17	5.33	20.17	34.89	39.62	33.14	35.40	43.39	30.97	15.48	.....	3.85
14	7.24	5.26	20.87	34.97	38.97	36.51	35.24	42.47	31.22	14.62	.....	3.75
15	7.10	5.26	21.40	34.75	37.62	37.89	36.80	43.44	31.11	14.43	.....	4.05
16	6.96	5.30	22.13	32.15	39.00	39.48	33.86	46.08	31.20	13.52	.....	5.15
17	6.80	5.53	22.90	31.74	38.73	40.63	33.29	45.96	28.55	12.08	.....	4.27
18	6.76	6.93	23.42	32.84	38.27	39.10	35.77	46.14	28.27	11.26	.....	5.39
19	7.06	7.60	21.24	34.98	38.79	37.92	38.61	45.96	27.90	10.67	.....	5.97
20	6.46	7.84	19.77	34.17	36.54	39.75	40.29	46.79	28.22	10.24	.....	4.64
21	6.44	8.70	22.64	36.66	34.01	40.80	38.60	45.32	28.06	10.14	.....	5.98
22	6.76	9.25	23.84	35.50	32.85	40.84	36.78	45.46	28.11	9.68	6.59	6.44

Orchard Park well--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23	6.85	11.47	25.54	32.93	32.70	41.18	32.44	46.85	29.15	9.38	5.96	4.91
24	6.55	12.44	26.05	32.29	33.49	40.81	30.99	37.16	25.82	10.57	5.46	4.38
25	6.71	12.54	27.40	33.79	32.50	40.23	33.31	33.93	24.74	9.77	5.74	3.97
26	6.90	13.73	27.57	34.64	31.68	38.57	34.52	33.50	24.27	9.23	7.50	3.73
27	6.74	13.22	27.54	34.84	30.62	39.70	36.28	32.48	22.56	8.95	7.92	3.71
28	6.50	12.71	28.70	34.96	29.22	39.23	39.46	31.96	22.33	8.72	6.85	3.86
29	6.34	13.74	27.87	35.13	28.64	34.28	39.66	33.65	22.22	7.98	6.48	4.05
30	6.08	.....	28.94	35.98	29.18	33.59	38.78	35.50	21.78	7.79	7.39	3.88
31	5.60	.....	29.65	.....	28.61	.....	38.50	36.13	.....	8.10	....	3.80

Greenfield well (*911, p. 154; 941, p. 188; *949, p. 260; 991, p. 208). NW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 13 S., R. 25 E. Measuring point, top of casing, 13.92 feet above land-surface datum and 3,537.68 feet above mean sea level. Beginning of record: May 1940. Extremes: Highest mean annual water level, 3,517.5 feet (1941). Lowest mean annual water level, 3,506.9 feet. (1943). Highest mean monthly water level, 3,535.4 feet (Jan. 1942). Lowest mean monthly water level, 3,485.0 feet (August 1940).

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,529.08	May	23	3,493.57	Sept.	30	3,502.90
Feb.	29	3,529.12	June	30	3,493.64	Oct.	31	3,521.46
Mar.	31	3,508.43	July	31	3,495.54	Nov.	28	3,528.02
Apr.	30	3,494.42	Aug.	31	3,489.08	Dec.	31	3,533.48
						Annual	356	3,509.90

Highest daily water level, in feet above (+) or below (-)
land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	+4.81	+7.24	-1.00	-26.08	-24.01	-22.23
2	+5.32	+6.94	-1.13	-22.43	-30.02	-22.78
3	+5.42	+7.05	-2.93	-21.64	-30.44	-21.52
4	+5.35	+7.52	-3.17	-25.52	-32.02	-22.90
5	+4.69	+7.55	-2.12	-27.38	-32.65	-24.45
6	+4.42	+7.18	-1.08	-26.08	-31.24	-26.50
7	+3.85	+7.40	-2.56	-29.08	-29.25	-26.33
8	+5.12	+7.28	-4.80	-29.03	-28.73	-25.89
9	+5.64	+7.01	-8.72	-25.36	-33.34	-25.05
10	+5.97	+6.79	-10.49	-23.87	-33.44	-27.68
11	+4.87	+6.72	-11.83	-26.48	-32.28	-27.78
12	+5.52	+7.24	-9.18	-29.72	.....	-27.44
13	+5.83	+7.51	-10.77	-29.91	-29.43	-30.82
14	+5.92	+8.23	-13.28	-29.81	-27.94	-33.95
15	+5.62	+8.32	-13.80	-28.97	-27.33	-35.16
16	+5.77	+8.41	-15.93	-27.13	-32.70	-34.41
17	+5.74	+8.07	-16.74	-26.62	-32.92	-34.33
18	+6.02	+7.27	-15.78	-31.83	-32.51	-32.14
19	+6.12	+6.93	-12.95	-32.64	-33.28	-28.82
20	+6.30	+5.79	-12.35	-31.56	-28.23	-32.78
21	+5.74	+5.23	-19.68	-30.63	.....	-31.27
22	+5.47	+5.37	-21.44	-26.27	.....	-34.43
23	+5.90	+3.97	-22.54	-23.99	.....	-34.26
24	+6.02	+2.32	-23.28	-22.60	.....	-32.73
25	+6.24	+1.32	-23.18	-29.61	.....	-30.90
26	+5.53	+8.85	-21.27	-27.81	.....	-30.28
27	+5.82	+7.78	-22.28	-29.95	.....	-32.43
28	+6.10	+1.53	-25.66	-27.34	-21.95	-28.02
29	+6.31	-.92	-24.94	-28.21	-21.64	-23.96
30	+6.47	....	-26.63	-26.02	-25.08	-23.57
31	+6.90	....	-27.26	.....	-24.92	.....

Greenfield well--Continued.

Highest daily water level, in feet above (+) or below (-)
land-surface datum, 1944
(From recorder charts)

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-23.65	-32.85	-31.03	-6.18	+3.15	+7.01
2	-20.57	-33.25	-29.56	-6.75	+3.09	+8.09
3	-20.35	-32.09	-25.16	-5.93	+2.60	+8.75
4	-21.07	-33.21	-24.76	-5.18	+2.96	+9.23
5	-21.01	-32.08	-24.53	-7.21	+2.97	+9.44
6	-22.52	-30.65	-23.15	-6.90	+3.19	+9.74
7	-22.14	-31.36	-25.81	-6.70	+2.12	+9.83
8	-21.62	-33.88	-24.88	-5.80	+2.72	+9.19
9	-20.17	-34.95	-22.01	-5.98	+2.84	+9.55
10	-19.65	-36.37	-20.15	-6.50	+3.22	+10.08
11	-23.58	-36.83	-20.16	-5.82	+3.23	+10.29
12	-27.53	-38.16	-20.48	-4.96	+3.45	+10.43
13	-29.76	-33.08	-22.80	-4.41	+3.70	+10.60
14	-28.56	-34.03	-23.80	-3.05	+3.20	+10.67
15	-28.11	-36.32	-22.86	-1.91	+3.48	+10.84
16	-25.56	-37.73	-19.00	+3.39	+4.24	+10.49
17	-24.33	-38.18	-17.26	+1.06	....	+10.83
18	-29.29	-36.77	-18.52	+1.46	....	+10.37
19	-29.33	-37.17	-17.91	+1.76	....	+10.47
20	-31.72	-35.32	-19.26	+1.72	+5.29	+10.77
21	-31.85	-34.27	-19.97	+1.59	+5.13	+10.37
22	-31.33	-36.30	-19.51	+2.81	+5.42	+10.22
23	-26.08	-38.02	-16.78	+3.07	+6.64	+10.30
24	-25.03	-24.21	-12.26	+2.09	+7.23	+9.95
25	-28.58	-22.67	-11.55	+2.04	+6.27	+10.04
26	-28.62	-24.70	-10.48	+3.32	+6.23	+10.17
27	-30.92	-24.01	-8.38	+3.55	+5.77	+10.20
28	-31.36	-24.01	-8.77	+3.48	+6.02	+10.18
29	-32.20	-29.35	-9.30	+3.23	+6.07	+10.16
30	-30.48	-30.58	-8.20	+3.36	+6.48	+10.22
31	-29.81	-31.61	....	+2.65	....	+10.08

Artesia well (*777, p. 113; 817, p. 196; 840, p. 254; *845, p. 282; 886, p. 378; 911, p. 154; 941, p. 188; *949, p. 261; 991, p. 208).
SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 18 S., R. 26 E. Measuring point, top of casing, 8.52 feet above land-surface datum and 3,403.02 feet above mean sea level.
Beginning of record: April 1931. Extremes: Highest mean annual water level, 3,391.9 feet (1942). Lowest mean annual water level, 3,376.0 feet (1940). Highest mean monthly water level, 3,402.1 feet (January 1943). Lowest mean monthly water level, 3,365.0 feet (August 1940).

Mean monthly and mean annual water level, in feet above sea level, 1944

Month	Days of record	Water level	Month	Days of record	Water level	Month	Days of record	Water level
Jan.	31	3,400.33	May	31	3,377.61	Sept.	21	3,384.07
Feb.	27	3,398.14	June	30	3,375.66	Oct.	31	3,393.04
Mar.	23	3,386.87	July	31	3,378.43	Nov.	30	3,396.82
Apr.	28	3,379.03	Aug.	27	3,373.87	Dec.	31	3,398.40
						Annual	341	3,386.86

Highest daily water level, in feet above (+) or below (-)
land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	+5.64	+5.67	+0.19	-15.53	-13.43	-17.80
2	+5.77	+5.80	-.07	-13.78	-14.21	-17.83
3	+5.85	+5.67	-.47	-13.01	-14.71	-17.06
4	+5.88	+5.89	-.93	-14.10	-15.46	-16.68
5	+5.93	+5.88	-.29	-14.43	-15.87	-16.27
6	+6.33	+5.43	.00	-14.25	-15.98	-17.32
7	+6.39	+5.32	...	-14.70	-14.93	-16.83
8	+6.32	+5.47	...	.....	-14.68	-16.23
9	+6.49	+5.18	...	-14.63	-16.06	-16.40

Artesia well--Continued.

Highest daily water level, in feet above (+) or below (-)
land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June
10	+6.56	+4.85	....	-13.72	-16.41	-16.02
11	+6.53	+4.22	-3.48	-14.61	-16.26	-15.70
12	+6.29	+4.45	-3.80	-14.98	-16.54	-15.90
13	+6.08	+4.77	-3.78	-15.11	-16.48	-16.44
14	+6.01	+4.77	-5.03	-15.67	-14.88	-18.29
15	+6.06	+4.52	....	-16.23	-14.45	-18.94
16	+6.05	+4.19	....	-14.80	-16.58	-19.55
17	+6.14	+5.52	....	-14.35	-16.88	-19.02
18	+6.20	+5.02	-8.86	-14.48	-16.43	-19.13
19	+5.88	+2.85	-8.81	.....	-16.48	-19.08
20	+5.87	+3.23	-8.48	.....	-16.48	-19.59
21	+5.83	+3.67	-9.85	.....	-15.68	-20.76
22	+5.58	+3.11	-11.05	-14.58	-15.90	-21.03
23	+5.86	+2.37	-11.50	-13.47	-16.52	-20.23
24	+5.93	....	-12.48	-13.11	-16.82	-20.72
25	+5.69	....	-13.28	-14.16	-16.72	-19.60
26	+5.64	+1.72	-12.78	-14.53	-17.60	-19.20
27	+5.48	+1.54	-13.18	-15.32	-18.12	-19.40
28	+5.30	+1.70	-13.23	-15.67	-17.48	-19.48
29	+5.55	+1.50	-12.54	-15.63	-17.59	-16.75
30	+5.50	...	-14.36	-13.98	-18.23	-16.13
31	+5.52	...	-14.92	.....	-17.78	.....

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-15.18	-12.82	-16.81	-3.75	+1.45	+3.21
2	-14.79	-14.01	-17.27	-3.46	+1.61	+3.33
3	-14.97	-15.23	-17.50	-3.22	+1.43	+3.54
4	-15.27	-16.51	-17.16	-3.00	+1.31	+3.52
5	-16.17	-17.26	-14.60	-2.94	+1.70	+3.52
6	-17.07	-16.78	-12.98	-2.93	+1.88	+3.52
7	-17.50	-18.16	-12.19	-2.94	+1.93	+3.36
8	-18.71	-19.62	-11.35	-2.44	+1.89	+3.20
9	-17.69	-21.30	-10.48	-2.36	+1.94	+3.17
10	-17.18	-22.43	-9.65	-2.10	+2.07	+3.40
11	-18.43	-22.91	-9.35	-1.97	+2.16	+3.07
12	-18.77	-23.60	-9.24	-1.73	+2.24	+2.94
13	-18.75	-23.58	-9.19	-1.60	+2.39	+3.03
14	-18.06	-23.66	-9.12	-1.35	+2.28	+3.24
15	-18.78	-24.33	-9.27	-1.13	+2.37	+3.72
16	-18.02	-24.73	-9.36	-.94	+2.54	+4.17
17	-17.48	.....	-9.45	-.69	+2.70	+4.40
18	-18.15	.....	-9.22	-.66	+2.83	+4.27
19	-18.25	.....	-9.30	-.69	+2.81	+4.29
20	-18.38	-23.93	-9.36	-.60	+2.75	+4.47
21	-15.26	-24.00	....	-.73	+2.69	+4.47
22	-13.92	-24.26	....	-1.04	+2.81	+4.63
23	-10.81	-24.83	....	-.89	+3.13	+4.76
24	-10.42	-19.96	....	-.36	+3.37	+4.89
25	-10.13	-17.40	....	-.18	+3.35	+4.96
26	-11.06	-16.18	....	+.04	+3.16	+5.02
27	-11.68	-15.04	....	+.24	+3.40	+5.06
28	-11.48	-14.89	....	+.44	+3.44	+4.95
29	-11.68	-15.52	....	+.82	+3.29	+5.14
30	-11.11	-16.04	-4.08	+1.06	+3.32	+5.10
31	-11.28	-16.15	....	+1.17	.....	+4.96

Fluctuations in artesian head

The water levels in the artesian wells fluctuated in response to the varying demand for irrigation water throughout the growing season. Water levels were low at the beginning of the year relative to their positions at the beginning of the preceding year. Because of the dryness of the early part of the 1944 season they remained on the whole relatively low through July. However, because of the later summer rains, and the consequently reduced irrigation demand, they rose to relatively high stages in August and remained high for the rest of the year.

The following table shows the change in the mean monthly water levels in relation to the corresponding months in 1943:

Mean monthly rise (+) or decline (-) of water level, in feet,
relative to stage in corresponding month of 1943

Month	Berrendo	Berrendo-Smith	Mountain View	Orchard Park	Greenfield	Artesia
Jan.	-1.2	-1.5	-2.3	-1.8	-1.8	-1.8
Feb.	-.5	-.5	-1.1	+.5	+2.7	+1.5
Mar.	-.4	+.1	-1.0	-2.5	-2.8	-1.6
Apr.	+.2	+.2	-.5	+1.4	+2.5	+.4
May	-1.5	-2.1	-1.6	-1.0	-1.4	-3.2
June	-1.1	-1.0	-1.8	-1.5	+2.3	-3.2
July	-.9	-.9	-1.3	-9.0	-9.9	-8.6
Aug.	.0	+.5	+.5	+2.3	+2.9	+.6
Sept.	+1.2	+1.9	+2.0	+11.1	+13.7	+8.6
Oct.	-.5	+.6	+1.1	+7.5	+12.1	+3.4
Nov.	+1.3	+1.1	+1.1	+7.5	+8.2	+2.7
Dec.	+.2	+.2	+.5	+4.6	+7.2	+.3

WELLS IN THE ARTESIAN INTAKE AREA

The aquifer in which the artesian water occurs in the Roswell Basin is quite rigid, as shown by relatively large fluctuations of water level produced in the wells by barometric pressure. As a consequence, little water can be taken from storage close to the wells. Most of the water discharged from the wells has been balanced by a reduction of flow of the springs in the Roswell Basin. If the water discharged by the wells is not entirely balanced by this means it will be balanced by a reduction of storage in the outcrop and intake area of the aquifer. To determine whether or not this occurs water levels are measured in several wells in the outcrop area several times a year.

The water levels in these wells respond to changes in the rate of recharge and also, with some lag, to the rate of draft on the aquifer by the artesian wells many miles away.

The water levels in wells in the intake area generally follow quite faithfully on a reduced scale the fluctuations of the water levels in the artesian wells in the Basin. In 1944, all except the McAuliffe well reached their minima at about the time the wells in the Basin reached theirs. In 1943, during which year there was a pronounced double minimum in the water levels in the artesian wells, the intake wells either showed a double minimum or a pronounced flattening of the rate of fall during the slackening in pumping during late summer. Owing to the late summer rains heavy pumping did not occur during the early fall of 1944 and as a result no double minimum occurred in water levels in either the artesian wells or the intake wells.

In all, 62 water-level measurements were made in wells in the artesian-intake area during the year.

Water-level measurements

R. H. Rosenberg well (*941, p. 189; 949, p. 262; 991, p. 210). NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 30, T. 10 S., R. 23 E. Well caved and measurements discontinued after Jan. 17, 1944. Water level, in feet below land-surface datum, 1944; Jan. 17, 239.93.

H. L. Wood well. NE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 11 S., R. 22 E. Drilled stock well, in San Andres limestone, equipped with windmill. Measuring point, top of windmill pipe clamps at Geological Survey washer on west side of pump column, 0.80 foot above land-surface datum. Reference point, top of concrete foundation for circular stock tank north of well, at chiseled cross in concrete at point nearest to well, 0.23 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 18	253.99	June 16	255.14	Aug. 22	256.49	Oct. 14	255.77
May 19	254.49	July 18	255.70	Sept. 14	256.22	Nov. 17	255.06

J. Herbst well (*941, p. 189; 949, p. 262; 991, p. 210). NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T. 12 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Jan. 17	232.77	Apr. 17	232.82	July 18	234.51	Oct. 14	234.82
Feb. 17	232.06	May 18	233.32	Aug. 22	235.44	Nov. 17	234.16
Mar. 18	231.95	June 16	234.16	Sept. 14	235.02		

Diamond A Cattle Co. well (*941, p. 189; 949, p. 262; 991, p. 210). SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 14 S., R. 23 E. Reference point, beginning Oct. 15, 1944, top of surface of 3- by 3-foot concrete block under southwest windmill post at a point 0.5 foot west and 0.25 foot south of northeast corner, 0.11 foot below land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 17	258.40	Apr. 17	258.01	July 18	259.03	Oct. 15	259.41
Feb. 17	257.98	May 18	258.44	Aug. 22	259.51	Nov. 18	258.85
Mar. 18	257.62	June 16	258.63	Sept. 14	259.52		

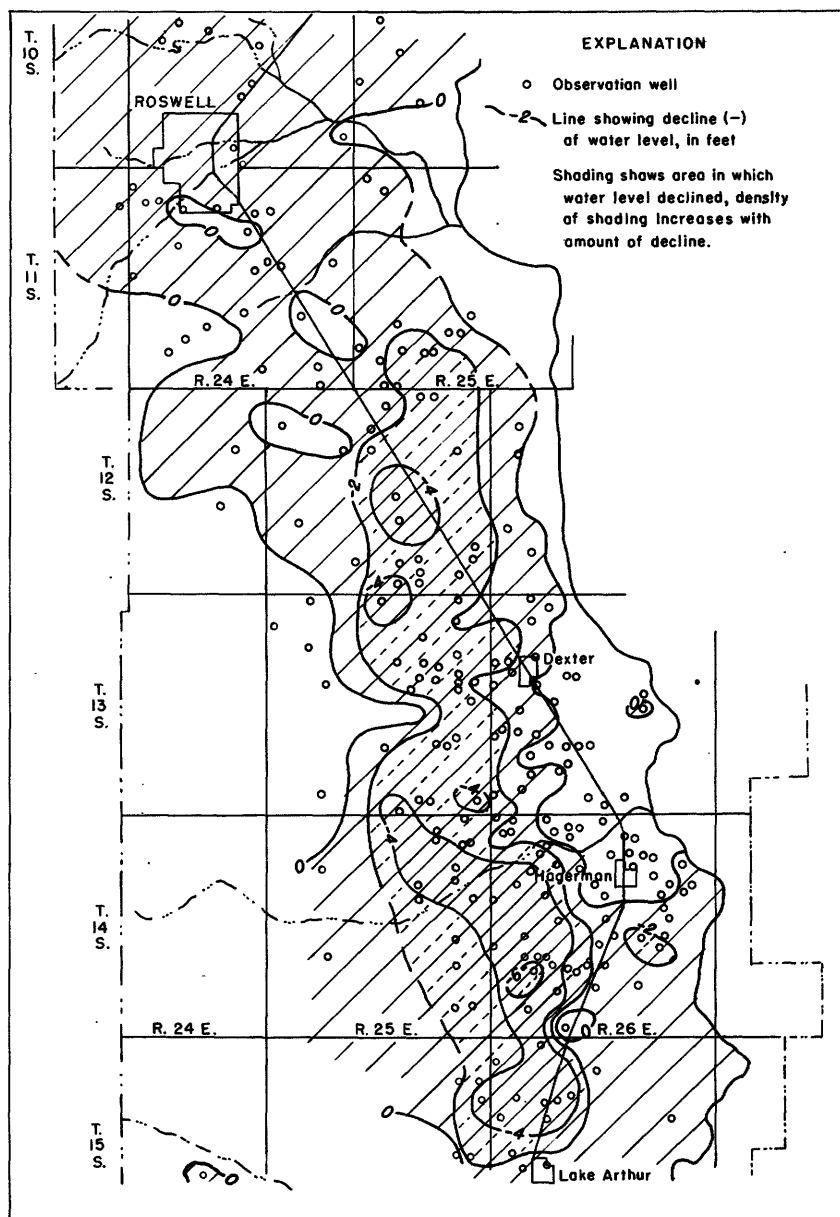


Figure 10.--Map of northern part of Roswell Basin, Chaves County, N. Mex., showing change in water level from January 1944 to January 1945.

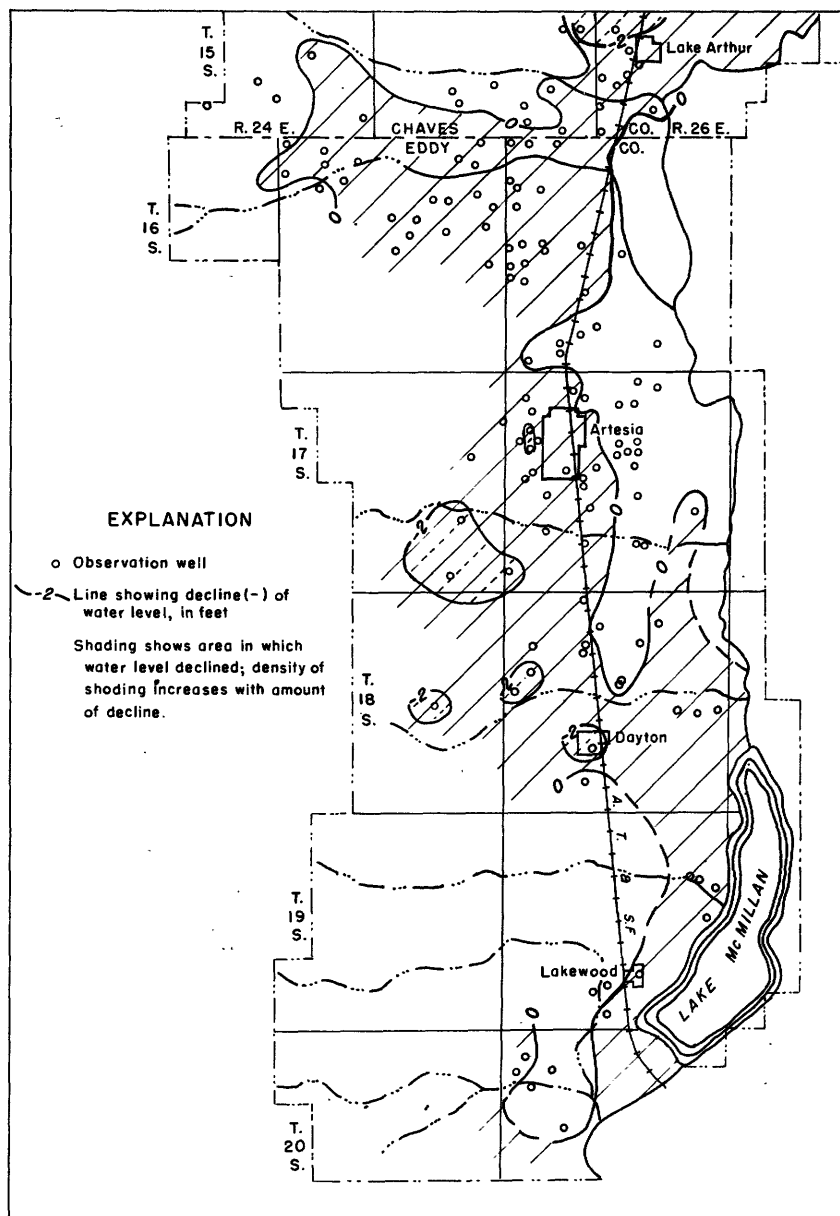


Figure 11.--Map of southern part of Roswell Basin, Chaves and Eddy Counties, N. Mex., showing change in water levels from January 1944 to January 1945.

D. W. Runyan well (*941, p. 189; 949, p. 262; 991, p. 210). SW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T. 16 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17	212.66	Apr. 17	212.71	July 17	213.12	Oct. 15	212.84
Feb. 17	212.29	May 18	212.91	Aug. 22	213.52	Nov. 18	212.45
Mar. 18	212.31	June 16	212.85	Sept. 14	213.00		

E. S. McAuliffe well (*949, p. 264; 991, p. 210). NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 18 S., R. 23 E. Well plugged; measurements discontinued after Oct. 15, 1944.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17	342.65	Apr. 17	341.28	July 17	339.69	Sept. 14	337.78
Feb. 17	341.99	May 18	341.18	Aug. 22	338.03	Oct. 15	337.66
Mar. 18	341.35	June 16	341.14				

G. R. Coffin well (*941, p. 190; 949, p. 262; 991, p. 210). NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 19 S., R. 23 E.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17	369.59	Apr. 17	369.23	July 17	369.78	Sept. 14	369.59
Feb. 17	369.35	May 18	369.26	Aug. 22	369.79	Oct. 15	369.07
Mar. 18	369.21	June 16	369.47				

SHALLOW WELLS

In order to observe the effects during the year of withdrawals for irrigation, on the one hand, and recharge, on the other, water levels were measured in 424 wells in January and February 1944, and again in the same wells in January 1945. In addition 6 wells were equipped with automatic water-stage recorders which, however, could not be continuously operated throughout the year, and about 47 of the observation wells were measured at bimonthly intervals throughout the year. In all, 629 water-level measurements were made during the year.

Fluctuations of water level

The water table lowered during 1944 throughout most of the irrigated area in the Roswell Basin. In Chaves County the decline was at a maximum along an axis lying from 3 to 5 miles west of the Pecos River. The greatest decline occurred southwest of Hagerman where the water level declined more than 4 feet under an area of about 22.5 square miles. In other areas totaling 5.5 square miles the decline also exceeded 4 feet. The water level declined more than 2 feet under an area of about 91 square miles in Chaves County. In an area along the river extending from Roswell to Hagerman the water level rose fractions of a foot.

In Eddy County, although the water level declined throughout the irrigated area, except near the river, the declines were small, exceeding 2 feet in only small areas totaling about 9.5 square miles. In a strip a few miles wide near the river, extending from the Chaves County line nearly to Dayton, water levels rose fractions of a foot.

The declines in 1944 were somewhat less than in 1943. This reduction in the rate of decline is probably due in part to the reduction in pumpage in 1944, and probably especially to the reduction in pumping rate in the latter part of the season of 1944, which gave an opportunity for water levels to recover somewhat more, before measurements were made, than in previous years.

Water-level measurements

Records of water levels in shallow wells in the Roswell artesian basin follow. For convenience, the wells are divided into two groups corresponding to the two counties in which they are situated.

Chaves County

10.24.8.111 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 214). O. S. Stockton. Water level, in feet below land-surface datum, 1944: Feb. 9, 57.00 (pumping).

10.24.15.342 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 214). L. C. Tow. Water level, in feet below land-surface datum, 1944: Feb. 9, 13.80 (pumping).

10.24.16.133 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 214). George D. Ferrine. Water level, in feet below land-surface datum, 1944: Feb. 9, 23.25.

10.24.17.122 (*886, p. 385; 911, p. 159; 941, p. 197; 949, p. 266; 991, p. 214). Mr. Howard.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 9	25.30	May 15	29.66	Sept. 16	(a)
Mar. 24	27.15	July 18	30.32	Nov. 19	26.83

a Dry at 28.20 feet.

10.24.18.424 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 214). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Feb. 9, 35.57.

10.24.20.344 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 214). Clide Blackwell. Water level, in feet below land-surface datum, 1944: Feb. 9, 37.69 (pumping).

10.24.22.322 (*886, p. 385; 911, p. 164; 941, p. 202; 949, p. 266; 991, p. 215). A. B. Carpenter. Water level, in feet below land-surface datum, 1944: Feb. 9, 12.16.

10.24.27.111 (*886, p. 386; 911, p. 164; 941, p. 202; 949, p. 266; *991, p. 215). Jack Taylor. Water level, in feet below land-surface datum, 1944: Feb. 9, 16.78.

10.24.29.333 (*886, p. 386; 911, p. 164; 941, p. 202; 949, p. 267; *991, p. 215). Isaac Durand. Water level, in feet below land-surface datum, 1944: Feb. 9, 34.35 (pumping).

10.24.31.333 (*886, p. 386; 911, p. 164; 941, p. 202; 949, p. 267; 991, p. 215). Mr. Williams. Measurements discontinued.

10.24.31.423 (*886, p. 386; 911, p. 164; 941, p. 202; *949, p. 267; 991, p. 215). Ernest Wilson. Measurements discontinued.

10.24.31.444 (*845, p. 285; 886, p. 386; 911, p. 159; 941, p. 197; 949, p. 267; 991, p. 215). J. F. Van Winkle, (Star Tourist Camp).

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 9	20.29	May 15	19.29	Sept. 16	17.38
Mar. 24	19.68	July 18	19.93	Nov. 19	15.20

10.24.33.244 (*949, p. 267; 991, p. 215). J. Westover. Water level, in feet below land-surface datum, 1944: Feb. 9, 5.54.

10.24.34.333 (*949, p. 267; 991, p. 215). Elmer Butler. Water level, in feet below land-surface datum, 1944: Feb. 9, 4.31.

10.24.36.222 (*949, p. 267; 991, p. 215). State of New Mexico. Water level, in feet below land-surface datum, 1944: Feb. 10, 2.76.

10.25.7.444 (*949, p. 267; 991, p. 215). John R. Fendergrass. A new fence has been put in north of well. Well is now about 50 feet south of fence line and road. Water level, in feet below land-surface datum, 1944: Feb. 10, 6.87.

10.25.17.344 (*949, p. 267; 991, p. 215). P. E. Cannon. Water level, in feet below land-surface datum, 1944: Feb. 10, 6.01.

10.25.19.331 (*949, p. 267; 991, p. 215). Fred C. Smith, Jr.

Water level, in feet below land-surface datum, 1944

Feb. 10	31.65	July 18	33.20	Nov. 19	32.37
May 15	32.63	Sept. 16	a 33.01		

a Pumping.

10.25.29.222 (*949, p. 267; 991, p. 215). U. S. Government. Water level, in feet below land-surface datum, 1944: Feb. 10, 1.05.

11.23.12.221 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 267; 991, p. 215). Mable Clifford. Water level, in feet below land-surface datum, 1944: Feb. 8, 52.86.

11.24.2.322 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 215). I. F. Cassell. Measurements discontinued.

11.24.3.312 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 215). Dee Bristow. Water level, in feet below land-surface datum, 1944: Feb. 9, 5.60.

11.24.3.333 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 215). Henry Hoheland. Measurements discontinued.

11.24.6.311 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). R. B. Wirtz. Water level, in feet below land-surface datum, 1944: Feb. 8, 41.64.

11.24.6.433 (*886, p. 387; 911, p. 164; 941, p. 202; *949, p. 268; 991, p. 216). Mr. Watkins. Water level, in feet below land-surface datum, 1944: Feb. 8, 32.09.

11.24.6.444 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). Morrie Huff. Water level, in feet below land-surface datum, 1944: Feb. 8, 32.45.

11.24.8.122 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; *991, p. 216). W. L. Nuly. Water level, in feet below land-surface datum, 1944: Feb. 8, 25.96.

11.24.9.211 (*886, p. 387; 911, p. 164; 941, p. 202; 949, p. 268; *991, p. 216). Raymond McCutchen. Water level, in feet below land-surface datum, 1944: Feb. 8, 31.03.

11.24.10.114 (*911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). Claude Hobbs. Water level, in feet below land-surface datum, 1944: Feb. 9, 18.77.

11.24.10.224 (*845, p. 286; 886, p. 388; 911, p. 159; 941, p. 197; 949, p. 268; *991, p. 216). C. E. Smith.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 9	12.01	May 15	22.48	Sept. 16	22.31
Mar. 24	18.64	July 18	22.82	Nov. 19	13.18

11.24.10.321 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). J. H. Rodgers. Water level, in feet below land-surface datum, 1944: Feb. 9, 24.48.

11.24.13.144 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). Frank Peters. Water level, in feet below land-surface datum, 1944: Feb. 8, 14.55.

11.24.14.313b (*845, p. 287; 886, p. 388; 911, p. 160; 941, p. 197; 949, p. 268; 991, p. 216). H. F. Fairbanks (Fairbanks Filling Station).

Water level, in feet below land-surface datum, 1944

Feb. 8	28.94	May 15	43.74	Sept. 16	43.28
Mar. 24	38.73	July 18	42.25	Nov. 19	30.89

11.24.15.421 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). M. L. Barnett. Measuring point beginning Feb. 8, 1944, lower edge of pump base, 0.33 foot above concrete well curb, 0.69 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 8, 31.55.

11.24.15.431 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 268; 991, p. 216). M. L. and S. Barnett. Water level, in feet below land-surface datum, 1944: Feb. 8, 32.36.

11.24.17.121a (*949, p. 269; 991, p. 216). D. H. Johnson. Water level, in feet below land-surface datum, 1944: Feb. 8, 50.45.

11.24.18.333 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 269; *991, p. 216). G. V. Coker. Water level, in feet below land-surface datum, 1944: Feb. 8, 80.96.

11.24.19.343 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 269; 991, p. 217). Walter C. Hendricks. Water level, in feet below land-surface datum, 1944: Feb. 8, 87.96.

11.24.22.333 (*886, p. 388; 911, p. 164; 941, p. 202; 949, p. 269; 991, p. 217). John Tweedy. Water level, in feet below land-surface datum, 1944: Feb. 8, 42.15 (pumping).

11.24.23.411a (*886, p. 389; 911, p. 164; 941, p. 202; 949, p. 269; 991, p. 217). Howard E. Babcock, Jr. Water level, in feet below land-surface datum, 1944: Feb. 8, 11.84.

11.24.23.433 (*886, p. 389; 911, p. 164; 941, p. 203; 949, p. 269; 991, p. 217). Tweedy Gin. Water level, in feet below land-surface datum, 1944: Feb. 8, 14.24.

11.24.28.113 (*886, p. 389; 911, p. 160; 941, p. 198; 949, p. 269; 991, p. 217). Rocky Arroyo School House, State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 8	59.88	May 15	65.51	Sept. 16	67.51
Mar. 24	59.10	July 18	65.94	Nov. 19	62.66

11.24.29.333 (*949, p. 269; 991, p. 217). F. W. Clow. Water level, in feet below land-surface datum, 1944: Feb. 8, 83.59.

11.24.29.411 (*886, p. 389; 911, p. 164; 941, p. 203; 949, p. 269; 991, p. 217). Belle Hurst. Water level, in feet below land-surface datum, 1944: Feb. 8, 76.88.

11.24.34.411b (*886, p. 389; 911, p. 164; 941, p. 203; 949, p. 269; 991, p. 217). Belle Hurst. Water level, in feet below land-surface datum, 1944: Feb. 8, 41.49.

11.24.36.133 (*886, p. 389; 911, p. 164; 941, p. 203; 949, p. 269; *991, p. 217). Wiley Grizzle. Water level, in feet below land-surface datum, 1944: Feb. 8, 26.48.

11.24.36.211 (*886, p. 389; 911, p. 164; 941, p. 203; 949, p. 269; 991, p. 217). Russell Smith. Water level, in feet below land-surface datum, 1944: Feb. 8, 18.48.

11.24.36.333 (*886, p. 389; 911, p. 165; *949, p. 269; 991, p. 217). Wiley Grizzle. Water level, in feet below land-surface datum, 1944: Feb. 8, 29.57.

11.25.6.123a (*991, p. 217). J. P. White Co. Water level, in feet below land-surface datum, 1944: Feb. 9, 25.80 (nearby well pumping).

11.25.6.421a (*941, pp. 203 and 207; 949, p. 269; 991, p. 217). J. P. White Co.

Water level, in feet below land-surface datum, 1944

Feb. 9	6.85	July 18	7.63	Nov. 19	5.29
May 15	8.64	Sept. 16	9.24		

11.25.22.333 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 269; 991, p. 217). Mrs. T. E. Whitney. Water level, in feet below land-surface datum, 1944: Feb. 8, 6.70.

11.25.28.234 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 269; 991, p. 217). E. Whitney. Water level, in feet below land-surface datum, 1944: Feb. 8, 6.13.

11.25.28.244 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 269; 991, p. 217). R. O. Whitney. Water level, in feet below land-surface datum, 1944: Feb. 8, 6.36.

11.25.28.333. Drilled irrigation well, equipped with turbine pump. Measuring point, lower edge of opening in north side of pump case, 0.69 foot above concrete pump foundation, 1.53 feet above land-surface datum. Water levels, in feet below land-surface datum: Feb. 3, 1938, 5.52; Feb. 8, 1944, 5.34.

11.25.29.111 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; 991, p. 218). Farmers Incorporated. Water level, in feet below land-surface datum, 1944: Feb. 8, 7.76.

11.25.29.343 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; 991, p. 218). Albert Hobson. Water level, in feet below land-surface datum, 1944: Feb. 8, 4.97.

11.25.29.444 (*845, p. 288; 886, p. 390; 911, p. 160; 941, p. 198; 949, p. 270; 991, p. 218). Glenn C. Wheeler. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Jan. 14-15, 5.18; July 22, 11.19.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	5.48	5.85	7.64	9.26	8.19	10.24	....	10.00	10.31	....	....
2	....	5.50	5.79	7.46	9.41	7.95	10.38	....	9.97	10.41	....	....
3	....	5.55	5.77	7.40	8.10	7.80	10.55	....	9.89	10.42	....	....
4	....	5.57	5.78	7.66	8.00	....	10.70	....	9.78	10.41	....	....
5	....	5.63	5.73	7.79	8.02	....	10.67	....	9.77	10.37	....	....
6	....	5.67	5.73	7.87	7.99	....	10.52	....	9.30	10.36	....	....
7	....	5.66	5.75	8.17	7.93	....	10.41	....	9.22	....	....	....
8	....	5.68	5.77	8.47	7.95	....	10.41	....	8.99	....	....	....
9	....	5.68	....	8.32	8.01	....	10.13	....	....	....	....	....
10	....	5.75	6.02	8.41	8.09	7.80	10.09	....	8.96	....	....	....
11	....	5.73	6.02	8.25	8.42	7.80	10.19	....	9.10	....	....	....
12	5.33	5.70	6.03	8.45	8.76	8.47	10.42	....	9.09	....	....	....
13	5.25	5.70	6.05	8.37	8.86	8.92	10.56	....	9.10	....	....	8.40
14	5.18	5.74	6.17	8.26	8.69	8.76	10.56	....	9.22	....	....	8.39
15	5.18	5.78	....	8.56	8.36	8.81	....	....	9.44	....	....	8.40
16	5.22	5.80	....	8.66	7.80	9.05	10.86	....	9.54	....	....	8.41
17	5.28	5.87	6.04	8.79	7.62	8.44	10.68	....	9.73	....	....	8.41
18	5.30	5.88	6.03	8.78	8.09	8.22	10.76	....	9.70	7.04	....	8.46
19	5.35	5.90	....	8.75	8.66	8.29	10.95	....	8.15	7.12	7.69	8.48
20	5.36	5.90	....	7.92	8.75	8.81	10.85	....	8.10	7.14	7.72	8.48
21	5.39	5.88	....	7.67	8.76	9.23	11.08	10.80	8.25	7.48	7.74	....
22	5.41	5.94	....	7.78	8.64	9.38	11.19	10.83	8.21	7.52	7.74	....
23	5.41	5.94	....	7.16	8.57	9.64	10.66	11.01	9.14	7.46	7.73	....
24	5.39	5.98	....	7.43	8.50	9.88	10.00	10.87	....	7.42	7.69	....
25	5.42	6.02	....	7.46	8.06	9.91	9.55	11.03	....	7.40	7.74	....
26	5.39	6.02	....	7.76	7.95	9.51	9.18	11.03	....	....	7.79	....
27	5.37	6.01	....	8.22	8.11	9.66	8.95	10.23	....	....	....	....
28	5.33	6.00	....	8.50	8.36	10.09	8.99	10.00	....	....	....	....
29	5.34	5.93	....	8.55	8.55	9.87	9.26	....	10.05	....	....	....
30	5.38	....	....	9.05	8.81	9.96	....	....	10.12	....	....	....
31	5.44	....	....	....	8.50	....	....	....	....	....	....	....

11.25.30.333 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; *991, p. 218). J. P. White Co. Measuring point beginning Feb. 8, 1944, outside edge of south $\frac{1}{2}$ -inch hole in west side of pump case, 0.05 foot above concrete pump foundation and land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 8, 13.35.

11.25.31.223 (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; 991, p. 218). Ruby Brown. Measuring point beginning Feb. 8, 1944, upper edge of pump base plate, level with land-surface datum. Let tape down through hole in northeast side of pump base. Water level, in feet below land-surface datum, 1944: Feb. 8, 10.83.

11.25.31.433a (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; 991, p. 218). Albert Watson. Water level, in feet below land-surface datum, 1944: Feb. 8, 25.19.

11.25.31.433b (*886, p. 390; 911, p. 165; 941, p. 203; 949, p. 270; *991, p. 218). Albert Watson. Water level, in feet below land-surface datum, 1944: Feb. 8, 25.32.

11.25.32.333 (*886, p. 391; 911, p. 165; 941, p. 203; *949, p. 270; 991, p. 218). George Bogart. Water level, in feet below land-surface datum, 1944: Feb. 8, 20.81.

12.24.13.111 (*949, p. 270; 991, p. 219). Leora Newman.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 5	63.89	May 15	a 69.62	Sept. 16	70.13
Mar. 24	65.05	July 18	68.88	Nov. 20	65.76

a Pumping.

12.24.23.441a (*886, p. 391; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). Monte Goodin. Water level, in feet below land-surface datum, 1944: Feb. 5, 78.69.

12.25.2.1ot 3 (*886, p. 391; 911, p. 165; 941, p. 203; *949, p. 271; 991, p. 219). B. F. Heine. Water level, in feet below land-surface datum, 1944: Feb. 5, 13.45.

12.25.2.1ot 4 (*886, p. 391; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). E. R. Duvall. Water level, in feet below land-surface datum, 1944: Feb. 5, 11.40.

12.25.3.334 (*886, p. 391; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). J. W. Young. Water level, in feet below land-surface datum, 1944: Feb. 5, 25.79.

12.25.7.144a (*886, p. 391; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). Olivia Etz. Water level, in feet below land-surface datum, 1944: Feb. 5, 38.32.

12.25.9.422 (*845, p. 288; 886, p. 391; 911, p. 160; 941, p. 198; 949, p. 271; 991, p. 219). Cumberland townsite (Welty).

Water level, in feet below land-surface datum, 1944

Feb. 5	43.79	May 15	44.52	Sept. 16	47.28
Mar. 24	43.23	July 19	46.02	Nov. 19	45.94

12.25.13.111 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). E. E. Colcazier. Water level, in feet below land-surface datum, 1944: Feb. 5, 13.80.

12.25.15.112 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). A. J. Merry Estate. Well now abandoned. No equipment. Well is about 225 feet west of highway fence line and about 200 feet south of east-west fence line. Water level, in feet below land-surface datum, 1944: Feb. 5, 45.50.

12.25.15.333 (*886, p. 392; 911, p. 165; 941, p. 203; *949, p. 271; 991, p. 219). G. M. Sterrett. Measurements discontinued.

12.25.16.111 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; *991, p. 219). Ernest Nelson. Water level, in feet below land-surface datum, 1944: Feb. 5, 31.22.

12.25.16.222 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 219). State of New Mexico. Water level, in feet below land-surface datum, 1944: Feb. 5, 48.87.

12.25.22.231 (*886, p. 392; 911, p. 160; 941, p. 203; 949, p. 271; 991, p. 219). W. T. Clardy. Water level, in feet below land-surface datum, 1944: Feb. 5, 66.55.

12.25.25.413 (*886, p. 392; 911, p. 165; *949, p. 271; 991, p. 220). Ann E. Freeman. Water level, in feet below land-surface datum, 1944: Feb. 5, 26.31.

12.25.26.311 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 220). J. K. Murphey. Water level, in feet below land-surface datum, 1944: Feb. 5, 54.05.

12.25.27.211 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 220). W. T. Clardy. Measuring point beginning Feb. 5, 1944, top of basal flange of pump head, 0.10 foot above top of casing and land-surface datum. Let tape down through hole in southwest side of pump base. Water level, in feet below land-surface datum, 1944: Feb. 5, 62.30.

12.25.30.222 (*886, p. 392; 911, p. 165; 941, p. 203; 949, p. 271; 991, p. 220). Ivy Woodman. Water level, in feet below land-surface datum, 1944: Feb. 5, 79.42.

12.25.33.112 (*886, p. 392; 911, p. 165; 941, p. 203; *949, p. 272; 991, p. 220). H. D. Wager. Measuring point beginning Feb. 5, 1944, top south edge of rectangular hole in west side of pump base inside of case, 0.55 foot above concrete pump foundation and land-surface datum. Remove inspection plate to get at measuring point. Water level, in feet below land-surface datum, 1944: Feb. 5, 76.22.

12.25.34.211 (*949, p. 272; 991, p. 220). Mack Sharp. Measuring point beginning Feb. 5, 1944, center of $\frac{3}{4}$ -inch tap hole in southeast side of pump head, 1.00 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 5, 54.76.

12.25.34.411 (*886, p. 393; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). Jack Mask. Water level, in feet below land-surface datum, 1944: Feb. 5, 50.23.

12.25.35.111 (*911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). C. E. Smith. Water level, in feet below land-surface datum, 1944: Feb. 5, 44.28.

12.25.35.131. C. E. Smith. Drilled irrigation well equipped with turbine pump. Measuring point, lower edge of opening in south side of pump case, 0.70 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 5, 47.14.

12.25.35.311a (*845, p. 290; 886, p. 393; 911, p. 160; 941, p. 198; 949, p. 272; *991, p. 220). H. G. Moberly. Pressure pump removed July 1944, no equipment.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 5	45.49	May 15	63.22	Sept. 16	a 68.34
Mar. 24	a 74.11	July 19	a 78.26	Nov. 20	52.73

a Nearby well pumping.

12.25.35.311b (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). H. G. Moberly. Measuring point beginning Feb. 5, 1944, top of pump base plate, 0.55 foot above top of casing and land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 5, 46.64.

12.25.35.411 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). A. C. Stone. Water level, in feet below land-surface datum, 1944: Feb. 5, 40.18.

12.25.36.133 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). H. Kuykendall. Water level, in feet below land-surface datum, 1944: Feb. 5, 31.58.

12.25.36.142 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). O. B. Berry. Measuring point beginning Feb. 5, 1944, top of casing, 0.20 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 5, 21.76.

12.25.36.211. Drilled irrigation well, equipped with turbine pump. Measuring point, lower edge of pump base plate, 2.07 feet above top of casing, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 5, 24.55.

12.25.36.313 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 220). M. L. Kuykendall. Water level, in feet below land-surface datum, 1944: Feb. 5, 27.53.

12.26.7.421 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; *991, p. 220). Cecil Johnson. Water level, in feet below land-surface datum, 1944: Feb. 5, 2.65.

12.26.18.221 (*949, p. 272; 991, p. 220). Cecil Johnson. Water levels, in feet below land-surface datum, 1944: Feb. 5, 14.15; May 16, 16.88; July 19, 41.37 (pumping); Nov. 19, 19.55.

12.26.18.221a. Cecil Johnson. Dug domestic irrigation well, used to water garden. Equipped with small vertical shaft centrifugal pump. Diameter 4 feet. Measuring point, top of cross brace just beneath belt pulley, 1.68 feet above land-surface datum. Well is about 70 feet north-northwest of windmill well 12.26.18.221. Water levels, in feet below land-surface datum, 1944: July 19, 14.66; Sept. 16, 14.95; Nov. 19, 14.86.

12.26.29.333 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 221). T. S. Lawing.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 5	16.20	July 19	15.34	Nov. 21	16.35
May 15	15.47	Sept. 16	16.47		

12.26.30.213 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 221). Lowman Wiley. Water level, in feet below land-surface datum, 1944: Feb. 5, 18.85.

13.25.1.111 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 221). M. L. Kuykendall. Water level, in feet below land-surface datum, 1944: Feb. 4, 19.29.

13.25.1.331 (*886, p. 394; 911, p. 165; 941, p. 203; 949, p. 272; 991, p. 221). Will Schaaphok. Measuring point beginning Feb. 4, 1944, lower edge of opening in north side of pump case, 0.70 foot above top of casing, 1.35 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 4, 14.74.

13.25.3.111 (*886, p. 395; 911, p. 165; 941, p. 203; 949, p. 273; 991, p. 221). Grace G. Stanley. Water level, in feet below land-surface datum, 1944: Feb. 3, 56.10.

13.25.5.111 (*886, p. 395; 911, p. 165; 941, p. 204; 949, p. 273; 991, p. 221). W. H. Belcher. Water level, in feet below land-surface datum, 1944: Feb. 3, 72.79 (pumping).

13.25.6.333 (*886, p. 395; 911, p. 165; 941, p. 204; 949, p. 273; 991, p. 221). R. L. Lowe. Water level, in feet below land-surface datum, 1944: Feb. 3, 82.16.

13.25.8.133 (*886, p. 395; 911, p. 165; 941, p. 204; 949, p. 273; 991, p. 221). W. H. Jeffries.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 3	63.27	July 19	72.36	Nov. 20	67.30
May 15	69.61	Sept. 16	73.85		

13.25.10.344 (*886, p. 395; 911, p. 165; 941, p. 204; 949, p. 273; 991, p. 221). H. W. Reinicke. Water level, in feet below land-surface datum, 1944: Feb. 3, 64.04.

13.25.11.111 (*886, p. 395; 911, p. 165; 941, p. 204; *949, p. 273; 991, p. 221). Kermit Southard. Water level, in feet below land-surface datum, 1944: Feb. 3, 41.89.

13.25.11.343 (*886, p. 395; 911, p. 165; 941, p. 204; *949, p. 273; 991, p. 221). J. E. Brockman. Water level, in feet below land-surface datum, 1944: Feb. 3, 50.35.

13.25.11.433 (*886, p. 395; 911, p. 161; 941, p. 198; 949, p. 273; 991, p. 221). J. E. Brockman.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 3	41.20	May 15	57.81	Sept. 16	(a)
Mar. 24	50.22	July 19	(a)	Nov. 20	53.14

a Well dry at 60.9 feet.

13.25.12.133 (*886, p. 395; 911, p. 165; 941, p. 204; *949, p. 273; 991, p. 221). M. E. Colclazier. Water level, in feet below land-surface datum, 1944: Feb. 4, 22.54.

13.25.12.311 (*886, p. 395; 911, p. 165; 941, p. 204; *949, p. 273; 991, p. 221). M. E. Colclazier. Water level, in feet below land-surface datum, 1944: Feb. 4, 22.62.

13.25.13.113 (*886, p. 395; 911, p. 166; 941, p. 204; *949, p. 273; 991, p. 221). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 38.31.

13.25.13.131 (*886, p. 395; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 221). Fletcher Bros. Water level, in feet below land-surface datum, 1944: Feb. 3, 37.27.

13.25.13.133 (*949, p. 273; 991, p. 221). Fletcher Bros. Water level, in feet below land-surface datum, 1944: Feb. 3, 41.34.

13.25.13.233a (*886, p. 395; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 29.46.

13.25.13.233b (*886, p. 395; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 30.35.

13.25.13.311 (*911, p. 166; 941, p. 204; *949, p. 273; 991, p. 222). Fletcher Bros. Water level, in feet below land-surface datum, 1944: Feb. 3, 40.99.

13.25.13.433 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 222). Mrs. J. W. Wier. Water level, in feet below land-surface datum, 1944: Feb. 3, 32.56.

13.25.14.131 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 58.42.

13.25.14.231 (*911, p. 166; 941, p. 204; *949, p. 273; 991, p. 222). William Zappe. Water level, in feet below land-surface datum, 1944: Feb. 3, 48.94.

13.25.15.311 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 273; 991, p. 222). Rex Richmond. Water level, in feet below land-surface datum, 1944: Feb. 3, 74.95.

13.25.15.422 (*886, p. 396; 911, p. 166; 941, p. 204; *949, p. 274; 991, p. 222). Rex Richmond. Measuring point beginning Feb. 3, 1944, top of casing, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 3, 57.65.

13.25.17.411 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). R. Thaman. Water level, in feet below land-surface datum, 1944: Feb. 3, 82.87 (pumping).

13.25.23.111 (*886, p. 396; 911, p. 166; 941, p. 204; *949, p. 274; 991, p. 222). I. F. Wortman. Water level, in feet below land-surface datum, 1944: Feb. 3, 59.23.

13.25.24.333 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). Hal Bogle. Water level, in feet below land-surface datum, 1944: Feb. 3, 48.88.

13.25.26.211 (*949, p. 274; 991, p. 222). Belle Hurst. New pump and electric motor installed. Measuring point beginning Feb. 3, 1944, outside edge of west $\frac{3}{4}$ -inch hole in south side of pump case, 0.10 foot above concrete pump foundation, 0.90 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 3, 55.97.

13.25.26.222 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). Belle Hurst. Water level, in feet below land-surface datum, 1944: Feb. 3, 49.36.

13.25.27.111 (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). Hal Bogle. Water level, in feet below land-surface datum, 1944: Feb. 3, 77.28.

13.25.27.211b (*886, p. 396; 911, p. 166; 941, p. 204; *949, p. 274; 991, p. 222). Hal Bogle. No measurements made in 1944.

13.25.32.411 (*886, p. 396; 911, p. 166; 941, p. 204; *949, p. 274; 991, p. 222). William Erashler.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 3	85.49	July 19	79.82	Nov. 20	78.55
May 15	81.93	Sept. 17	78.49		

13.25.34.433a (*886, p. 396; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 71.99.

13.25.35.311 (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 67.41.

13.25.35.322 (*991, p. 222). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 63.43.

13.25.36.421a (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). R. M. Ware. Measuring point beginning Feb. 3, 1944, top of wooden windmill pipe clamps, 0.35 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 3, 47.45.

13.25.36.421b (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). R. M. Ware. Water level, in feet below land-surface datum, 1944: Feb. 3, 48.93.

13.25.36.421c (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). R. M. Ware. Water level, in feet below land-surface datum, 1944: Feb. 3, 48.68.

13.26.5.111 (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). Robert H. Aston. Water level, in feet below land-surface datum, 1944: Jan. 31, 12.15.

13.26.5.231a (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). Chas. P. Sterrett. Water level, in feet below land-surface datum, 1944: Jan. 31, 16.33.

13.26.5.231b (*886, p. 397; 911, p. 166; 941, p. 204; 949, p. 274; 991, p. 223). Chas. P. Sterrett. Water level, in feet below land-surface datum, 1944: Jan. 31, 12.18.

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13.26.5.331 (*886, p. 397; 911, p. 166; 941, p. 204; *949, p. 274; 991, p. 223). W. W. Harris. Water level, in feet below land-surface datum, 1944: Jan. 31, 13.28.

13.26.7.333 (*886, p. 397; 911, p. 161; 941, p. 199; 949, p. 274; 991, p. 223). Howard Amason. Equipped with water-stage recorder. Water level recordings published for this well in Water-Supply Paper 991 should be corrected by adding 0.06 foot to reduce to correct land-surface datum. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Mar. 2 and 3, 10.85; Aug. 23 and 24, 17.33.

Highest daily water level, in feet below land-surface datum, 1944

(From recorder charts)												
Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.12	11.35	10.86	11.73	14.44	14.77	16.55	.....	16.95	16.54	.....	.....
2	12.09	11.34	10.86	11.76	14.44	14.65	16.87	.....	16.88	16.34	.....	.....
3	12.06	11.33	10.85	11.82	14.46	14.53	16.58	.....	16.78	15.74	.....	.....
4	12.03	11.32	.....	11.84	14.51	14.44	16.56	.....	16.69	15.25	.....	.....
5	12.01	11.29	.....	11.87	14.54	14.40	16.54	.....	16.63	15.18	.....	.....
6	11.98	11.28	.....	11.94	14.59	14.42	16.53	.....	16.61	15.12	.....	.....
7	11.97	11.26	.....	12.12	14.64	14.41	16.49	.....	16.60	.....	.....	.....
8	11.95	11.23	.....	12.31	14.68	14.42	16.38	.....	16.59	.....	.....	.....
9	11.92	11.21	.....	12.47	14.72	14.42	16.34	.....	16.59	.....	.....	.....
10	11.89	11.21	11.23	12.67	14.77	14.41	16.27	.....	16.66	.....	.....	.....
11	11.86	11.23	11.24	12.85	14.83	14.43	16.16	.....	16.69	.....	.....	.....
12	11.84	11.26	11.23	13.00	14.90	14.41	16.06	.....	16.72	.....	.....	.....
13	11.83	11.25	11.22	13.16	14.93	14.46	15.97	.....	16.82	.....	.....	13.48
14	11.80	11.23	11.21	13.27	14.97	14.61	15.91	.....	16.94	.....	.....	.....
15	11.76	11.19	11.23	13.42	14.91	14.78	15.90	.....	17.06	.....	.....	.....
16	11.73	11.17	11.26	13.52	14.81	14.95	15.92	.....	17.16	.....	.....	.....
17	11.71	11.14	11.32	13.58	14.71	15.12	16.01	.....	17.21	.....	.....	.....
18	11.69	11.12	11.37	13.58	14.62	15.27	16.07	.....	17.26	14.62	.....	.....
19	11.67	11.11	11.40	14.64	14.54	15.42	16.06	.....	17.30	14.61	.....	.....
20	11.65	11.09	11.39	13.71	14.46	15.34	16.05	.....	17.23	14.60	14.21	.....
21	11.61	11.06	11.39	13.79	14.38	15.64	16.03	.....	17.05	14.59	14.25	.....
22	11.60	11.03	11.40	13.87	14.37	15.76	16.02	17.26	16.89	14.57	14.32	.....
23	11.57	11.01	11.43	13.95	14.39	15.88	.....	17.33	16.70	14.54	14.39	.....
24	11.53	10.97	11.47	14.01	14.47	16.00	.....	17.33	.....	14.61	14.46	.....
25	11.50	10.94	11.49	14.06	14.59	16.11	16.07	17.25	.....	14.48	14.50	.....
26	11.48	10.91	11.52	14.11	14.71	16.21	16.03	17.13	.....	14.47	14.44	.....
27	11.46	10.90	11.56	14.19	14.83	16.30	15.94	17.01	.....	.....	14.37	.....
28	11.43	10.89	11.59	14.27	14.95	16.39	15.89	16.91	.....	.....	.....	.....
29	11.40	10.88	11.64	14.35	15.04	16.18	15.89	.....	15.81	.....	.....	.....
30	11.37	.....	11.68	14.45	14.95	16.53	15.85	.....	15.67	.....	.....	.....
31	11.36	.....	11.71	.....	14.98	.....	16.03	.....	.....	.....	.....	.....

13.26.7.433 (*886, p. 398; 911, p. 166; 941, p. 204; 949, p. 275; 991, p. 224). J. E. Sinn. Water level, in feet below land-surface datum, 1944: Jan. 31, 10.52.

13.26.8.332 (*886, p. 398; 911, p. 166; 941, p. 204; 949, p. 275; 991, p. 224). G. M. Sterrett. Water level, in feet below land-surface datum, 1944: Jan. 31, 7.99.

13.26.8.422 (*845, p. 291; 886, p. 398; 911, p. 161; 941, p. 199; 949, p. 275; *991, p. 224). Jack Hubbard. Measurements discontinued.

13.26.14.331 (*941, pp. 204, 207; 949, p. 275; 991, p. 224). Guy C. and H. E. Saunders. Measuring point beginning Jan. 31, 1944, top of wooden windmill pipe clamps, 0.84 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 31, 1.82; May 15, 6.27; July 19, 4.26.

13.26.16.114a (*886, p. 398; 911, p. 166; 941, p. 204; 949, p. 275; 991, p. 224). U. S. Government fish hatchery. Water level, in feet below land-surface datum, 1944: Jan. 31, 9.71.

13.26.16.114b (*886, p. 398; 911, p. 166; 941, p. 204; 949, p. 275; *991, p. 224). U. S. Government fish hatchery. Water level, in feet below land-surface datum, 1944: Jan. 31, 6.50.

13.26.16.114c (*886, p. 398; 911, p. 166; 941, p. 204; 949, p. 275; 991, p. 224). U. S. Government fish hatchery. Water level, in feet below land-surface datum, 1944: Jan. 31, 6.97.

13.26.17.321 (*845, p. 292; 886, p. 398; 911, p. 162; 941, p. 199; 949, p. 275; 991, p. 224). Leo Nowak.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Feb. 3	14.24	May 16	22.37	Sept. 16	b 22.20
Mar. 25	a 27.38	July 19	20.63	Nov. 20	11.58

a Pumping.

b Pumping prior to measurement.

13.26.17.443 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 275; 991, p. 224). H. Vandembout. Water level, in feet below land-surface datum, 1944: Jan. 31, 13.27.

13.26.17.444 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). H. Vandembout. Water level, in feet below land-surface datum, 1944: Jan. 31, 14.25.

13.26.18.211 (*911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). B. A. Armor. Water level, in feet below land-surface datum, 1944: Jan. 31, 10.64.

13.26.18.311 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). W. F. Kerr. Water level, in feet below land-surface datum, 1944: Feb. 3, 17.71.

13.26.19.222 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). A. T. Stone. Water level, in feet below land-surface datum, 1944: Jan. 31, 21.27.

13.26.19.333 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). Hal Bogle. Pump removed for repairs. Water entering well from break in casing above water level. Measuring point beginning Jan. 31, 1944, top of concrete pump foundation, 0.15 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 31, 18.13.

13.26.19.343 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). Hal Bogle. Well now abandoned. No equipment. Well located in yard to north of house. Water level, in feet below land-surface datum, 1944: Jan. 31, 21.65.

13.26.19.432 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). Tom Bogle. Water level, in feet below land-surface datum, 1944: Jan. 31, 10.68.

13.26.20.113 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 224). A. T. Stone. Water level, in feet below land-surface datum, 1944: Jan. 31, 20.61.

13.26.20.333 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). Odessa White Lockhead. Water level, in feet below land-surface datum, 1944: Jan. 31, 14.86.

13.26.23.111 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). Guy C. and H. E. Saunders. Water level, in feet below land-surface datum, 1944: Jan. 31, 5.44.

13.26.28.111 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). Joe Nowak. Measuring point beginning Jan. 31, 1944, top of casing, 0.40 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 31, 15.33.

13.26.28.121 (*886, p. 399; 911, p. 162; 941, p. 199; 949, p. 276; *991, p. 225). George Grassie.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 31	18.98	May 15	17.87	Sept. 16	a 17.85
Mar. 25	19.93	July 19	21.11		

a Pumping prior to measurement.

13.26.28.221 (*886, p. 399; 911, p. 166; 941, p. 204; *949, p. 276; 991, p. 225). Hal Bogle. Water level, in feet below land-surface datum, 1944: Jan. 31, 10.22.

13.26.28.233 (*886, p. 399; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). F. W. Sadler. Measurements discontinued.

13.26.28.311 (*886, p. 400; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). Joe Giles and Anna Heinzl. Water level, in feet below land-surface datum, 1944: Jan. 31, 15.19.

13.26.29.111 (*911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). J. H. Reid. Water level, in feet below land-surface datum, 1944: Jan. 31, 12.70.

13.26.29.113 (*886, p. 400; 911, p. 166; 941, p. 204; 949, p. 276; 991, p. 225). J. H. Reid. Water level, in feet below land-surface datum, 1944: Jan. 31, 17.60.

13.26.29.211 (*886, p. 400; 911, p. 166; 941, p. 205; 949, p. 276; 991, p. 225). J. H. Reid. Water level, in feet below land-surface datum, 1944: Jan. 31, 11.40.

13.26.29.333 (*886, p. 400; 911, p. 167; 941, p. 205; 949, p. 276; 991, p. 225). M. Y. Monical. Water level, in feet below land-surface datum, 1944: Jan. 31, 15.23.

13.26.29.424 (*911, p. 167; 941, p. 205; 949, p. 276; 991, p. 225). M. Y. Monical. Well now equipped with hand pump. Water level, in feet below land-surface datum, 1944: Jan. 31, 9.15.

13.26.31.241 (*886, p. 400; 911, p. 167; 941, p. 205; 949, p. 276; 991, p. 225). Hal Bogle. Windmill removed and well abandoned. No equipment. Measuring point beginning Jan. 31, 1944, top of slab over well at south side of drill hole, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 31, 12.96.

13.26.31.311 (*886, p. 400; 911, p. 167; 941, p. 205; 949, p. 276; 991, p. 225). E. O. Moore. Water level, in feet below land-surface datum, 1944: Jan. 31, 43.51.

13.26.33.421 (*886, p. 400; 911, p. 167; 941, p. 205; *949, p. 276; 991, p. 225). E. P. Malone. Water level, in feet below land-surface datum, 1944: Jan. 31, 18.14.

13.26.34.313 (*886, p. 400; 911, p. 167; 941, p. 205; *949, p. 276; 991, p. 225). Elton Lankford. Water level, in feet below land-surface datum, 1944: Jan. 31, 10.76.

13.26.34.431 (*941, pp. 205, 207; 949, p. 277; 991, p. 225). Chas. J. Michelet. Water level, in feet below land-surface datum, 1944: Jan. 31, 32.79.

14.25.1.112 (*845, p. 292; 886, p. 400; 911, p. 162; 941, p. 200; 949, p. 277; 991, p. 226). P. R. Fuller.

Water level, in feet below land-surface datum, 1944

Jan. 25	39.33	May 15	(a)	Sept. 17	(b)
Mar. 25	39.48	July 19	(a)	Nov. 20	(b)

a Well dry at 47.0 feet.

b Well dry at 45.6 feet.

14.25.1.343 (*886, p. 400; 911, p. 167; 941, p. 205; 949, p. 271; 991, p. 226). A. W. Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 25, 55.79.

14.25.1.344 (*845, p. 292; 886, p. 400; 911, p. 162; 941, p. 200; 949, p. 271; 991, p. 226). A. W. Langnegger. Measuring point beginning Sept. 17, 1944, bottom north edge of 4- by 4-inch pipe clamps, 0.66 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	52.39	May 15	59.25	Sept. 17	b 64.49
Mar. 25	58.16	July 19	a 70.04	Nov. 20	59.18

a Nearby well pumping.

b Pumping prior to measurement.

14.25.2.233a (*911, p. 167; 941, p. 205; 949, p. 277; 991, p. 226). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 25, 62.32.

14.25.2.431 (*991, p. 226). J. V. Thomas. Water level, in feet below land-surface datum, 1944: Jan. 25, 74.23.

14.25.2.444 (*886, p. 401; 911, p. 167; 941, p. 205; *949, p. 277; 991, p. 226). J. V. Thomas. Water level, in feet below land-surface datum, 1944: Jan. 25, 60.82.

14.25.8.411 (*886, p. 401; 911, p. 167; 941, p. 205; 949, p. 277; 991, p. 226). Ray Mathes. Water level, in feet below land-surface datum, 1944: Jan. 25, 94.68.

14.25.11.333 (*949, p. 277; 991, p. 226). Ray Mathes. Water level, in feet below land-surface datum, 1944: Jan. 25, 88.18.

14.25.12.133a (*949, p. 277; 991, p. 226). Chas. H. Whitman. Water level, in feet below land-surface datum, 1944: Jan. 25, 70.10.

14.25.12.133b (*886, p. 401; 911, p. 167; 941, p. 205; 949, p. 277; 991, p. 226). Chas. H. Whitman. Water level, in feet below land-surface datum, 1944: Jan. 25, 70.63.

14.25.12.313 (*886, p. 401; 911, p. 167; 941, p. 205; 949, p. 277; 991, p. 226). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 25, 73.74.

14.25.12.314. L. T. Lewis. Drilled irrigation well equipped with turbine pump. Measuring point, lower edge of opening in east side of pump case, 0.84 foot above concrete pump foundation and land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 25, 71.35.

14.25.13.213 (*949, p. 277; 991, p. 226). Calvin Graham. Water level, in feet below land-surface datum, 1944: Jan. 24, 68.42.

14.25.13.311 (*886, p. 401; 911, p. 167; 941, p. 205; *949, p. 277; 991, p. 226). E. O. Moore. Water level, in feet below land-surface datum, 1944: Jan. 24, 75.74.

14.25.14.131 (*886, p. 401; 911, p. 167; 941, p. 205; *949, p. 277; 991, p. 226). Ray Mathes. Water level, in feet below land-surface datum, 1944: Jan. 25, 92.54.

14.25.20.443 (*886, p. 401; 911, p. 167; 941, p. 205; 949, p. 278; 991, p. 226). Breeb Hurst.

Water level, in feet below land-surface datum, 1944

Jan. 24	74.10	July 19	74.56	Nov. 21	74.85
May 16	74.42	Sept. 17	74.73		

14.25.24.133 (*886, p. 401; 911, p. 167; 941, p. 205; 949, p. 278; 991, p. 227). E. O. Moore. Water level, in feet below land-surface datum, 1944: Jan. 24, 68.29.

14.25.25.111 (*886, p. 401; 911, p. 167; 941, p. 205; *949, p. 278; 991, p. 227). John M. Norris. Water level, in feet below land-surface datum, 1944: Jan. 24, 66.93.

14.25.25.111a (*991, p. 227). John M. Norris. Water level, in feet below land-surface datum, 1944: Jan. 24, 64.45.

14.25.25.221 (*845, p. 293; designated incorrectly as 14.25.25.112; 886, p. 402; 911, p. 162; 941, p. 200; 949, p. 278; 991, p. 227). John M. Norris. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Mar. 10, 50.07; Sept. 18, 56.65.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	50.81	50.19	50.69	52.05	53.46	54.74	.....	56.38	56.56	.....	.....
2	.....	50.79	50.15	50.77	52.10	53.50	54.75	.....	56.43	56.54	.....	.....
3	.....	50.77	50.15	50.75	52.16	53.53	54.77	.....	56.46	56.54	.....	.....
4	.....	50.72	50.13	50.78	52.20	.....	54.79	.....	56.48	56.54	.....	.....
5	51.40	50.72	50.10	50.81	52.24	.....	54.78	.....	56.50	56.53	.....	.....
6	51.35	50.70	50.11	50.84	52.28	.....	54.79	.....	56.55	56.53	.....	.....
7	51.35	50.65	50.11	50.87	52.34	.....	54.80	.....	56.56	.....	.....	.....
8	51.34	50.65	50.09	50.82	52.40	.....	54.81	.....	56.55	.....	.....	.....
9	51.32	50.58	50.09	50.96	52.45	.....	54.82	.....	56.51	.....	.....	.....
10	51.30	50.64	50.07	51.01	52.50	53.85	54.83	.....	56.54	.....	.....	.....
11	51.15	50.63	50.08	51.09	52.56	53.92	54.85	.....	56.55	.....	.....	.....
12	51.28	50.62	50.10	51.10	52.61	53.92	54.84	.....	56.53	.....	.....	55.43
13	51.25	50.60	50.12	51.15	52.62	53.99	54.87	.....	56.53	.....	.....	55.41
14	51.22	50.55	50.15	51.21	52.70	54.03	54.88	.....	56.56	.....	.....	55.37
15	51.20	50.55	50.17	51.24	52.76	54.07	54.90	.....	56.59	.....	.....	55.38
16	51.20	50.51	50.19	51.27	52.82	54.11	54.92	.....	56.56	.....	.....	55.32
17	51.15	50.52	50.20	51.33	52.86	54.15	54.94	.....	56.63	.....	.....	55.33
18	51.15	50.44	50.25	51.38	52.92	54.25	54.95	.....	56.65	56.42	.....	55.34
19	51.13	50.42	50.32	51.44	52.96	54.28	54.96	.....	56.64	56.40	.....	55.34
20	51.03	50.40	50.32	51.46	53.01	54.32	55.00	.....	56.65	56.40	.....	.....
21	51.03	50.35	50.39	51.52	53.06	54.36	55.00	55.97	56.64	56.38	55.81	.....
22	51.01	50.35	50.45	51.58	53.09	54.41	55.02	56.02	56.62	56.35	55.80	.....
23	50.97	50.31	50.42	51.62	53.14	54.45	.....	56.07	56.63	56.35	55.78	.....
24	50.94	50.30	50.44	51.64	53.17	54.49	55.05	56.12	56.63	56.32	55.76	.....
25	50.94	50.28	50.44	51.69	53.22	54.55	55.07	56.16	.....	56.32	55.80	.....
26	50.92	50.26	50.50	51.78	53.28	54.60	55.08	56.22	.....	.....	55.73	.....
27	50.92	50.26	50.50	51.81	53.29	54.64	55.09	56.23	.....	.....	55.70	.....
28	50.85	50.26	50.56	51.87	53.32	54.67	55.10	56.23	.....	.....	55.73	.....
29	50.87	50.22	.....	51.93	53.36	54.69	55.11	.....	56.55	.....	.....	.....
30	50.85	.....	.....	52.00	53.36	54.73	55.13	.....	56.56	.....	.....	.....
31	50.84	.....	.....	.....	53.43	.....	55.15	.....	.....	.....	.....	.....

14.25.36.111 (*949, p. 278; 991, p. 227). C. H. Foster. Water level, in feet below land-surface datum, 1944: Jan. 24, 58.96.

14.25.36.211. C. H. Foster. Drilled irrigation well equipped with turbine pump. Measuring point, top of casing, 0.60 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 60.83.

14.26.3.111 (*886, p. 402; 911, p. 167; *949, p. 278; 991, p. 227). Flora E. West. Water level, in feet below land-surface datum, 1944: Jan. 29, 14.28.

14.26.3.213 (*886, p. 402; 911, p. 167; 941, p. 205; *949, p. 279; 991, p. 227). Mary Louise Brown. Water level, in feet below land-surface datum, 1944: Jan. 29, 8.31.

14.26.3.413 (*886, p. 402; 911, p. 167; 941, p. 205; *949, p. 279; 991, p. 227). Howard Menefee. Water level, in feet below land-surface datum, 1944: Jan. 29, 10.88.

14.26.3.442 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 227). John Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 25, 18.90.

14.26.4.133a (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). L. E. Harshey. Water level, in feet below land-surface datum, 1944: Jan. 29, 20.69.

14.26.4.133b (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). L. E. Harshey. Measurements discontinued.

14.26.4.141 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). Roy Lockhead. Water level, in feet below land-surface datum, 1944: Jan. 29, 21.61.

14.26.4.231 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). George E. Wade. Water level, in feet below land-surface datum, 1944: Jan. 29, 18.54.

14.26.5.131 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). L. M. Harter. Water level, in feet below land-surface datum, 1944: Jan. 28, 26.93.

14.26.5.211 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). M. D. Menoud. Water level, in feet below land-surface datum, 1944: Jan. 29, 25.46.

14.26.5.243 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). J. D. S. McKinistry. Water level, in feet below land-surface datum, 1944: Jan. 29, 22.28.

14.26.5.433 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). D. L. Newsom. Water level, in feet below land-surface datum, 1944: Jan. 29, 29.24.

14.26.6.111 (*886, p. 403; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). Wiley Grizzle. Water level, in feet below land-surface datum, 1944: Jan. 28, 26.30.

14.26.6.142 (*911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). W. L. Heitmann. Water level, in feet below land-surface datum, 1944: Jan. 28, 26.49.

14.26.6.211 (*886, p. 403; 911, p. 167; 941, p. 205; *949, p. 279; 991, p. 228). Wiley Grizzle. Water level, in feet below land-surface datum, 1944: Jan. 28, 26.88.

14.26.6.232 (*911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). Tom Andrews. Water level, in feet below land-surface datum, 1944: Jan. 28, 32.68.

14.26.6.241 (*886, p. 404; 911, p. 167; 941, p. 205; 949, p. 279; 991, p. 228). Tom Andrews. Water level, in feet below land-surface datum, 1944: Jan. 28, 30.46.

14.26.7.333 (*845, p. 293; *949, p. 279; 991, p. 228). R. G. Campbell. Measurements discontinued.

14.26.7.443 (*845, p. 293; 886, p. 404; 911, p. 163; 941, p. 201; 949, p. 279; *991, p. 228). W. W. Adams.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 28	45.55	May 15	53.14	Nov. 20	52.71
Mar. 25	47.55	July 19	52.59		

14.26.8.112 (*886, p. 404; 911, p. 167; 941, p. 205; *949, p. 279; 991, p. 228). G. L. Truitt. Water level, in feet below land-surface datum, 1944: Jan. 28, 29.03.

14.26.8.243 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 228). P. Flores, Jr. Measuring point beginning Jan. 29, 1944, top of casing, 0.60 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 27.74.

14.26.8.312 (*949, p. 280; 991, p. 229). N. C. Newsom. Water level, in feet below land-surface datum, 1944: Jan. 28, 50.54.

14.26.8.433a (*845, p. 294; *886, p. 404; 911, p. 163; 941, p. 201; *949, p. 280; 991, p. 229). Tom Ferguson. Turbine pump removed and pressure pump installed. Measuring point beginning Jan. 28, 1944, top of casing, 0.10 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 28, 66+ (nearby well pumping).

14.26.9.143 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). V. R. Barnett. Measuring point beginning Jan. 29, 1944, top of tile casing, 0.73 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 29.72.

14.26.9.234 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). Mrs. Myrtle H. Gehman. Measurements discontinued.

14.26.9.434 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). Cave Bros. Water level, in feet below land-surface datum, 1944: Jan. 29, 14.77.

14.26.9.442 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). Oscar Cave. Water level, in feet below land-surface datum, 1944: Jan. 29, 15.64.

14.26.10.121 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). Mrs. Levi Barnett. Water level, in feet below land-surface datum, 1944: Jan. 29, 14.76.

14.26.10.221 (*949, p. 280; 991, p. 229). John Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 29, 13.35.

14.26.10.244 (*886, p. 404; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). John Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 29, 14.04.

14.26.11.111 (*886, p. 405; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). John Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 29, 16.77.

14.26.11.121 (*886, p. 405; 911, p. 168; 941, p. 205; 949, p. 280; *991, p. 229). H. A. Kiper. Water level, in feet below land-surface datum, 1944: Jan. 29, 16.84.

14.26.11.322 (*886, p. 405; 911, p. 168; 941, p. 205; 949, p. 280; *991, p. 229). Marie Stewart. Well abandoned. No equipment. Water level, in feet below land-surface datum, 1944: Jan. 29, 13.59.

14.26.11.444 (*886, p. 405; 911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). W. E. Utterback. Water level, in feet below land-surface datum, 1944: Jan. 29, 10.99.

14.26.12.131 (*845, p. 295; 996, p. 405; 911, p. 163; 941, p. 201; 949, p. 280; 991, p. 229). W. E. Utterback. Measuring point beginning Mar. 25, 1944, top edge of Geological Survey washer on top surface of windmill pipe clamps, 0.45 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 29	21.78	May 16	21.81	Sept. 17	21.34
Mar. 25	21.17	July 20	21.34	Nov. 21	21.87

14.26.12.433b (*911, p. 168; 941, p. 205; 949, p. 280; 991, p. 229). W. N. Olive. Well equipped with turbine pump. Measuring point beginning Jan. 29, 1944, lower edge of 2 $\frac{1}{2}$ - by 5 $\frac{1}{2}$ - inch notch in west side of casing, 0.43 foot below top of casing and land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 15.47.

14.26.13.121 (*886, p. 405; 911, p. 168; 941, p. 206; 949, p. 280; 991, p. 229). L. M. Lang. Water level, in feet below land-surface datum, 1944: Jan. 29, 16.75.

14.26.14.212 (*911, p. 168; 941, p. 206; 949, p. 280; 991, p. 230). B. L. Barnett. Water level, in feet below land-surface datum, 1944: Jan. 29, 13.06.

14.26.14.421 (*949, p. 280; 991, p. 230). Jim Michelet. Water level, in feet below land-surface datum, 1944: Jan. 29, 11.70.

14.26.14.441 (*886, p. 405; 911, p. 168; 941, p. 206; 949, p. 280; 991, p. 230). F. H. Evans. Measuring point beginning Jan. 29, 1944, lower edge of pump base at west side of pump, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 14.26.

14.26.14.443. Drilled irrigation well equipped with turbine pump. Measuring point, top of pump base plate inside of pump case, 1.00 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 11.22.

14.26.15.113 (*886, p. 405; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). State of New Mexico. Measuring point beginning Jan. 15, 1943, top of clamps 0.59 foot above top of casing and 1.42 feet above land-surface datum. Water level, in feet below land-surface datum, including correction to water level published in Water-Supply Paper 991: Jan. 15, 1943, 16.75; Jan. 29, 1944, 17.27.

14.26.15.322 (*941, p. 201; 949, p. 281; 991, p. 230). F. H. Evans. Measuring point, beginning Nov. 21, 1944, top of steel pipe clamps around pump column, 0.20 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 29	8.53	May 16	8.70	Sept. 17	10.54
Mar. 25	8.14	July 20	9.30	Nov. 21	9.80

14.26.15.333 (*886, p. 405; 911, p. 168; 941, p. 201; 949, p. 281; 991, p. 230). E. D. Menoud. Measuring point beginning Mar. 25, 1944, bottom edge of mouth of discharge pipe; subtract 4.67 feet from tape measurements to convert to land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 29	23.43	July 20	25.46	Nov. 21	24.42
Mar. 25	23.53	Sept. 17	23.29		

14.26.17.122 (*949, p. 281; 991, p. 230). R. A. and T. A. Bledsoe. Water level, in feet below land-surface datum, 1944: Jan. 28, 51.88.

14.26.17.211 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). William Salomon. Water level, in feet below land-surface datum, 1944: Jan. 28, 53.33.

14.26.17.444 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 28, 49.13.

14.26.18.113 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). E. D. Watson. Water level, in feet below land-surface datum, 1944: Jan. 28, 59.85.

14.26.18.131 (*949, p. 281; 991, p. 230). E. D. Watson. Water level, in feet below land-surface datum, 1944: Jan. 25, 59.89.

14.26.19.211 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 25, 52.70.

14.26.19.242 (*886, p. 406; 911, p. 168; 941, p. 206; *949, p. 281; 991, p. 230). Oscar A. Pearson. Water level, in feet below land-surface datum, 1944: Jan. 25, 60.77.

14.26.19.311 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). W. C. West. Water level, in feet below land-surface datum, 1944: Jan. 25, 48.72.

14.26.19.444 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). E. E. Lane. Water level, in feet below land-surface datum, 1944: Jan. 25, 61.89.

14.26.20.143 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 281; 991, p. 230). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 25, 60.53.

14.26.20.334 (911, p. 168; 941, p. 206; *949, p. 281; 991, p. 231). E. Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 25, 73.34.

14.26.20.343 (*886, p. 406; 911, p. 168; 941, p. 206; *949, p. 281; 991, p. 231). E. Langnegger. Water level, in feet below land-surface datum, 1944: Jan. 25, 69.68.

14.26.21.333 (*886, p. 406; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). G. E. Wade. No measurements made in 1944.

14.26.21.422 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). A. L. Nail. Water level, in feet below land-surface datum, 1944: Jan. 24, 22.24.

14.26.22.141 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). J. E. Lusk. Equipped with turbine pump. Measuring point beginning Jan. 29, 1944, top of casing, 0.92 foot above land-surface datum, Water level, in feet below land-surface datum, 1944: Jan. 29, 27.98.

14.26.23.131 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). E. A. White. Water level, in feet below land-surface datum, 1944: Jan. 29, 9.11.

14.26.23.214 (*949, p. 282; 991, p. 231). F. E. Pilley. Water level, in feet below land-surface datum, 1944: Jan. 29, 12.94.

14.26.23.413 (*949, p. 282; 991, p. 231). E. A. White. Water level, in feet below land-surface datum, 1944: Jan. 29, 11.14.

14.26.27.111 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; *991, p. 231). J. L. Ogle. Water level, in feet below land-surface datum, 1944: Jan. 24, 15.75.

14.26.27.424. M. C. Brown. Dug and drilled domestic and stock well, equipped with windmill, diameter 6 inches, depth 75 feet. Measuring point, top of 2- by 12-inch board in well cover just south of windmill pump column, 0.60 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 29, 22.97.

14.26.28.111 (*949, p. 282; 991, p. 231). Ross Sears. Water level, in feet below land-surface datum, 1944: Jan. 25, 43.29.

14.26.28.114 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). Ross Sears. Water level, in feet below land-surface datum, 1944: Jan. 25, 36.90 (pumping prior to measurement).

14.26.28.211 (*886, p. 407; 911, p. 168; 941, p. 206; *949, p. 282; 991, p. 231). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 25, 29.48.

14.26.28.423 (*949, p. 282; 991, p. 231). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 24, 18.05.

14.26.29.112 (*886, p. 407; 911, p. 168; 941, p. 206; *949, p. 282; 991, p. 231). Phillip E. Stoess. Water level, in feet below land-surface datum, 1944: Jan. 25, 71.84.

14.26.29.213 (*886, p. 407; 911, p. 168; 941, p. 206; *949, p. 282; 991, p. 231). Phillip E. Stoess. Water level, in feet below land-surface datum, 1944: Jan. 25, 62.05.

14.26.29.441a (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). J. W. Wiggins. Water level, in feet below land-surface datum, 1944: Jan. 25, 41.07.

14.26.29.441b (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). J. W. Wiggins. Water level, in feet below land-surface datum, 1944: Jan. 25, 40.42.

14.26.30.441 (*886, p. 407; 911, p. 168; 941, p. 206; 949, p. 282; 991, p. 231). Ray Bartlett. Measurements discontinued.

14.26.32.131a (*949, p. 282; 991, p. 232). B. F. Knoll. Water level, in feet below land-surface datum, 1944: Jan. 25, 59.33.

14.26.32.331 (*845, p. 295; 886, p. 408; 911, p. 163; 941, p. 201; 949, p. 282; 991, p. 232). B. E. Spencer.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	43.80	May 16	41.97	Sept. 17	40.39
Mar. 25	42.53	July 20	42.04	Nov. 21	40.44

14.26.35.344 (*886, p. 408; 911, p. 168; 941, p. 206; 949, p. 283; 991, p. 232). J. H. King. Upper part of wooden well casing has been cut off. Measuring point beginning Jan. 24, 1944, top of wooden casing on north side of pit, 1.20 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	66.73	July 19	67.22	Nov. 21	67.90
May 16	67.99	Sept. 17	67.60		

15.24.23.344 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). Carroll Jackson. Water level, in feet below land-surface datum, 1944: Jan. 22, 65.87.

15.24.27.344 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). S. A. Lanning. Water level, in feet below land-surface datum, 1944: Jan. 22, 60.64.

15.24.28.244 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 22, 91.22.

15.24.32.211 (*911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). Carl Mangum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 22	37.82	July 20	a 39.19	Nov. 22	37.98
May 16	a 39.40	Sept. 17	38.75		

a Pumping.

15.24.34.341 (*886, p. 408; 911, p. 169; 941, p. 206; *949, p. 283; 991, p. 232). S. A. Lanning. Water level, in feet below land-surface datum, 1944: Jan. 22, 36.26.

15.24.35.143 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). E. P. Malone. Water level, in feet below land-surface datum, 1944: Jan. 22, 16.81.

15.24.36.243 (*886, p. 408; 911, p. 169; 941, p. 206; *949, p. 283; 991, p. 232). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 22, 41.43 (pumping).

15.25.12.111a (*886, p. 408; 911, p. 169; 941, p. 206; *949, p. 283; 991, p. 232). Jack Palmer. Water level, in feet below land-surface datum, 1944: Jan. 24, 41.26.

15.25.12.212b. Drilled irrigation well equipped with turbine pump and gasoline motor (east well). Measuring point, lower edge of opening in east side of pump case, 1.50 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 41.92.

15.25.12.421. C. H. Foster. Drilled irrigation well equipped with turbine pump. Measuring point, top of pump base plate, 0.60 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 41.66.

15.25.24.111 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). Hal Bogle. Water level, in feet below land-surface datum, 1944: Jan. 22, 14.30.

15.25.24.211 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). Jack Palmer. Water level, in feet below land-surface datum, 1944: Jan. 22, 13.16.

15.25.26.423 (*949, p. 283; 991, p. 232). R. T. Spence. Water level, in feet below land-surface datum, 1944: Jan. 22, 4.96.

15.25.27.321 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 283; 991, p. 232). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 22, 35.93.

15.25.28.331 (*886, p. 408; 911, p. 169; 949, p. 283; 991, p. 232). Troy C. Sexton. Well abandoned. No equipment. Well is at northwest corner of reservoir. Measuring point beginning Jan. 22, 1944, top of casing, level with concrete pump foundation, 0.70 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 22, 30.27.

15.25.28.331a. Troy C. Sexton. Drilled irrigation well equipped with turbine pump. Well is located at southwest corner of reservoir. Measuring point, top of casing, 0.50 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 22, 29.38.

15.25.33.112 (*886, p. 408; 911, p. 169; 941, p. 206; *949, p. 283; 991, p. 232). Carroll Jackson. Water level, in feet below land-surface datum, 1944: Jan. 22, 20.33.

15.25.35.111 (*845, p. 295; 886, p. 408; 911, p. 163; 941, p. 201; 949, p. 283; 991, p. 233). Moss M. Spence. Windmill disconnected and automatic pressure pump installed. Measuring point beginning May 16, 1944, top of casing, 0.30 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 22	26.69	May 16	26.02	Sept. 15	25.46
Mar. 25	23.44	July 20	26.72	Nov. 21	26.47

15.25.35.311 (*886, p. 408; 911, p. 169; 941, p. 206; 949, p. 284; 991, p. 233). Paul Robinson. Water level, in feet below land-surface datum, 1944: Jan. 22, 37.67.

15.25.36.333 (*886, p. 409; 911, p. 169; 941, p. 206; 949, p. 284; 991, p. 233). John M. Norris. Measuring point beginning Jan. 22, 1944, center of $\frac{3}{8}$ -inch tap hole in top of discharge pipe. Subtract 1.60 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 22, 27.96.

15.25.36.333a (*949, p. 284; 991, p. 233). John M. Norris. Water level, in feet below land-surface datum, 1944: Jan. 22, 27.75.

15.26.4.444 (*886, p. 417; 911, p. 163; 941, p. 201; 949, p. 284; 991, p. 233). Harry Cowan.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	36.01	May 16	35.79	Sept. 17	37.56
Mar. 25	35.30	July 19	36.78	Nov. 21	37.33

15.26.5.121 (*886, p. 409; 911, p. 169; 941, p. 206; *949, p. 284; 991, p. 233). B. E. Spencer. Measuring point beginning Jan. 24, 1944, top north edge of metal ring inside circular concrete curb, 0.03 foot below surface of concrete, 0.41 foot above top of casing, 0.20 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	43.16	May 16	45.37	Sept. 17	47.58
Mar. 25	44.04	July 20	46.64	Nov. 21	47.58

15.26.5.142 (*886, p. 409; 911, p. 169; 941, p. 206; 949, p. 284; 991, p. 233). A. Russell Estate. Water level, in feet below land-surface datum, 1944: Jan. 24, 32.87.

15.26.6.311 (*886, p. 409; 911, p. 169; 941, p. 206; 949, p. 284; 991, p. 233). Calvin Graham. Water level, in feet below land-surface datum, 1944: Jan. 24, 37.25.

15.26.7.312. C. H. Foster. Drilled irrigation well equipped with turbine pump. Measuring point, lower edge of opening in west side of pump case, 1.10 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 36.25.

15.26.8.411. E. M. George. Drilled irrigation well equipped with turbine pump. Measuring point, lower edge of opening in east side of pump case, 0.76 foot above concrete pump foundation, 1.64 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 16.08.

15.26.8.413. E. M. George. Drilled irrigation well equipped with turbine pump. Measuring point, top of pump base plate inside pump case, 0.12 foot above concrete pump foundation, 0.50 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 15.53.

15.26.9.133 (*911, p. 169; 941, p. 206; 949, p. 284; 991, p. 233). E. M. George. Measuring point beginning Jan. 24, 1944, top of casing, 1.50 feet below land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 18.50.

15.26.14.222 (*949, p. 284; 991, p. 233). Breeb Hurst. Water level, in feet below land-surface datum, 1944: Jan. 24, 5.78.

15.26.17.211. E. M. George. Drilled irrigation well equipped with turbine pump. Measuring point, top of pump base plate inside case, 0.17 foot above concrete pump foundation, 0.61 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 12.06.

15.26.18.112. R. T. Spence. Drilled irrigation well. No equipment. Measuring point, top of casing at south side of well, 0.20 foot above concrete pump foundation, 0.70 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 24, 31.29.

15.26.19.211 (*941, p. 202; 949, p. 284; 991, p. 233). Lake Arthur Cemetery.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 22	30.98	May 16	31.21	Sept. 15	33.54
Mar. 25	30.61	July 19	32.55	Nov. 21	33.71

15.26.19.442 (*886, p. 418; 911, p. 169; 941, p. 207; *949, p. 284; 991, p. 233). J. F. Frazier. Water level, in feet below land-surface datum, 1944: Jan. 22, 9.65.

15.26.20.144 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 233). J. W. Webb. Water level, in feet below land-surface datum, 1944: Jan. 24, 24.00.

15.26.20.431 (*886, p. 418; 911, p. 169; 941, p. 207; *949, p. 284; 991, p. 233). Bill Walton Estate. Water level, in feet below land-surface datum, 1944: Jan. 22, 14.34.

15.26.29.111 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 233). E. C. Jackson. Water level, in feet below land-surface datum, 1944: Jan. 24, 6.57.

15.26.29.222 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 233). Lake Arthur Drainage District. Measurements discontinued.

15.26.29.231 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 233). Mrs. Hattie C. Evans. Measurements discontinued.

15.26.30.131 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 234). Paul Robinson. Water level, in feet below land-surface datum, 1944: Jan. 22, 7.68.

15.26.30.224 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; *991, p. 234). First National Bank of Artesia. Water level, in feet below land-surface datum, 1944: Jan. 22, 9.37.

15.26.30.411 (*991, p. 234). J. B. Crook. Measuring point beginning Jan. 22, 1944, outside edge of east $\frac{1}{2}$ -inch hole in south side of pump base, 0.10 foot above top of casing and 0.85 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 22, 14.39.

15.26.31.111 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 234). E. J. Gromo. Water level, in feet below land-surface datum, 1944: Jan. 22, 12.98.

15.26.31.333 (*949, p. 284; 991, p. 234). B. E. Spencer. Water level, in feet below land-surface datum, 1944: Jan. 22, 17.87.

15.26.32.231 (*886, p. 418; 911, p. 169; 941, p. 207; 949, p. 284; 991, p. 234). Mrs. Hattie C. Evans. Water level, in feet below land-surface datum, 1944: Jan. 22, 9.18.

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16.25.1.101 3 (*886, p. 418; 911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 15, 10.61.

16.25.1.101 13 (*991, p. 234). Charles Buck. Water level, in feet below land-surface datum, 1944: Jan. 15, 14.66.

16.25.1.344 (*886, p. 418; 911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). Buck Bros.

16.25.1.344. Buck Bros.--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 15	9.94	July 20	15.75	Nov. 22	12.78
May 16	24.07	Sept. 15	16.04		

16.25.2.lot 9 (*886, p. 419; 911, p. 172; 941, p. 210; 949, p. 285; *991, p. 234). Ralph Pearson. Water level, in feet below land-surface datum, 1944: Jan. 15, 14.07.

16.25.2.lot 15 (*911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). Ralph Pearson. Water level, in feet below land-surface datum, 1944: Jan. 15, 17.35.

16.25.4.lot 12 (*886, p. 419; 911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). J. E. Taylor. Water level, in feet below land-surface datum, 1944: Jan. 15, 11.98.

16.25.5.lot 4 (*886, p. 419; 911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). E. P. Malone, Jr. Water level, in feet below land-surface datum, 1944: Jan. 15, 11.14.

16.25.5.lot 5 (*949, p. 285; 991, p. 234). E. P. Malone, Jr. Water level, in feet below land-surface datum, 1944: Jan. 15, 12.49.

16.25.5.lot 13 (*886, p. 419; 911, p. 172; 941, p. 210; 949, p. 285; 991, p. 234). Fred Groom. Water level, in feet below land-surface datum, 1944: Jan. 15, 5.76.

16.25.5.443 (*886, p. 419; 911, p. 173; 941, p. 210; 949, p. 285; 991, p. 234). Winton M. Ault. Water level, in feet below land-surface datum, 1944: Jan. 15, 16.61.

16.25.6.lot 4 (*845, p. 296; 886, p. 419; 911, p. 169; 941, p. 207; 949, p. 285; 991, p. 234). Fred M. Nelson.

Water level, in feet below land-surface datum, 1944

Jan. 15	13.12	May 16	13.64	Sept. 17	14.20
Mar. 25	13.50	July 20	14.60	Nov. 22	15.00

16.25.6.313 (*845, p. 296; 886, p. 419; 911, p. 169; 941, p. 207; *949, p. 285; 991, p. 235). Frank Childress. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 9, 27.96; Dec. 12-13, 29.40.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.26	28.27	28.07	28.03	28.18	28.59	29.02	29.15	29.18	29.18	29.18	29.18
2	28.27	28.14	28.28	28.03	28.17	28.54	29.02	29.18	29.18	29.18	29.18	29.18
3	28.32	28.12	28.32	28.21	28.15	28.56	29.09	29.17	29.17	29.17	29.17	29.17
4	28.25	28.24	28.16	28.31	28.61	28.61	29.17	29.20	29.20	29.20	29.20	29.20
5	28.33	28.27	28.06	28.16	28.15	28.66	29.19	29.20	29.20	29.20	29.20	29.20
6	28.11	28.31	28.20	28.05	28.06	28.59	29.21	29.26	29.26	29.26	29.26	29.26
7	28.11	28.18	28.37	28.05	27.99	28.58	29.24	29.24	29.24	29.24	29.24	29.24
8	28.41	28.16	28.37	27.98	28.03	28.60	29.18	29.18	29.18	29.18	29.18	29.18
9	28.25	28.07	28.28	27.96	28.12	28.65	29.05	29.05	29.05	29.05	29.05	29.05
10	28.21	28.18	28.12	28.00	28.14	28.32	28.67	29.04	29.04	29.04	29.04	29.04
11	28.22	28.42	28.12	28.23	28.19	28.25	28.67	29.10	29.10	29.10	29.10	29.10
12	28.42	28.25	28.16	28.12	28.24	28.25	28.72	29.12	29.12	29.12	29.12	29.12
13	28.47	28.15	28.16	27.99	28.26	28.34	28.79	29.06	29.06	29.06	29.06	29.06
14	28.29	28.18	28.15	28.03	28.17	28.37	28.75	29.04	29.04	29.04	29.04	29.04
15	28.25	28.16	28.17	28.05	28.06	28.38	28.72	29.04	29.04	29.04	29.04	29.04
16	28.25	28.16	28.21	27.99	28.03	28.36	28.69	29.16	29.16	29.16	29.16	29.16
17	28.40	28.23	28.07	27.99	28.03	28.39	28.72	29.15	29.15	29.15	29.15	29.15
18	28.37	28.31	28.06	28.14	28.09	28.49	28.77	29.15	29.28	29.28	29.28	29.28
19	28.37	28.39	28.17	28.11	28.09	28.51	28.77	29.18	29.28	29.28	29.28	29.28
20	28.26	28.29	28.04	27.99	28.09	28.42	28.76	29.21	29.28	29.28	29.28	29.28

16.25.6.313. Frank Childress--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	28.22	28.18	28.12	28.00	28.13	28.43	28.77	29.12	.....	29.28	.....	.....
22	28.24	28.27	28.30	28.07	28.12	28.45	28.76	29.12	.....	29.38	29.35	.....
23	28.13	28.18	28.19	28.20	28.15	28.57	.....	29.14	.....	29.37	29.25	.....
24	28.02	28.14	28.02	28.03	28.13	28.55	28.69	29.08	.....	29.33	28.95	.....
25	28.04	28.14	28.08	28.03	28.15	28.51	28.69	29.05	.....	29.33	28.95	.....
26	28.17	28.18	28.08	28.12	28.28	28.48	28.73	29.05	.....	.....	29.24	.....
27	.....	28.22	28.18	28.19	28.38	28.49	28.78	29.18	.....	.....	29.23	.....
28	28.33	28.29	28.17	28.04	28.35	28.59	28.80	29.17	.....	.....	29.23	.....
29	28.28	28.36	28.25	28.06	28.28	28.76	28.77	.....	29.14	.....	29.37	.....
30	28.32	.....	28.22	28.04	28.22	28.68	28.77	.....	29.12	.....	.....	.....
31	28.36	.....	28.05	.....	28.21	.....	28.78	.....	.....	.....	.....	.....

16.25.8.111 (*886, p. 420; 911, p. 173; 941, p. 210; 949, p. 286; *991, p. 235). Pearson Bros. Water level, in feet below land-surface datum, 1944: Jan. 15, 25.64.

16.25.10.333. Orval Gray. Drilled irrigation well, equipped with turbine pump, diameter 15 $\frac{1}{2}$ inches, depth 250 feet. Measuring point, lower edge of opening in south side of pump case, 1.00 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 13, 56.55.

16.25.10.334 (*886, p. 420; 911, p. 173; *949, p. 286; 991, p. 235). Orval Gray. Measuring point beginning Jan. 13, 1944, lower edge of hole in south side of pump case, 0.95 foot above top of casing and land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 13, 52.14.

16.25.11.133. J. J. Terry. Drilled irrigation well, equipped with turbine pump, diameter 12 $\frac{1}{2}$ inches, depth 235 feet. Measuring point, center of $\frac{1}{2}$ -inch tap hole in top of discharge pipe. Subtract 1.70 foot from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 15, 34.46.

16.25.11.233 (*886, p. 420; 911, p. 173; 941, p. 210; 949, p. 286; 991, p. 236). Noah Buck. Water level, in feet below land-surface datum, 1944: Jan. 15, 31.26.

16.25.12.124 (*886, p. 420; 911, p. 173; 941, p. 210; 949, p. 286; 991, p. 236). Buck Brothers. Water level, in feet below land-surface datum, 1944: Jan. 15, 16.92.

16.25.12.412 (*886, p. 420; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). T. J. Terry. Water level, in feet below land-surface datum, 1944: Jan. 15, 12.72.

16.25.13.211 (*886, p. 420; 911, p. 173; 941, p. 211; *949, p. 286; 991, p. 236). T. J. Terry. Water level, in feet below land-surface datum, 1944: Jan. 13, 23.55.

16.25.14.213 (*886, p. 420; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 13, 34.79.

16.25.15.233 (*886, p. 420; 911, p. 173; *949, p. 286; 991, p. 236). J. H. Everest. Water level, in feet below land-surface datum, 1944: Jan. 13, 72.24.

16.25.15.331 (*886, p. 421; 911, p. 173; 949, p. 286; 991, p. 236). J. H. Everest. Measuring point beginning Jan. 15, 1944, center of $\frac{1}{2}$ -inch tap hole in top of discharge pipe near pump. Subtract 1.00 foot from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 13, 90.73.

16.25.24.212 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). Monroe Howard. Water level, in feet below land-surface datum, 1944: Jan. 13, 35.11.

16.26.5.lot 3 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). Ed Taylor. Water level, in feet below land-surface datum, 1944: Jan. 15, 27.09.

16.26.5.lot 4 (*845, p. 297; 886, p. 421; 911, p. 170; 941, p. 211; 949, p. 286; 991, p. 236). H. V. Parker. Water level, in feet below land-surface datum, 1944: Jan. 15, 31.84 (pumping).

16.26.5.331 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). Nancy A. Eipper. Water level, in feet below land-surface datum, 1944: Jan. 22, 16.57.

16.26.6.lot 2 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 286; 991, p. 236). H. V. Parker. Measuring point beginning Jan. 15, 1944, center of $\frac{1}{2}$ -inch tap hole in discharge pipe west of pump. Subtract 1.50 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 15, 31.02.

16.26.6.lot 4 (*886, p. 421; 911, p. 173; 949, p. 287; 991, p. 236). H. V. Parker. Water level, in feet below land-surface datum, 1944: Jan. 15, 34.25.

16.26.6.lot 4a. H. V. Parker. Drilled irrigation well equipped with small turbine pump. Measuring point, top of casing, 0.50 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 15, 28.73.

16.26.6.333 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 236). Scott Meyer. Measuring point beginning Jan. 15, 1944, top of $\frac{3}{4}$ -inch horizontal bolt between 4- by 4-inch pump supports, on west side of well, 0.10 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 15, 10.83.

16.26.7.121 (*886, p. 421; 911, p. 173; 941, p. 211; *949, p. 287; 991, p. 236). L. T. Lewis. Water level, in feet below land-surface datum, 1944: Jan. 15, 9.21.

16.26.7.321 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 236). Charles Buck. Water level, in feet below land-surface datum, 1944: Jan. 22, 5.83.

16.26.8.111 (*886, p. 421; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 236). Ira S. Reser. Water level, in feet below land-surface datum, 1944: Jan. 22, 13.69.

16.26.15.333 (*949, p. 287; 991, p. 236). Carl Manda. Water level, in feet below land-surface datum, 1944: Jan. 13, 10.77.

16.26.16.313 (*886, p. 422; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 236). V. L. Gates. Measuring point beginning Jan. 13, 1944, bottom edge of mouth of discharge pipe. Subtract 6.70 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 13, 5.20.

16.26.17.311 (*886, p. 422; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 237). W. R. Roberts. Water level, in feet below land-surface datum, 1944: Jan. 13, 19.23.

16.26.17.331 (*886, p. 422; 911, p. 173; 941, p. 211; 949, p. 287; *991, p. 237). Elzie Swift. Water level, in feet below land-surface datum, 1944: Jan. 13, 8.82.

16.26.18.331 (*886, p. 422; 911, p. 173; 941, p. 211; *949, p. 287; 991, p. 237). Monroe Howard. Turbine pump installed in well. Measuring point beginning Jan. 13, 1944, top edge of 2-inch hole in west side of pump, 0.39 foot below concrete retaining wall just west of well, 0.91 foot above land-surface datum. To measure, unscrew pipe from pump base. Water level, in feet below land-surface datum, 1944: Jan. 13, 19.36.

16.26.18.411 (*886, p. 422; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 237). Ira S. Reser. Water level, in feet below land-surface datum, 1944: Jan. 13, 17.47.

16.26.19.113 (*886, p. 422; 911, p. 173; 941, p. 211; *949, p. 287; 991, p. 237). Henry E. Hall. Water level, in feet below land-surface datum, 1944: Jan. 13, 21.18.

16.26.19.133 (*886, p. 422; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 237). F. M. Privett. Water level, in feet below land-surface datum, 1944: Jan. 13, 21.59.

16.26.19.211 (*886, p. 422; 911, p. 173; 941, p. 211; *949, p. 287; 991, p. 237). H. V. Parker. Water level, in feet below land-surface datum, 1944: Jan. 13, 14.16.

16.26.19.411 (*886, p. 409; 911, p. 170; 941, p. 208; 949, p. 287; *991, p. 237). F. M. Privett.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 13	32.71	May 16	46.63	Sept. 15	39.82
Mar. 25	38.47	July 20	43.37	Nov. 21	34.37

16.26.21.333 (*886, p. 409; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 237). J. H. Everest. Water level, in feet below land-surface datum, 1944: Jan. 13, 5.64.

16.26.28.333 (*886, p. 410; 911, p. 170; 941, p. 208; 949, p. 287; *991, p. 237). Irvin Dixon.

Water level, in feet below land-surface datum, 1944

Jan. 13	13.28	May 16	19.35	Sept. 15	18.09
Mar. 25	15.12	July 20	18.54	Nov. 21	13.50

16.26.28.431 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 287; 991, p. 237). R. E. Coleman. Water level, in feet below land-surface datum, 1944: Jan. 13, 12.85.

16.26.31.413 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 237). W. W. Wilson. Water level, in feet below land-surface datum, 1944: Jan. 13, 44.18.

16.26.32.231 (*991, p. 237). B. E. Green. Water level, in feet below land-surface datum, 1944: Jan. 13, 23.05.

16.26.32.411 (*886, p. 410; 911, p. 173; 941, p. 211; *949, p. 288; 991, p. 237). L. E. Green. Water level, in feet below land-surface datum, 1944: Jan. 13, 19.15.

16.26.32.421 (*886, p. 410; 911, p. 173; 941, p. 211; *949, p. 288; 991, p. 237). W. W. Parker. Water level, in feet below land-surface datum, 1944: Jan. 13, 16.97.

16.26.35.113 (*991, p. 238). Mary E. Strunk. Water level, in feet below land-surface datum, 1944: Jan. 13, 9.52.

17.25.13.131 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). L. G. Monseheke. Water level, in feet below land-surface datum, 1944: Jan. 11, 91.48.

17.25.22.223 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 11, 145.38.

17.25.24.433 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). J. M. Jackson. Water level, in feet below land-surface datum, 1944: Jan. 10, 88.46.

17.25.26.222 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Mildred and Minnie L. Doss. Water level, in feet below land-surface datum, 1944: Jan. 10, 97.78.

17.25.35.411 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Ed Kissinger Estate. Water levels, in feet below land-surface datum, 1944: Jan. 10, 111.77; May 17, 114.67; Sept. 15, 117.35; Nov. 22, 115.56.

17.26.2.133 (*886, p. 410; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Fred Savoie. Water level, in feet below land-surface datum, 1944: Jan. 12, 8.52.

17.26.3.231 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). H. R. Rogers. Water level, in feet below land-surface datum, 1944: Jan. 12, 8.67.

17.26.3.333 (*949, p. 288; 991, p. 238). A. T. Woelk. Water level, in feet below land-surface datum, 1944: Jan. 12, 11.18.

17.26.3.433 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Mrs. R. W. Box. Water level, in feet below land-surface datum, 1944: Jan. 12, 8.75.

17.26.4.121 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 12, 12.96.

17.26.4.331a (*886, p. 411; 911, p. 173; 941, p. 211; *949, p. 288; 991, p. 238). Howard Stroup. Measuring point beginning Jan. 12, 1944, top of small hole in east side of casing, 0.06 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 5.83.

17.26.4.331b (*886, p. 411; 911, p. 173; 941, p. 211; *949, p. 288; 991, p. 238). Howard Stroup. Water level, in feet below land-surface datum, 1944: Jan. 12, 6.18.

17.26.4.413 (*886, p. 411; 911, p. 173; *949, p. 288; 991, p. 238). Fred Crawford. No measurements made in 1944.

17.26.5.422 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Doris Newberry. Water level, in feet below land-surface datum, 1944: Jan. 12, 14.77.

17.26.6.413 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). Fred and B. A. Savoie. Water level, in feet below land-surface datum, 1944: Jan. 11, 40.45.

17.26.7.131 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 238). J. W. Collins. Water level, in feet below land-surface datum, 1944: Jan. 11, 50.07.

17.26.7.221. Buck Jernigan. Drilled irrigation well, equipped with turbine pump. Measuring point, top of rectangular hole in south side of pump base, 0.08 foot above concrete pump foundation, 0.68 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 32.74.

17.26.7.344 (*886, p. 411; 911, p. 170; 941, p. 208; 949, p. 289; *991, p. 238). Everst E. Scoggins.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	37.53	May 16	46.29	Sept. 15	45.45
Mar. 25	41.28	July 20	49.93	Nov. 22	40.49

17.26.7.421 (*886, p. 412; 911, p. 173; 941, p. 211; 949, p. 288; 991, p. 239). Ivan Rogers. Well pit filled. Measuring point beginning Jan. 11, 1944, top of casing, 0.50 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 25.43.

17.26.7.423 (*911, p. 173; 941, p. 211; *949, p. 289; 991, p. 239). C. A. Houghton. Well now equipped with turbine pump. Water level, in feet below land-surface datum, 1944: Jan. 11, 22.44.

17.26.7.433 (*886, p. 411; 911, p. 173; 941, p. 211; 949, p. 289; 991, p. 239). Ed Stone. Water level, in feet below land-surface datum, 1944: Jan. 11, 33.49.

17.26.7.444 (*886, p. 412; 911, p. 173; 941, p. 211; 949, p. 289; *991, p. 239). Albert Blake. Water level, in feet below land-surface datum, 1944: Jan. 11, 29.09.

17.26.9.333 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). New Mexico Asphalt & Refining Co. Measuring point beginning Jan. 11, 1944, top of platform over pit, at land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 11.39.

17.26.10.333 (*886, p. 412; 911, p. 170; 941, p. 208; 949, p. 289; 991, p. 239). V. L. Gates. Water levels, in feet below land-surface datum, 1944: Jan. 11, 6.76; Mar. 25, 10.23; Sept. 15, 8.44; Nov. 23, 7.48.

17.26.10.433 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). D. D. Sullivan. Water level, in feet below land-surface datum, 1944: Jan. 11, 17.76.

17.26.15.113 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). R. L. Vogel. Measuring point beginning Jan. 11, 1944, center of $\frac{3}{8}$ -inch tap hole in top of discharge pipe south of pump. Subtract 1.80 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 5.58.

17.26.15.121 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). R. L. Vogel. Water level, in feet below land-surface datum, 1944: Jan. 11, 10.29.

17.26.15.211 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). J. M. Vogel. Water level, in feet below land-surface datum, 1944: Jan. 11, 14.89.

17.26.15.411 (*886, p. 412; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). M. F. Hardendorf. Measuring point beginning Jan. 11, 1944, top of pump base at $\frac{3}{8}$ -inch hole on south side of pump, 0.15 foot above concrete pump foundation, 1.15 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 15.24.

17.26.16.333 (*845, p. 298; 886, p. 412; *911, p. 171; 941, p. 208; 949, p. 289; *991, p. 239). G. G. Armstrong & Son. Artesia Cemetery. Measuring point destroyed. Measuring point beginning July 20, 1944, top of casing, 0.25 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 10	11.07	May 16	31.72	Sept. 15	a 17.91
Mar. 25	26.95	July 20	33.19	Nov. 22	12.81

a Pumping prior to measurement.

17.26.16.411 (*886, p. 413; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 239). G. G. Armstrong & Son. Water level, in feet below land-surface datum, 1944: Jan. 11, 15.50.

17.26.17.423 (*886, p. 413; 911, p. 174; 941, p. 211; 949, p. 289; *991, p. 240). H. A. Denton. Water level, in feet below land-surface datum, 1944: Jan. 11, 18.18.

17.26.18.433 (*886, p. 413; 911, p. 174; 941, p. 211; 949, p. 289; 991, p. 240). Albino C. Baca. Water level, in feet below land-surface datum, 1944: Jan. 10, 44.80.

17.26.18.442 (#886, p. 413; 911, p. 174; 941, p. 211; 949, p. 290; 991, p. 240). Mrs. Murphy. Measuring point beginning Jan. 10, 1944, top of casing, 0.25 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 32.51.

17.26.20.133 (#886, p. 413; 911, p. 174; 941, p. 211; 949, p. 290; 991, p. 240). W. E. Ragsdale. Water level, in feet below land-surface datum, 1944: Jan. 10, 30.90.

17.26.21.112 (#886, p. 413; 911, p. 174; 941, p. 211; 949, p. 290; 991, p. 240). Roger Durand. Water level, in feet below land-surface datum, 1944: Jan. 11, 12.58.

17.26.21.341 (#886, p. 413; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). W. S. Hogsett. Measuring point beginning Jan. 10, 1944, bottom edge of southwest hole in northwest side of pump case, 0.05 foot above concrete pump foundation, 1.55 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 3.02.

17.26.22.233 (#886, p. 413; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). R. L. Paris. Water level, in feet below land-surface datum, 1944: Jan. 10, 21.32.

17.26.24.333 (#949, p. 290; 991, p. 240). Mary E. Yates. Water levels, in feet below land-surface datum, 1944: Jan. 10, 2.86; July 20, 4.44; Sept. 15, 3.52; Nov. 23, 3.02.

17.26.27.413 (#886, p. 413; 911, p. 174; 941, p. 212; #949, p. 290; 991, p. 240). W. Leslie Martin. Measuring point beginning Jan. 10, 1944, top of casing, at land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 14.50.

17.26.27.423 (#886, p. 413; 911, p. 174; 941, p. 212; #949, p. 290; 991, p. 240). W. Leslie Martin. Water level, in feet below land-surface datum, 1944: Jan. 10, 12.71.

17.26.28.331 (#886, p. 413; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). Carl E. Martin. Water level, in feet below land-surface datum, 1944: Jan. 10, 13.24.

17.26.29.131a (#886, p. 413; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). Carl E. Martin. Water level, in feet below land-surface datum, 1944: Jan. 10, 31.05.

17.26.31.133 (#886, p. 413; 911, p. 174; 941, p. 212; #949, p. 290; 991, p. 240). G. R. Brainard. Water level, in feet below land-surface datum, 1944: Jan. 10, 60.76.

18.25.23.111 (#949, p. 290; 991, p. 240). Mrs. G. M. Phelps. Water levels, in feet below land-surface datum, 1944: Jan. 10, 91.04; May 17, 111.60; Sept. 15, 105.26; Nov. 22, 94.86.

18.26.2.333 (#886, p. 414; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). S. O. Higgins. Pump removed for repairs. Measuring point beginning Jan. 7, 1944, top of casing, 0.70 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 7, 11.02.

18.26.4.111b (#845, p. 298; 886, p. 414; 911, p. 171; 941, p. 212; 949, p. 290; 991, p. 240). Frank Watkins.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	21.61	May 16	25.83	Nov. 22	23.28
Mar. 25	25.18	Sept. 15	26.52		

18.26.4.433 (#886, p. 414; 911, p. 174; 941, p. 212; 949, p. 290; 991, p. 240). W. M. Schneider. Water level, in feet below land-surface datum, 1944: Jan. 7, 18.59.

18.26.7.234a (*845, p. 299; *886, p. 414; 911, p. 177; 941, p. 209; 949, p. 290; 991, p. 241). C. H. Hutsonpillar. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Feb. 25-26, 46.46; Sept. 3-4, 53.70.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	46.83	46.56	47.20	49.04	50.70	51.45	.....	.....	52.80	.....	.....
2	.....	46.81	46.55	.....	49.10	50.73	51.46	.....	53.69	52.75	.....	.....
3	.....	46.31	46.55	47.42	49.19	50.75	51.47	.....	53.70	52.70	.....	.....
4	.....	46.74	46.60	47.42	49.27	.....	51.48	.....	53.70	52.66	.....	.....
5	47.35	46.73	46.56	47.44	49.31	.....	51.51	.....	53.69	52.62	.....	.....
6	47.25	46.72	46.60	47.49	49.36	.....	51.54	.....	53.68	52.58	.....	.....
7	47.25	46.68	46.66	47.52	49.40	.....	51.56	.....	53.67	.....	.....	.....
8	47.28	46.67	46.70	47.56	49.42	.....	51.60	.....	53.64	.....	.....	.....
9	47.22	46.61	46.69	47.59	49.49	.....	51.62	.....	53.57	.....	.....	.....
10	47.18	46.63	46.60	47.64	49.54	50.88	51.65	.....	53.54	.....	.....	.....
11	47.18	46.67	46.60	47.75	49.62	50.87	51.66	.....	53.50	.....	.....	.....
12	47.22	46.61	46.61	47.81	49.70	50.87	51.71	.....	53.46	.....	.....	a50.82
13	47.20	46.55	46.65	47.85	49.76	50.88	51.75	.....	53.41	.....	.....	.....
14	47.13	46.56	46.65	47.90	49.82	50.91	51.78	.....	53.37	.....	.....	.....
15	47.08	46.53	46.66	47.96	49.87	50.92	51.82	.....	53.34	.....	.....	.....
16	47.08	46.52	46.69	48.08	49.92	50.93	51.86	.....	53.30	.....	.....	.....
17	47.10	46.53	46.69	48.10	49.98	50.96	51.90	.....	53.28	.....	.....	.....
18	47.08	46.55	46.70	48.21	50.06	50.99	51.94	.....	53.25a	51.96	.....	.....
19	47.06	46.58	46.78	48.28	50.13	51.01	51.99	.....	53.22	.....	.....	.....
20	47.00	46.56	46.74	48.35	50.20	51.04	52.04	.....	53.21	.....	.....	.....
21	46.98	46.52	46.77	48.39	50.28	51.06	52.10	.....	53.19	.....	.....	.....
22	46.97	46.55	46.86	48.47	50.33	51.09	52.13	52.52	53.16	.....	a50.48	.....
23	46.90	46.52	46.91	48.61	50.38	51.14	52.15	52.57	53.15	.....	.....	.....
24	46.85	46.52	46.88	48.66	50.44	51.17	52.18	52.65	53.12	.....	.....	.....
25	46.85	46.46	46.96	48.68	50.49	51.21	52.19	52.68	.....	.....	.....	.....
26	46.85	46.46	46.96	48.74	50.54	51.23	52.21	52.71	.....	.....	.....	.....
27	46.88	46.47	47.04	48.83	50.59	51.27	52.22	52.74	.....	.....	.....	.....
28	46.88	46.50	47.05	48.89	50.64	51.33	52.23	52.74	.....	.....	.....	.....
29	46.86	46.54	47.16	48.90	50.64	51.41	52.24	.....	52.89	.....	.....	.....
30	46.86	.....	47.16	49.00	50.65	51.44	52.25	.....	52.85	.....	.....	.....
31	46.36	.....	47.19	.....	50.68	.....	52.25	.....	.....	.....	.....	.....

a Tape measurement.

18.26.7.234c (*845, p. 300; *886, p. 414; 911, p. 174; 941, p. 212; 949, p. 291; 991, p. 241). C. H. Hutsonpillar. Water level, in feet below land-surface datum, 1944: Jan. 7, 53.73.

18.26.9.133 (*991, p. 241). Martin Yates, Jr. Water level, in feet below land-surface datum, 1944: Jan. 6, 29.46.

18.26.9.311 (*886, p. 414; 911, p. 174; 941, p. 212; *949, p. 291; 991, p. 241). Mrs. R. J. Johnston. Water level, in feet below land-surface datum, 1944: Jan. 6, 29.90.

18.26.10.233 (*886, p. 415; 911, p. 174; 941, p. 212; 949, p. 291; 991, p. 241). Charles Rogers. Water level, in feet below land-surface datum, 1944: Jan. 7, 12.20.

18.26.15.133 (*886, p. 415; 911, p. 174; 941, p. 212; 949, p. 291; 991, p. 241). J. D. Terry Estate. Water level, in feet below land-surface datum, 1944: Jan. 6, 21.46.

18.26.15.311 (*886, p. 415; 911, p. 174; 941, p. 212; 949, p. 291; 991, p. 241). Charles Martin. Water level, in feet below land-surface datum, 1944: Jan. 6, 21.12.

18.26.17.112 (*886, p. 415; 911, p. 174; 941, p. 212; 949, p. 291; *991, p. 241). W. B. McCrary. Water level, in feet below land-surface datum, 1944: Jan. 10, 38.5.

18.26.18.241 (*886, p. 415; 911, p. 174; 941, p. 212; *949, p. 291; 991, p. 242). W. B. McCrary. Water level, in feet below land-surface datum, 1944: Jan. 10, 43.06.

18.26.18.323 (*886, p. 415; 911, p. 174; 941, p. 212; 949, p. 291; 991, p. 242). W. B. McCrary. Water level, in feet below land-surface datum, 1944: Jan. 10, 46.35.

18.26.21.344 (*886, p. 415; 911, p. 171; 941, p. 209; *949, p. 291; 991, p. 242). Town of Dayton. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Feb. 9, 16 and 24, 36.38; Sept. 3, 40.87.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	36.49	36.52	36.93	37.65	38.47	39.15	.....	40.83	40.66	.....	.....
2	.....	36.50	36.48	.....	37.72	38.52	39.14	.....	40.86	40.64	.....	.....
3	.....	36.55	36.48	37.10	37.78	38.53	39.17	.....	40.87	40.62	.....	.....
4	.....	36.47	36.51	37.07	37.84	.....	39.20	.....	40.85	40.61	.....	.....
5	.....	36.49	36.43	37.10	37.82	.....	.....	.....	40.83	40.60	.....	.....
6	36.54	36.51	36.53	37.07	37.84	.....	.....	.....	40.82	40.60	.....	.....
7	36.55	36.44	36.59	37.11	.....	.....	.....	.....	40.80	.....	.....	.....
8	36.64	36.46	36.56	37.09	.....	.....	.....	.....	40.77	.....	.....	.....
9	36.58	36.38	36.54	37.09	.....	.....	39.32	.....	40.68	.....	.....	.....
10	36.57	36.48	36.46	37.13	.....	38.58	39.55	.....	40.68	.....	.....	.....
11	36.58	36.52	36.48	37.25	.....	38.57	39.36	.....	40.69	.....	.....	.....
12	36.68	36.44	36.53	37.21	.....	38.58	39.40	.....	40.65	.....	.....	39.77
13	36.67	36.41	36.52	37.21	38.07	38.62	39.46	.....	40.66	.....	.....	39.78
14	36.58	36.41	36.54	37.27	38.12	38.60	39.50	.....	40.67	.....	.....	39.74
15	36.56	36.41	36.59	37.30	38.10	38.62	39.51	.....	40.68	.....	.....	39.74
16	36.57	36.38	36.62	37.28	38.14	38.62	39.56	.....	40.73	.....	.....	39.70
17	36.61	36.43	36.56	37.34	38.18	38.63	39.58	.....	40.73	.....	.....	39.70
18	36.61	36.46	36.58	37.38	38.20	38.66	39.62	.....	40.75	40.39	.....	39.72
19	36.60	36.47	36.63	37.41	38.21	38.70	39.63	.....	40.76	40.38	.....	39.68
20	36.56	36.44	36.57	37.40	38.23	38.73	39.68	.....	40.77	40.37	.....	.....
21	36.57	36.39	36.65	37.45	38.25	38.76	39.74	40.70	40.79	40.37	.....	.....
22	36.58	36.46	36.74	37.44	38.27	38.82	39.75	40.72	40.81	40.36	39.95	.....
23	36.52	36.40	36.67	37.46	38.29	38.90	.....	40.76	40.81	40.35	39.91	.....
24	36.48	36.38	36.61	37.47	38.31	38.90	39.71	40.78	40.82	40.33	39.84	.....
25	36.51	36.40	36.66	37.51	.....	38.92	39.73	40.78	.....	40.31	39.88	.....
26	36.52	36.43	36.69	37.59	.....	38.97	39.74	40.80	.....	.....	39.91	.....
27	36.60	36.43	36.76	37.61	38.38	39.00	39.74	40.83	.....	.....	39.86	.....
28	36.53	36.49	36.80	37.60	38.41	39.08	39.74	40.81	.....	.....	39.86	.....
29	36.51	36.55	36.85	37.65	38.41	39.10	39.74	.....	40.66	.....	39.85	.....
30	36.53	.....	36.88	37.68	38.41	39.13	39.74	.....	40.66	.....	.....	.....
31	36.56	.....	36.89	.....	38.47	.....	39.77	.....	.....	.....	.....	.....

18.26.22.314 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 242). George Krauss. Water level, in feet below land-surface datum, 1944: Jan. 6, 9.77.

18.26.23.213 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 242). A. W. Boyce. Water level, in feet below land-surface datum, 1944: Jan. 6, 22.73.

18.26.24.131 (*991, p. 242). Angeline Mackey. Water level, in feet below land-surface datum, 1944: Jan. 6, 15.00.

18.26.24.223 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 242). Angeline Mackey. Measuring point beginning Sept. 15, 1944, top east edge of Geological Survey washer in east side of west wooden pipe clamp, 0.60 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 6, 4.65; May 17, 4.57; Sept. 15, 6.07; Nov. 22, 5.68.

18.26.28.132 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 242). Dayton School. Water level, in feet below land-surface datum, 1944: Jan. 6, 51.87.

18.26.33.111 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 243). Harvey Yates. Water level, in feet below land-surface datum, 1944: Jan. 6, 64.30.

19.26.12.323 (*886, p. 416; 911, p. 174; 941, p. 212; *949, p. 292; 991, p. 243). Forrest Lee. Water level, in feet below land-surface datum, 1944: Jan. 6, 21.10.

19.26.12.323a (*991, p. 243). Forrest Lee. Water level, in feet below land-surface datum, 1944: Jan. 6, 21.05.

19.26.12.333 (*949, p. 292; 991, p. 243). Ollie M. Banks.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	26.35	May 17	27.46	Sept. 15	29.55
Mar. 25	27.21	July 20	28.83	Nov. 23	28.68

19.26.13.211 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 292; 991, p. 243). R. L. House. Water level, in feet below land-surface datum, 1944: Jan. 6, 13.67.

19.26.13.344 (*949, p. 293; 991, p. 243). R. W. Rankin. Water levels, in feet below land-surface datum, 1944: Jan. 6, 8.24; May 17, 7.59; Sept. 15, dry at 9.27 feet; Nov. 23, dry at 9.25 feet.

19.26.14.431 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 243). Albert Lee. Measuring point beginning Jan. 6, 1944, center of $\frac{1}{2}$ -inch tap hole in top of discharge pipe east of pump. Subtract 1.80 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 6, 10.29.

19.26.27.233 (*845, p. 300; 886, p. 416; 911, p. 172; 941, p. 210; 949, p. 293; *991, p. 243). Lakewood School.

Water level, in feet below land-surface datum, 1944

Jan. 6	46.82	May 17	52.56	Nov. 23	47.15
Mar. 25	50.50	Sept. 15	52.26		

19.26.28.334 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 243). Frank Howard. Water levels, in feet below land-surface datum, 1944: Jan. 5, 59.11; May 17, 65.35.

19.26.28.441 (*886, p. 416; 911, p. 174; 941, p. 212; *949, p. 293; 991, p. 243). D. D. Sullivan. Water level, in feet below land-surface datum, 1944: Jan. 5, 62.63.

19.26.33.412 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 243). J. H. Everest. Water level, in feet below land-surface datum, 1944: Jan. 5, 43.68.

20.26.6.431 (*886, p. 416; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 243). J. G. Moutry & Sons. Water level, in feet below land-surface datum, 1944: Jan. 5, 44.32.

20.26.7.122 (*845, p. 300; 886, p. 417; 911, p. 172; 941, p. 210; 949, p. 293; *991, p. 243). P. S. Campbell.

Water level, in feet below land-surface datum, 1944

Jan. 5	a 45.25	May 17	a 64.23	Sept. 15	a 49.44
Mar. 25	47.83	July 20	51.44	Nov. 23	46.37

a Pumping.

20.26.7.421 (*886, p. 417; 911, p. 174; 941, p. 212; 949, p. 293; *991, p. 243). E. Manthei. Water level, in feet below land-surface datum, 1944: Jan. 5, 37.55.

20.26.8.112 (*886, p. 417; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 243). J. G. Moutry & Sons. Water level, in feet below land-surface datum, 1944: Jan. 5, 33.09.

20.26.17.411 (*886, p. 417; 911, p. 174; 941, p. 212; 949, p. 293; 991, p. 244). J. H. Angell. Water level, in feet below land-surface datum, 1944: Jan. 5, 47.04.

GRANT COUNTY

By C. R. Murray

The water-stage recorder installed on the Mracek well, near the town of Central, on April 24, 1943, was operated throughout 1944. A description of the well and the record of water-level measurements for 1943 have been published in Geological Survey Water-Supply Paper 991.

Fluctuations in water level

The water level in the Mracek well declined about 20 feet in 1944, falling from 233 to 253 feet below the land surface. From January to April 22 the rate of decline was uniform, averaging about 0.058 foot per day. At this time the depth to water was 239.4 feet. From April 22 to June 15, when the depth to water reached 244 feet, the rate of decline was again uniform but greater than in the preceding period, averaging 0.085 foot per day. During the next 2 months the rate of decline slackened progressively, averaging 0.068 foot per day, until on August 17 the depth to water was 248.1 feet. On each of the days, August 18, 19, and 20, more than an inch of precipitation was recorded by the Weather Bureau at Fort Bayard, a mile west of the well, and the water level rose until, on August 22, it was 247.16 feet. On August 24 a rapid decline, 0.054 foot per day, again started and continued until September 26, when the water level was 248.9 feet. A rise of a few hundredths of a foot occurred during the rest of September, apparently the result of precipitation around the 20th of the month, after which water levels declined rather uniformly, about 0.051 foot per day, for the remainder of the year, as rains were sufficient to cause only slight rises in water levels. The effect which rainfall has on water levels in this well does not depend solely on the quantity of precipitation received. Several heavy rains in July caused no sharp rise in water levels although there was a slackening in the rate of decline at that time. When heavy rains occurred in August, immediate rises occurred, and even minor rains had more effect than they had earlier in the year, indicating that the July rains had sufficiently saturated the soil so that additional rain could easily recharge the aquifer. It is also possible, but not probable, that rises in water level are dependent on stream flow taking place over outcropping strata of the aquifer (the Syrena formation of the Magdalena group). In such a case rains would have to be heavy enough

over the particular watershed to cause the stream to flow or no rise in water level would occur.

The decline in water levels is believed due to pumping or drainage of water from nearby mines, which became more active with the war-time demand for metals. On April 18, coincident with the abrupt acceleration of fall of water level noted above, the Copper Flat mine, about 1 mile north-northeast of the Mracek well, cross-cut an open fissure in limestone, which produced a maximum of 30 gallons of water a minute, and gradually diminished to about 10 gallons a minute. The direction is approximately that of the strike of faults, dikes, and other geologic structures.

Minor diurnal fluctuations in water level are largely concealed by friction within the recorder as the depth to water is large and the well is not truly vertical. However, earthquakes, even at great distances, frequently produce sharp oscillations in the water level. Serrate rises observed during November are believed to have been caused by recharge to the aquifer when circulation was lost in drilling diamond-drill prospect holes close to the well. There is little evidence that the water table has approached an equilibrium position under the present rate of withdrawals. Additional declines are anticipated in the future.

Water-level measurements

17.12.31.121 (*991, p. 245). Albert P. Mracek. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Jan. 1, 232.91; Dec. 31, 253.26.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	232.91	234.76	236.48	238.20	240.18	242.87
2	233.00	234.81	236.55	238.25	240.32	242.94
3	233.05	234.87	236.60	238.30	240.39	243.00
4	233.10	234.93	236.66	238.36	240.51	243.08
5	233.17	234.98	236.70	238.42	240.59	243.16
6	233.22	235.08	236.76	238.48	240.69	243.25
7	233.26	235.12	236.82	238.53	240.77	243.35
8	233.33	235.18	236.88	238.58	240.86	243.41
9	233.38	235.24	236.94	238.62	240.94	243.52
10	233.44	235.28	237.00	238.67	241.01	243.57
11	233.49	235.36	237.05	238.74	241.10	243.68
12	233.56	235.41	237.08	238.78	241.17	243.75
13	233.62	235.47	237.15	238.86	241.29	243.84
14	233.67	235.52	237.19	238.91	241.35	243.92
15	233.73	235.60	237.25	238.96	241.45	243.98
16	233.80	235.65	237.28	239.03	241.53	244.06
17	233.87	235.71	237.36	239.09	241.60	244.16
18	233.93	235.78	237.43	239.15	241.70	244.22
19	233.98	235.85	237.47	239.24	241.77	244.30
20	234.04	235.90	237.53	239.28	241.86	244.37
21	234.07	235.98	237.58	239.34	241.95	244.45
22	234.14	236.02	237.64	239.39	242.00	244.55

17.12.31.121. Albert P. Mracek--Continued.

Highest daily water level, in feet below land-surface datum, 1944

(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June
23	234.20	236.06	237.69	239.50	242.10	244.63
24	234.26	236.12	237.77	239.58	242.17	244.71
25	234.30	236.18	237.82	239.68	242.25	244.77
26	234.38	236.23	237.86	239.77	242.35	244.85
27	234.43	236.28	237.91	239.87	242.45	244.92
28	234.48	236.34	238.00	239.95	242.52	244.98
29	234.55	236.41	238.03	240.00	242.60	245.10
30	234.61	.....	238.08	240.11	242.69	245.18
31	234.67	.....	238.14	.....	242.76	.....

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	245.26	247.27	247.53	248.87	250.18	251.70
2	245.33	247.34	247.59	248.89	250.20	251.79
3	245.38	247.39	247.65	248.92	250.26	251.82
4	245.48	247.47	247.72	248.95	250.30	251.87
5	245.56	247.54	247.79	248.98	250.34	251.93
6	245.64	247.60	247.87	249.01	250.40	252.02
7	245.69	247.68	247.93	249.05	250.46	252.08
8	245.77	247.75	247.98	249.10	250.49	252.10
9	245.85	247.80	248.00	249.12	250.55	252.17
10	245.92	247.89	248.07	249.16	250.59	252.22
11	245.99	247.91	248.12	249.19	250.67	252.26
12	246.06	247.89	248.18	249.24	250.71	252.37
13	246.15	247.93	248.22	249.28	250.77	252.42
14	246.21	247.96	248.28	249.32	250.85	252.48
15	246.30	248.00	248.33	249.37	250.91	252.53
16	246.36	248.05	248.38	249.41	250.95	252.56
17	246.38	248.09	248.43	249.49	251.01	252.60
18	246.47	247.94	248.48	249.53	251.05	252.69
19	246.53	247.50	248.56	249.59	251.11	252.69
20	246.58	247.28	248.59	249.61	251.17	252.73
21	246.66	247.18	248.68	249.67	251.21	252.79
22	246.74	247.16	248.74	249.73	251.22	252.83
23	246.80	247.16	248.78	249.79	251.28	252.88
24	246.83	247.16	248.82	249.83	251.27	252.93
25	246.85	247.18	248.87	249.90	251.32	252.97
26	246.89	247.21	248.91	249.95	251.41	253.02
27	246.95	247.27	248.89	250.00	251.48	253.07
28	247.00	247.32	248.87	250.02	251.43	253.12
29	247.08	247.36	248.87	250.07	251.41	253.20
30	247.13	247.40	248.87	250.11	251.67	253.24
31	247.19	247.47	.....	250.16	.....	253.26

HIDALGO COUNTY (VIRDEN VALLEY)

By R. L. Cushman and T. P. Shelley

The Virden Valley is the New Mexico portion of the Duncan-Virden Valley which lies in Arizona and New Mexico. This area was studied as a unit and is discussed as a whole under Greenlee County in the Arizona section of this report. Figure 4 shows water-level fluctuations in typical wells in Greenlee County and pumpage for the entire area.

There were 9 water-level measurements made in 6 wells during 1944. Wells 232 and 201 are in pumped areas and show the decline in water levels

caused by pumping. Well 232 responded more quickly and in a greater degree to the recharge occurring from rains and increased river flow during September.

Water-level measurements

181 (*911, p. 75; 941, p. 213; 949, p. 213; *991, p. 246). P. Lunt. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 32, T. 18 S., R. 21 W. Water levels, in feet below land-surface datum, 1944: Mar. 13, 38.90; July 5, 41.15.

185 (*911, p. 175; 941, p. 213; 949, p. 213; *991, p. 246). J. Pierce. SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 32, T. 18 S., R. 21 W. Water level, in feet below land-surface datum, 1944: Mar. 13, 30.62.

201 (*911, p. 175; 941, p. 213; 949, p. 213; *991, p. 246). J. E. Payne. NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 19 S., R. 21 W. Water levels, in feet below land-surface datum, 1944: Mar. 13, 43.60; July 5, 45.36.

202 (*991, p. 246). Byron Echols. SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 2, T. 19 S., R. 21 W. Water level, in feet below land-surface datum, 1944: Mar. 13, 13.66.

215 (*911, p. 176; 941, p. 213; *949, p. 213; *991, p. 246). John B. Jones. SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 19 S., R. 21 W. Measurements discontinued after Mar. 10, 1942. Well cannot be entered for measurements.

217 (*911, p. 176; 941, p. 213; *949, p. 213; *991, p. 246). Nancy O. Pace. NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 19 S., R. 21 W. Water level, in feet below land-surface datum, 1944: Mar. 13, 10.92.

219 (*911, p. 177; 941, p. 213; 949, p. 213; *991, p. 246). Ruth Skaggs. NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 19 S., R. 21 W. Well destroyed; measurements discontinued after Dec. 27, 1943.

232 (*911, p. 177; 941, p. 214; 949, p. 213; *991, p. 246). Floyd Johns. NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 18, T. 19 S., R. 20 W. Water levels, in feet below land-surface datum, 1944: Mar. 13, 28.78; July 5, 30.48.

LEA COUNTY

By C. R. Murray

Investigation of ground-water conditions in the irrigated area in Lea County was continued in 1944 in cooperation with the State engineer of New Mexico. Periodic water-level measurements were made and data were obtained on the amount of ground water pumped and acreage irrigated. Reports on ground-water conditions in Lea County have been published in the 9th to 13th biennial reports of the State engineer and in Geological Survey Water-Supply Papers 817, 911, 941, 949, and 991.

Water levels were measured in 87 wells in January, 25 wells in March, and 26 wells in May, July, September, and November, making a total of 216 measurements during the year. The January measurements show the yearly change in the amount of ground water in storage and the bimonthly measurements give the seasonal fluctuations. Automatic water-stage recorders furnished a continuous record of water-level changes in 2 other wells.

Fluctuations in water level

The quantity of ground water pumped for irrigation in Lea County decreased in 1944 because of the above-normal precipitation. The Weather Bureau recorded the following yearly precipitation: Lovington, 19.04 inches, or 3.87 inches above normal; Hobbs, 19.57 inches, or 4.56 inches above normal; and Tatum, 12.50 inches. Fortunately, much of this precipitation occurred during the growing season, Lovington receiving 15.01 inches from May through September; Hobbs, 14.90 inches during the same period; and Tatum, 8.45 inches from April through September.

It is estimated that about 3,400 acres was irrigated with ground water in Lea County in 1944, about 3,500 acre-feet of water being used for this purpose. Estimates of irrigated acreages for the years 1941-43 were 2,600, 3,000, and 3,200 acres, respectively. The amount of water pumped during those years for irrigation was estimated at 1,550, 3,500, and 6,000 acre-feet. Besides the water used for irrigation, large quantities are pumped for stock, for municipal supplies and for use in industry. It is estimated that a total of 10,500 acre-feet of ground water was used in Lea County in 1944.

There was little change in water levels in Lea County in 1944. The high precipitation and reduced quantity of water pumped for irrigation maintained the water table at the high position which it has had since the abnormal precipitation of 1941. Yearly rises and declines, generally restricted to a few tenths of a foot, occurred irregularly throughout most of the area. However, most wells in T. 14 S. showed rises and those in T. 17 S. declines. The most pronounced fluctuations occurred in wells such as the Byers well, 16.36.4.L.12, near which considerable irrigating is done. After periods of rainfall, pumping would cease and water levels begin to recover rapidly. When pumping recommenced the water levels would fall sharply until the next rainfall. Such alternating rises and declines in water levels occurred throughout the summer. By the end of 1944 the quantity of ground water in storage differed little from that at the beginning of the year.

Water-level measurements

12.36.19.223 (*911, p. 179; 941, p. 218; 949, p. 296; 991, p. 248).
O. V. Fisher. Water level, in feet below land-surface datum, 1944:
Jan. 16, 23.47 (pumping recently).

12.36.24.434 (*941, p. 218; *949, p. 296; *991, p. 248). Jerry Clay. Water level, in feet below land-surface datum, 1944: Jan. 16, 6.14 (pumping).

12.36.25.222 (*911, p. 180; 941, p. 218; 949, p. 296; 991, p. 248). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	20.85	May 14	20.76	Sept. 22	20.78
Mar. 25	20.80	July 28	20.78	Nov. 28	20.72

12.36.27.212 (*911, p. 180; 941, p. 218; 949, p. 296; 991, p. 248). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	34.94	May 14	35.23	Sept. 22	35.41
Mar. 25	35.07	July 28	35.32	Nov. 28	35.42

12.36.29.110(*911, p. 181; 941, p. 218; 949, p. 297; 991, pp. 248-249). E. D. Holt. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Jan. 24-26, 27.69; Dec. 11-14, 19, 26.-28, 28.40.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.73	27.75	27.80	27.90	27.96	28.07	28.17	28.26	28.33	.....	28.39	
2	27.72	27.74	27.82	27.91	27.96	28.06	28.18	28.26	28.33	.....	28.39	
3	27.73	27.73	27.85	27.93	27.96	28.06	28.18	28.27	28.33	.....	28.36	
4	27.73	27.75	27.83	27.94	27.97	28.07	28.18	28.28	28.33	.....	28.37	
5	27.73	27.73	27.83	27.93	27.98	28.08	28.18	28.28	28.33	.....	28.38	
6	27.73	27.75	27.82	27.93	27.99	28.08	28.19	28.29	28.34	.....	28.38	
7	27.71	27.76	27.83	27.92	28.00	28.08	28.19	28.29	28.34	.....	28.38	
8	27.71	27.77	27.82	27.92	28.01	28.08	28.19	28.30	28.35	.....	28.38	
9	27.70	27.77	27.82	27.93	27.99	28.09	28.19	28.29	28.34	.....	28.38	
10	27.71	27.76	27.83	27.93	27.99	28.10	28.19	28.29	28.34	.....	28.39	
11	27.74	27.75	27.85	27.94	28.00	28.10	28.19	28.29	28.34	.....	28.40	
12	27.73	27.76	27.86	27.95	28.00	28.11	28.19	28.30	28.34	.....	28.40	
13	27.71	27.75	27.84	27.95	28.00	28.12	28.19	28.30	28.34	.....	28.40	
14	27.71	27.72	27.76	27.85	27.95	28.01	28.12	28.19	28.30	28.34	.....	28.40
15	27.71	27.71	27.76	27.86	27.94	28.01	28.13	28.19	28.30	28.34	.....	28.39
16	27.71	27.71	27.77	27.86	27.93	28.01	28.13	28.20	28.30	28.35	.....	28.38
17	27.73	27.72	27.75	27.86	27.93	28.02	28.13	28.20	28.31	28.35	.....	28.38
18	27.72	27.74	27.76	27.89	27.94	28.02	28.14	28.21	28.31	28.34	.....	28.38
19	27.73	27.75	27.77	27.88	27.94	28.03	28.14	28.21	28.31	28.34	.....	28.40
20	27.72	27.74	27.76	27.87	27.94	28.03	28.14	28.21	28.31	28.34	.....	28.39
21	27.71	27.73	27.77	27.88	27.94	28.03	28.14	28.22	28.31	28.34	.....	28.38
22	27.71	27.74	27.80	27.88	27.94	28.03	28.15	28.22	28.32	28.35	.....	28.39
23	27.70	27.73	27.79	27.90	27.94	28.03	28.15	28.22	28.33	28.35	.....	28.39
24	27.69	27.73	27.78	27.89	27.95	28.03	28.15	28.22	28.33	28.35	.....	28.39
25	27.69	27.73	27.78	27.89	27.95	28.03	28.15	28.23	28.33	28.35	.....	28.39
26	27.69	27.73	27.79	27.90	27.96	28.03	28.15	28.23	28.33	28.35	.....	28.40
27	27.71	27.73	27.80	27.92	27.97	28.03	28.16	28.24	28.32	28.36	.....	28.40
28	27.72	27.74	27.80	27.91	27.97	28.03	28.16	28.25	28.32	28.36	28.38	28.40
29	27.73	27.76	27.82	27.91	27.97	28.07	28.17	28.24	28.33	28.36	28.39	28.39
30	27.73	.....	27.82	27.91	27.96	28.07	28.17	28.24	28.33	.....	28.38	28.39
31	27.73	.....	27.80	.....	27.96	.....	28.17	28.26	.....	.....	28.38	28.39

12.37.20.331 (*941, p. 220; *949, p. 297; 991, p. 249). W. O. Dunlap, Jr. Water level, in feet below land-surface datum, 1944: Jan. 16, 13.73.

12.38.4.312 (*941, p. 220; 949, p. 297; 991, p. 249). G. C. Copeland. Water level, in feet below land-surface datum, 1944: Jan. 16, 39.21.

13.35.11.222 (*911, p. 181; 941, p. 220; 949, p. 297; 991, p. 249). Ashley G. Green. Measuring point beginning Jan. 17, 1944, bottom edge of south 5/8-inch hole in west side of basal flange of pump, 0.04 foot above base of pump and top of well curb and 1.14 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 17, 29.67.

13.35.19.211 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 249).
Clara K. Elkins. Water level, in feet below land-surface datum, 1944:
Jan. 17, 45.87.

13.36.6.221 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 249).
R. W. Duncan. Water level, in feet below land-surface datum, 1944:
Jan. 17, 33.83.

13.36.33.341 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 249).
Lewis Beaman. Water level, in feet below land-surface datum, 1944:
Jan. 16, 41.06.

13.36.35.323 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 249).
M. J. McClish. Water level, in feet below land-surface datum, 1944:
Jan. 17, 37.18.

13.37.3.131 (*911, p. 182; *941, p. 220; 949, p. 297; 991, p. 249).
Jim H. Simpson. Water level, in feet below land-surface datum, 1944:
Jan. 17, 38.34.

13.37.3.133 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 249).
Jim H. Simpson. Water level, in feet below land-surface datum, 1944:
Jan. 17, 34.69.

13.37.7.121 (*911, p. 182; 941, p. 220; 949, p. 297; 991, p. 250).
W. O. Barrow.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 17	31.65	May 16	31.57	Sept. 22	31.52
Mar. 25	31.62	July 28	31.56	Nov. 28	31.52

13.37.13.132 (*911, p. 183; 941, p. 220; 949, p. 298; 991, p. 250).
A. M. Brownfield.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	27.95	May 16	28.06	Sept. 22	28.16
Mar. 25	27.98	July 28	28.09	Nov. 28	28.17

13.37.28.411 (*941, p. 220; 949, p. 298; 991, p. 250). A. F. Hight
and Marvin E. Powell. Water level, in feet below land-surface datum,
1944: Jan. 17, 31.21.

13.38.6.341 (*911, p. 184; 941, p. 221; 949, p. 298; 991, p. 250).
Opal Fulton. Water level, in feet below land-surface datum, 1944:
Jan. 16, 43.38.

14.35.30.141 (*911, p. 184, incorrectly numbered 14.35.30.3; *941,
p. 221; 949, p. 298; 991, p. 250). W. A. Anderson. Water level, in feet
below land-surface datum, 1944: Jan. 17, 46.02.

14.35.33.433 (*911, p. 184; 941, p. 221; 949, p. 298; 991, p. 250).
W. A. Anderson.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 17	40.18	May 16	40.13	Sept. 20	40.12
Mar. 25	40.15	July 28	40.13	Nov. 27	40.10

14.36.2.410 (*911, p. 185; 941, p. 221; 949, p. 298; 991, p. 250).
Clarence M. King. Water level, in feet below land-surface datum, 1944:
Jan. 16, 39.43.

14.36.6.420 (*911, p. 185; 941, p. 221; 949, p. 298; 991, p. 250).
S. A. and W. B. Richardson. Water level, in feet below land-surface
datum, 1944: Jan. 16, 39.03.

14.36.9.111 (*911, p. 185; 941, p. 221; 949, p. 298; *991, p. 250).
A. C. Drake. Water level, in feet below land-surface datum, 1944: Jan. 16,
38.36.

14.36.9.210 (*911, p. 185; 941, p. 221; 949, p. 298; 991, p. 250).
Burford Rankins. Water level, in feet below land-surface datum, 1944:
Jan. 16, 40.62.

14.36.13.211 (*911, p. 185; 941, p. 221; 949, p. 298; 991, p. 250).
Mattie E. Chambers.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	35.93	May 16	35.87	Sept. 22	35.84
Mar. 25	35.88	July 28	35.86	Nov. 28	35.84

14.36.14.121 (*911, p. 186; 941, p. 221; 949, p. 298; 991, p. 250).
V. M. Chamber. Water level, in feet below land-surface datum, 1944: Jan. 16, 40.85.

14.37.3.113 (*911, p. 186; 941, p. 221; 949, p. 298; 991, p. 250).
Lois C. Hobbs. Water level, in feet below land-surface datum, 1944:
Jan. 17, 32.10.

14.37.14.112 (*911, p. 186; 941, p. 221; 949, p. 298; 991, p. 250).
R. W. Smith.

Water level, in feet below land-surface datum, 1944

Jan. 15	34.55	May 16	34.52	Sept. 22	34.56
Mar. 25	34.54	July 28	34.56	Nov. 28	34.54

14.37.16.421 (*911, p. 186; 941, p. 221; 949, p. 298; 991, p. 250).
School land. Water level, in feet below land-surface datum, 1944: Jan. 15, 29.39.

14.37.20.410 (*911, p. 186; 941, p. 221; 949, p. 298; 991, p. 250).
Doyle Hudgens. Water level, in feet below land-surface datum, 1944:
Jan. 15, 33.54.

14.37.27.130 (*911, p. 187; 941, p. 221; 949, p. 298; 991, p. 251).
J. R. Fort.

Water level, in feet below land-surface datum, 1944

Jan. 15	36.19	May 16	36.16	Sept. 22	36.19
Mar. 25	36.20	July 28	36.16	Nov. 28	36.19

14.38.27.240 (*911, p. 187; 941, p. 222; 949, p. 298; *991, p. 251).
Mal Morrison Gaines. Water level, in feet below land-surface datum, 1944: Jan. 15, 34.64 (pumping).

14.38.28.120 (*911, p. 187; 941, p. 222; 949, p. 298; 991, p. 251).
Ila M. Cox.

Water level, in feet below land-surface datum, 1944

Jan. 15	24.85	May 16	24.91	Sept. 22	25.25
Mar. 25	24.71	July 28	25.46	Nov. 28	24.94

15.35.35.112 (*941, p. 222; 949, p. 298; 991, p. 251). Will Gorrell.
Water level, in feet below land-surface datum, 1944: Jan. 16, 40.11.

15.36.8.131 (*911, p. 188; 941, p. 222; 949, p. 299; 991, p. 251).
Orren Beatty.

Water level, in feet below land-surface datum, 1944

Jan. 17	39.98	May 16	39.99	Sept. 20	40.02
Mar. 25	39.99	July 28	40.01	Nov. 27	40.02

15.36.14.311 (*941, p. 222; 949, p. 299; *991, p. 251). Ben Graham.
Water level, in feet below land-surface datum, 1944: Jan. 15, 42.51.

15.36.29.410 (*911, p. 189; 941, p. 222; 949, p. 299; 991, p. 251).
D. A. Hudgens. Water level, in feet below land-surface datum, 1944:
Jan. 15, 43.29.

15.36.29.441 (*941, p. 222; *949, p. 299; *991, p. 251). H. R. Fleming. Water level, in feet below land-surface datum, 1944: Jan. 15, 42.12.

15.37.10.113 (*911, p. 189; *941, p. 222; 991, p. 251). W. Arthur Simpson. No measurements made in 1944.

15.37.21.330 (*911, p. 189; 941, p. 222; *949, p. 299; 991, p. 251). Robert W. Dean.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 15	a 30.46	May 16	a 31.92	Sept. 22	29.28
Mar. 25	29.11	July 28	29.12	Nov. 28	a 30.31

a Pumping.

15.37.27.110 (*941, p. 222; 949, p. 299; 991, p. 251). C. L. Naul. Water level, in feet below land-surface datum, 1944: Jan. 15, 29.61.

15.38.22.200 (*911, p. 190; 941, p. 222; 949, p. 299; 991, p. 251). Mr. Motsenbocker. Water level, in feet below land-surface datum, 1944: Jan. 15, 30.24.

16.36.1.400 (*911, p. 190; 941, p. 222; 949, p. 299; 991, p. 251). Lorene Basley. Water level, in feet below land-surface datum, 1944: Jan. 17, 41.68.

16.36.4.lot 12 (*911, p. 190; 941, p. 222; 949, p. 299; 991, p. 252). E. H. Byers. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Aug. 24-25, 43.79; Apr. 20-22, 24, 45.69.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	44.16	44.01	43.90	43.82	43.80	.....	44.95	45.02	45.34	45.17	44.63	44.92
2	44.16	44.00	43.89	43.83	43.80	.....	44.91	44.98	45.30	45.15	44.63	44.89
3	44.16	44.00	43.89	43.83	43.81	.....	44.89	44.96	45.28	45.10	44.63	44.88
4	44.15	43.99	43.89	43.82	43.81	43.85	44.87	44.93	45.24	45.10	44.63	44.87
5	44.15	43.98	43.89	43.82	43.81	43.85	44.84	44.90	45.21	45.07	44.70	44.84
6	44.14	43.98	43.89	43.81	43.80	43.86	44.82	44.89	45.19	45.03	44.75	44.82
7	44.14	43.97	43.90	43.81	43.79	43.84	44.82	44.86	45.15	45.00	44.81	44.80
8	44.13	43.97	43.89	43.81	43.80	43.85	44.96	44.85	45.12	44.97	45.02	44.77
9	44.13	43.96	43.89	43.80	43.80	43.86	45.14	44.83	45.11	44.94	45.09	44.76
10	44.12	43.97	43.88	43.81	43.80	43.86	45.16	44.81	45.07	44.92	45.09	44.74
11	44.12	43.97	43.88	43.82	43.80	43.87	45.19	44.82	45.05	44.91	45.08	44.72
12	44.12	43.96	43.88	43.81	43.80	43.87	45.25	44.96	45.04	44.89	45.20	44.71
13	44.11	43.95	43.88	43.80	43.80	43.88	45.25	45.14	45.02	44.86	45.23	44.70
14	44.09	43.95	43.88	43.80	43.80	43.89	45.22	45.18	45.01	44.85	45.29	44.68
15	44.08	43.95	43.88	43.81	43.80	43.95	45.16	45.30	44.97	44.84	45.41	44.67
16	44.09	43.94	43.87	43.80	43.80	44.06	45.12	45.44	44.94	44.83	45.52	44.65
17	44.08	43.94	43.87	43.80	43.80	44.23	45.11	45.54	44.92	44.81	45.53	44.64
18	44.08	43.94	43.87	43.81	43.80	44.41	45.22	45.61	44.91	44.80	45.48	44.63
19	44.07	43.94	43.87	43.80	43.80	44.48	45.31	45.61	44.90	44.79	45.44	44.61
20	44.06	43.93	43.86	43.79	43.80	44.61	45.37	45.56	44.87	44.77	45.38	44.60
21	44.05	43.92	43.86	43.79	43.80	44.77	45.45	45.51	44.86	44.76	45.32	44.59
22	44.05	43.93	43.86	43.79	43.80	44.88	45.46	45.50	44.86	44.74	45.27	44.57
23	44.04	43.92	43.86	43.80	43.80	45.01	45.41	45.62	44.95	44.73	45.21	44.56
24	44.03	43.91	43.85	43.79	43.80	45.13	45.36	45.69	45.10	44.73	45.18	44.55
25	44.03	43.91	43.84	43.80	43.80	45.18	45.31	45.69	45.13	44.72	45.16	44.54
26	44.03	43.91	43.84	43.81	43.82	45.17	45.25	45.61	45.22	44.71	45.12	44.53
27	44.04	43.91	43.84	43.80	43.82	45.14	45.19	45.59	45.32	44.69	45.05	44.53
28	44.03	43.91	43.84	43.79	43.82	45.10	45.16	45.52	45.30	44.67	45.03	44.52
29	44.02	43.91	43.83	43.80	.....	45.05	45.11	45.49	45.26	44.66	44.98	44.51
30	44.02	.....	43.83	43.80	.....	45.01	45.09	45.44	45.22	44.65	44.95	44.50
31	44.02	.....	43.82	.....	.....	.....	45.05	45.38	.....	44.64	.....	44.49

16.36.5.101 10 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). Mrs. Mary A. Coxey. Measuring point beginning Jan. 16, 1944, lower edge of mouth of discharge pipe. Subtract 4.35 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 16, 45.87.

16.36.5.101 14 (*911, p. 192; *941, p. 223; 949, p. 300; 991, p. 252). W. B. Phillips. Water level, in feet below land-surface datum, 1944: Jan. 16, 46.88.

16.36.5.321 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). J. T. Gwinn. Water level, in feet below land-surface datum, 1944: Jan. 16, 46.52.

16.36.5.411 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). Mrs. Emma J. Robinson. Water level, in feet below land-surface datum, 1944: Jan. 16, 47.32.

16.36.8.424 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). E. B. Yarbrow. Water level, in feet below land-surface datum, 1944: Jan. 16, 50.76.

16.36.10.233 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). J. E. Simmons. Water level, in feet below land-surface datum, 1944: Jan. 17, 51.01.

16.36.15.240 (*911, p. 192; *941, p. 223; 949, p. 300; 991, p. 252). J. C. Griffin. Water level, in feet below land-surface datum, 1944: Jan. 17, 47.07.

16.36.27.133 (*911, p. 192; 941, p. 223; 949, p. 300; 991, p. 252). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 17	49.47	May 15	49.44	Sept. 21	49.47
Mar. 24	49.46	July 26	49.44	Nov. 28	49.45

16.37.19.200 (*911, p. 193; *941, p. 224; 949, p. 300; 991, p. 253). H. Taylor Montleth. Water level, in feet below land-surface datum, 1944: Jan. 17, 28.93.

16.37.33.110 (*911, p. 193; 941, p. 224; 949, p. 300; 991, p. 253). Elbert Shipp. Water level, in feet below land-surface datum, 1944: Jan. 17, 27.97.

16.38.25.144 (*941, p. 224; 949, p. 300; 991, p. 253). J. S. and Rose Eaves. Water level, in feet below land-surface datum, 1944: Jan. 15, 32.12.

16.38.28.444 (*911, p. 193; 941, p. 224; *949, p. 300; 991, p. 253). J. L. Williams.

Water level, in feet below land-surface datum, 1944

Jan. 15	a 31.15	May 16	b 30.91	Sept. 21	31.83
Mar. 25	a 31.73	July 27	a 30.88	Nov. 27	a 31.73

a Pumping.

b Pumping recently.

16.38.35.110 (*941, p. 224; 949, p. 300; 991, p. 253). Mrs. P. S. Bennett. Water level, in feet below land-surface datum, 1944: Jan. 15, 34.02.

17.34.35.130 (*941, p. 224; 949, p. 300; 991, p. 253). Phillips Petroleum Co., Mabel lease.

Water level, in feet below land-surface datum, 1944

Jan. 16	90.74	May 15	90.66	Sept. 21	90.72
Mar. 24	90.64	July 26	90.63	Nov. 28	90.71

17.35.35.120 (*941, p. 224; 949, p. 300; 991, p. 253). Phillips Petroleum Co. lease.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	38.85	May 15	38.85	Sept. 21	38.92
Mar. 24	38.83	July 26	38.87	Nov. 28	38.95

17.36.3.333 (*941, p. 224; 949, p. 300; 991, p. 253). State land. Reference point established July 26, 1944, top of Geological Survey washer in north side of fence post 67 feet south of well (first post east of corner post), 1.52 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 17	42.02	May 15	42.00	Sept. 21	42.05
Mar. 24	42.00	July 26	42.02	Nov. 28	42.07

17.37.13.310 (*911, p. 193; 941, p. 225; 949, p. 300; 991, p. 253). John Catchings. Water level, in feet below land-surface datum, 1944: Jan. 17, 26.05.

17.37.26.330 (*911, p. 194; 941, p. 225; 949, p. 300; 991, p. 253). Mrs. Dave B. Wilhoit. Water level, in feet below land-surface datum, 1944: Jan. 17, 26.69.

17.37.34.441 (*941, p. 225; 949, p. 300; 991, p. 253). B. J. Caudill. Water level, in feet below land-surface datum, 1944: Jan. 17, 25.00.

17.37.36.141 (*911, p. 194; 949, p. 300; 991, p. 253). M. J. Waltman. State school land. Water level, in feet below land-surface datum, 1944: Jan. 16, 26.45.

17.38.30.113 (*911, p. 194; 941, p. 225; 949, p. 300; 991, p. 253). W. H. Martin. Water level, in feet below land-surface datum, 1944: Jan. 17, 24.90.

17.38.30.312 (*911, p. 194; *941, p. 225; 949, p. 301; 991, p. 253). Colan M. Hawkins. Measuring point beginning July 27, 1944, west edge of 2-inch pipe set in west side of concrete weir box, 0.51 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 17	27.43	May 15	a 27.59	Sept. 21	27.79
Mar. 25	27.54	July 27	27.72	Nov. 27	a 27.92

a Nearby well pumping.

17.38.34.113 (*991, p. 254). W. E. Busby. Water level, in feet below land-surface datum, 1944: Jan. 15, 24.78.

18.36.27.111 (*911, p. 195; 941, p. 225; 949, p. 301; 991, p. 254). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	38.70	May 15	38.87	Sept. 21	39.11
Mar. 24	38.70	July 26	38.98	Nov. 27	39.13

18.38.2.131 (*911, p. 195; 941, p. 225; 949, p. 301; 991, p. 254). Sam Dalmont. Water level, in feet below land-surface datum, 1944: Jan. 15, 27.56.

18.38.4.232 (*911, p. 195; 941, p. 225; 949, p. 301; 991, p. 254). J. R. Isaacs. Measuring point beginning May 15, 1944, top edge of Geological Survey washer nailed in south top edge of 4 $\frac{1}{2}$ - by 5 $\frac{1}{2}$ -inch east-west timber across top of well, 1.5 feet north of center of pump drive shaft, 1.35 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 15	22.49	May 15	22.88	Sept. 21	22.96
Mar. 25	23.31	July 27	22.91	Nov. 27	23.02

18.38.15.241 (*911, p. 196; *941, p. 225; 949, p. 301; *991, p. 254).
W. L. Greebon.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 15	27.20	July 27	27.52	Nov. 27	27.50
May 15	27.29	Sept. 21	27.56		

18.38.22.321 (*911, p. 196; *941, p. 226; 949, p. 301; 991, p. 254).
E. C. Browning. Water level, in feet below land-surface datum, 1944:
Jan. 15, 35.15.

18.38.22.412 (*911, p. 196; 941, p. 226; 949, p. 301; *991, p. 254).
M. C. Younger. Water level, in feet below land-surface datum, 1944:
Jan. 15, 37.73.

18.38.23.131 (*991, p. 254). Charles Mills. Measuring point beginning Jan. 15, 1944, bottom edge of rectangular hole in south side of pump shell, 0.83 foot above top of casing and land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 15, 40.62.

18.38.26.343 (*911, p. 196; 941, p. 226; *949, p. 301; *991, p. 254).
J. F. Mattox. Water level, in feet below land-surface datum, 1944:
Jan. 15, 41.40.

18.38.30.200 (*911, p. 196; 941, p. 226; 949, p. 302; 991, p. 254).
Mrs. Sadie Davis.

Water level, in feet below land-surface datum, 1944

Jan. 15	23.83	May 15	23.83	Sept. 21	23.79
Mar. 24	23.79	July 25	23.82	Nov. 27	23.69

19.35.13.211 (*911, p. 197; 941, p. 226; 949, p. 302; 991, p. 254).
Clara Fowler.

Water level, in feet below land-surface datum, 1944

Jan. 16	21.72	May 15	21.96	Sept. 21	22.03
Mar. 24	21.85	July 25	22.02	Nov. 27	21.94

19.35.24.222 (*911, p. 197; 941, p. 226; 949, p. 302; 991, p. 254).
F. K. Turner. Water level, in feet below land-surface datum, 1944:
Jan. 16, 19.26.

19.36.19.113 (*911, p. 197; 941, p. 227; 949, p. 302; 991, p. 254).
Louis S. Evans Estate. Water level, in feet below land-surface datum,
1944: Jan. 16, 16.48.

19.36.19.411 (*991, p. 255). Clarence R. Jordan. Water level, in
feet below land-surface datum, 1944: Jan. 16, 16.57.

19.36.32.111 (*911, p. 198; 941, p. 227; 949, p. 302; 991, p. 255).
S. P. Jordan. Water level, in feet below land-surface datum, 1944:
Jan. 16, 16.64.

19.36.32.321 (*991, p. 255). E. T. Childers. Water level, in feet
below land-surface datum, 1944: Jan. 16, 26.49.

19.36.32.323 (*991, p. 255). E. T. Childers. Water level, in feet
below land-surface datum, 1944: Jan. 16, 25.77.

19.37.32.241 (*911, p. 198, published incorrectly as 19.37.32.131;
941, p. 227; *949, p. 302, published incorrectly as 19.37.32.141; *991,
p. 255). Mrs. E. A. Anderson. Measuring point beginning Sept. 21, 1944,
top edge of Geological Survey washer nailed in west edge of upper surface
of 2- by 10-inch board across center of well, 0.68 foot below land-surface
datum.

Water level, in feet below land-surface datum, 1944

Jan. 16	12.11	May 15	12.09	Sept. 21	12.02
Mar. 24	12.53	July 25	12.00	Nov. 27	12.16

19.38.2.122 (*941, p. 227; 949, p. 302; 991, p. 255). A. C. Cheser.
Water level, in feet below land-surface datum, 1944: Jan. 15, 46.05.

19.38.2.242 (*941, p. 227; 949, p. 302; 991, p. 255). Mr. Dunn.
Water level, in feet below land-surface datum, 1944: Jan. 15, 45.48.

19.38.2.424 (*941, p. 227; 949, p. 302; 991, p. 255). A. C. Cheser.
Water level, in feet below land-surface datum, 1944: Jan. 15, 44.40.

20.35.1.222 (*911, p. 198; 941, p. 227; 949, p. 302; 991, p. 255).
J. L. Wood.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	19.70	May 15	19.80	Sept. 21	19.63
Mar. 24	19.77	July 25	a 19.93	Nov. 27	a 19.86

a Nearby well pumping.

20.37.9.110 (*911, p. 199; *941, p. 227; 949, p. 302; 991, p. 255).
W. H. Laughlin.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	28.24	May 15	27.89	Sept. 21	28.99
Mar. 24	27.93	July 25	28.81	Nov. 27	28.69

20.37.9.110a (*941, p. 227; 949, p. 302; 991, p. 255). W. H. Laughlin.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 16	27.46	May 15	27.15	Sept. 21	28.23
Mar. 24	27.17	July 25	28.03	Nov. 27	28.45

LUNA COUNTY (MIMBRES VALLEY)

By C. R. Murray

Additional study of the ground-water resources of the Mimbres Valley was made in 1944 in cooperation with the State engineer of New Mexico.

A small amount of test-well drilling was done and the program of water-level measurements continued.

In 1910 N. H. Darton began an investigation of ground-water conditions in Luna County. Information obtained during this survey has been published in Geological Survey Water-Supply Paper 345c and Bulletin 618. Since 1927, studies have been carried on under the supervision of A. G. Fiedler, W. N. White, and C. V. Theis, the results of which have been published in the 8th to 13th biennial reports of the State engineer and in Geological Survey Water-Supply Papers 637, 817, 845, 886, 911, 941, 949, and 991.

During 1944 test drilling in the Miesse district, east of Deming and the Little Florida Mountains, disclosed the presence of additional aquifers in the alluvium below those penetrated by the present irrigation wells, which are about 135 feet deep. Additional drilling will be required to determine the lateral extent of the aquifers and the configuration of the bedrock, which was struck at 350-400 feet in two test wells.

Water-level measurements were made in 124 wells in January to determine the yearly change in the amount of ground-water storage in the Mimbres Valley. (See fig. 12.) Water levels were also measured in about 65 of the observation wells in April, June, September, and November to determine the seasonal fluctuations of the water table. Four automatic water-stage recorders were operated in the valley to give a continuous record of water-level fluctuations. In all, 365 measurements of water level were made during the year.

Fluctuations in water level

The effect of precipitation on water levels in an irrigation district is twofold: it supplies the water requirements of growing crops, thereby decreasing the amount of water pumped by wells, and it penetrates underground, recharging the aquifers. The United States Weather Bureau recorded 13.29 inches of precipitation at Deming in 1944, which is 4.29 inches above the normal yearly precipitation. The precipitation for the years 1940-1943 was 5.73, 14.89, 10.24, and 7.80 inches, respectively. Of the 1944 precipitation, 10.41 inches fell from June through September and caused flash flows in the Mimbres River, which were diverted for irrigation and which doubtless also yielded recharge to the ground water.

It is estimated that nearly 15,000 acres in the Deming area was irrigated with ground water in 1944. Estimates for the years 1940-43 were 11,730, 12,170, 13,000, and 13,750 acres, respectively, indicating a rapid increase in land use. It is estimated that about 33,000 acre-feet of ground water was pumped in 1944 for domestic, agricultural, and industrial use, which is to be compared with figures of 25,500, 21,000, 24,500, and 29,000 acre-feet for the years 1940-43.

Figure 12 shows the changes in water level in the Mimbres Valley from January 1944 to January 1945. Declines of a fraction of a foot took place throughout most of the irrigated area though northeast of Deming and in a few isolated areas, each comprising a few square miles, rises occurred. Most of the rises are along the Mimbres River and resulted from the heavy precipitation and accompanying flood flows. The rise in the northeast corner of T. 24 S., R. 10 W., coincides with the area of greatest decline in 1943. A new well reaching the deeper aquifers was drilled in the center of this area early in 1944, and since the deeper water has a higher

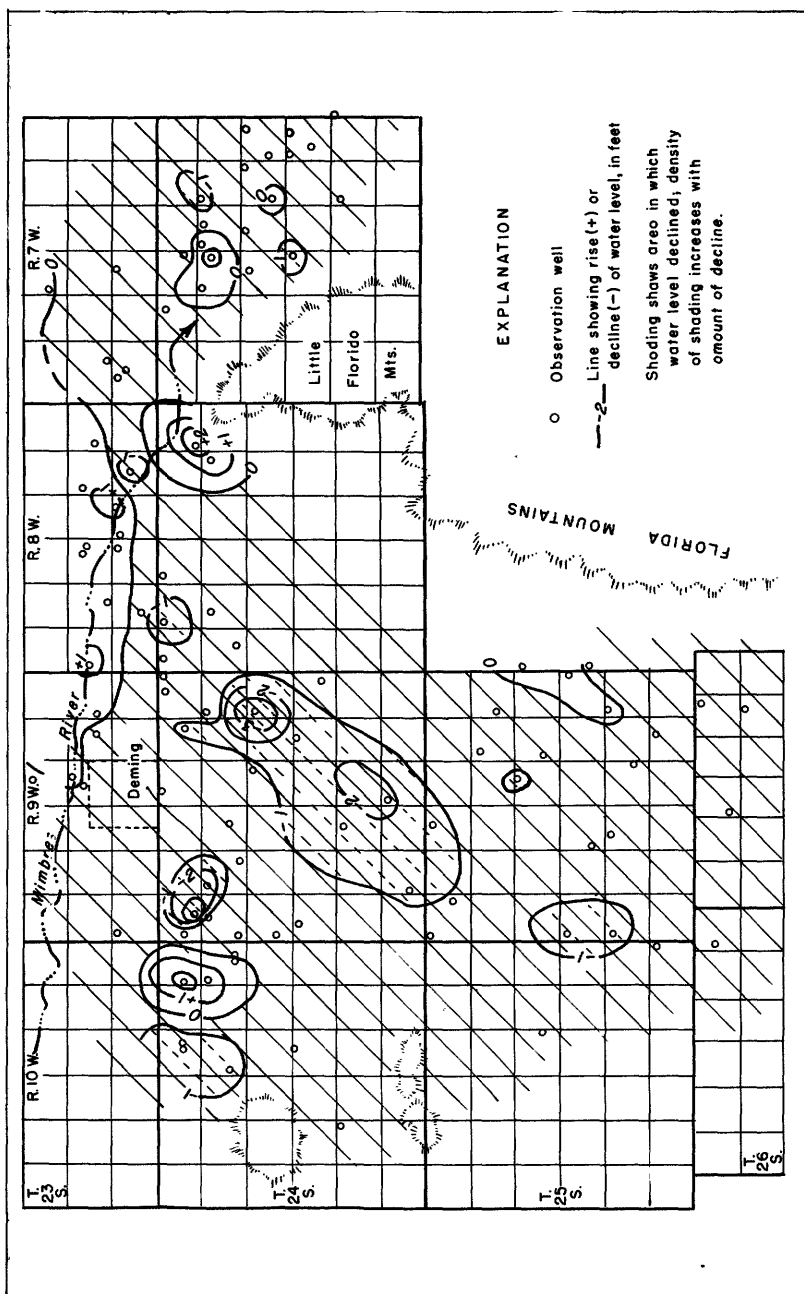


Figure 12.—Map of part of Mimbres Valley, Luna County, N. Mex., showing change in water level from January 1944 to January 1945.

head, it is probable that this well has partially leveled off the cone of depression in the water table surrounding it. Just to the east, in the northwest corner of T. 24 S., R. 9 W., a decline in excess of 3 feet occurred. This is believed to have been caused by heavy pumping in an area where the water table has been abnormally high in the past few years as a result of the initial high heads in deep wells drilled in 1941 and 1942, which since have fallen quite rapidly. Another area showing a rise in water level is the east side of T. 25 S., R. 9 W. It seems probable that water levels were higher here than a year previously because rains caused irrigation to stop earlier than usual and consequently there was more time for recovery to take place before measurements were made in January. Also, being on the edge of the irrigated area, the seasonal drawdown was less here than nearer its center and less recovery was required to produce a rise. Local recharge from the Florida Mountains to the east might also be a contributing factor in both this area and the one in the northeast corner of T. 24 S., R. 8 W., where a rise in excess of 2 feet occurred. The latter area is traversed by a short north-flowing tributary of the Mimbres River, that carries drainage from the Little Floridas and probably contributes local recharge. The largest yearly rise recorded, 8.23 feet, was in well 21.11.35.310, about 17 miles northwest of Deming and near the Mimbres River in the Spalding area. However, other wells in this locality showed only relatively small rises, and those farther from the river showed declines.

There were two principal areas where declines of water level in excess of 1 foot occurred in 1944. One of these was south and the other west of Deming. East of Deming, where several areas showed declines in excess of 1 foot in 1943, only a few wells showed declines in excess of 1 foot during 1944. Areas where the decline exceeded 1 foot totaled only about 23.5 square miles as compared with about 100 square miles in 1943. Areas showing declines in excess of 2 feet totaled only about 3.5 square miles in comparison with 10 square miles in 1943; declines of this magnitude were restricted to the areas west and south of Deming. Thus, although significant improvement was shown in the position of the water table along the river in 1944, appreciable declines occurred in areas remote from the river.

21.10.6.112 (*886, p. 427; *911, p. 204; 941, p. 231; 949, p. 305; *991, p. 258). Tom Tigner.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	9.05	June 10	9.70	Nov. 23	7.95
Apr. 12	9.70	Sept. 12	8.52		

21.11.13.411 (*886, p. 427; 911, p. 205; *941, p. 231; 949, p. 305; 991, p. 258). R. A. Gunter. Reference point beginning Apr. 12, 1944, top of circular steel rim forming curb of well on east side, 0.23 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	39.60	June 10	41.67	Nov. 23	40.93
Apr. 12	41.02	Sept. 12	42.08		

21.11.35.310 (*886, p. 427; 911, p. 205; 941, p. 231; 949, p. 305; 991, p. 259). State of New Mexico; Tigner lease.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	30.43	June 10	31.94	Nov. 23	24.20
Apr. 12	31.41	Sept. 12	24.18		

22.10.18.121 (*886, p. 428; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	73.50	June 10	74.29	Nov. 23	74.02
Apr. 12	74.00	Sept. 12	74.55		

22.10.20.210 (*911, p. 205; 941, p. 232; 991, p. 259). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 9, 91.92.

22.11.2.210 (*886, p. 428; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	31.15	June 10	32.43	Nov. 23	29.20
Apr. 12	31.94	Sept. 12	29.96		

22.11.13.122 (*886, p. 429; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	65.47	June 10	66.34	Nov. 23	65.90
Apr. 12	66.00	Sept. 12	66.32		

22.11.13.221 (*886, p. 429; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	72.34	June 10	73.14	Nov. 23	72.74
Apr. 12	72.83	Sept. 12	73.20		

22.11.14.222 (*886, p. 430; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	57.79	June 10	58.78	Nov. 23	58.05
Apr. 12	58.41	Sept. 12	58.27		

22.11.23.222 (*886, p. 430; 911, p. 205; 941, p. 232; 949, p. 306; 991, p. 259). State of New Mexico.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 9	51.96	June 10	52.87	Nov. 23	52.41
Apr. 12	52.54	Sept. 12	52.66		

23.7.17.242 (*941, p. 232; 949, p. 306; 991, p. 259). Jack Smyer. Water levels, in feet below land-surface datum, 1944: Apr. 15, 95.90, (pumping); June 10, 93.84.

23.7.21.311. Abandoned dug and drilled domestic and stock well, formerly equipped with windmill. Measuring point, top of Geological Survey washer on south edge of 4- by 8-inch timber, north of pump column at a point 3 inches west of pump column, 0.50 foot above land-surface datum. Reference points: (1) Top of T-shaped concrete block 2 feet northwest of well, at center of trough depression, 0.47 foot above land-surface datum; (2) top of east bolt in north end of concrete engine base, 30 feet northwest of well, 1.58 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Apr. 15, 69.76; June 10, 69.87; Sept. 14, 69.90; Nov. 27, 69.42.

23.7.30.16 (*886, p. 431; 911, p. 206; 941, p. 232; 949, p. 306; 991, p. 259): H. T. Foster.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	26.56	June 12	27.81	Nov. 23	26.86
Apr. 15	26.96	Sept. 14	28.54		

23.7.30.433 (*911, p. 206; 941, p. 232; *949, p. 306; 991, p. 259). John Kelly. Water level, in feet below land-surface datum, 1944: Jan. 12, 63.11.

23.7.31.111 (*911, p. 206; 941, p. 232; 949, p. 306; 991, p. 259, published incorrectly in previous reports as 23.7.31.120). William Haas. Reference point, established Apr. 15, 1944, top of concrete well curb, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 47.56.

23.7.31.132 (*911, p. 206; 941, p. 232; *949, p. 306; 991, p. 259; published incorrectly in previous reports as 23.7.31.140). William Haas. Water level, in feet below land-surface datum, 1944: Jan. 12, 48.62.

23.7.33.211 (*911, p. 206; 941, p. 232; 949, p. 306; 991, p. 259). Lewis and R. S. Smyer. Water level, in feet below land-surface datum, 1944: Jan. 12, 64.05 (pumping).

23.8.3.322 (*941, p. 233; 949, p. 306; 991, p. 259). Reference points, established Apr. 16, 1944: (1) Top of concrete slab, at west side of wooden peg in concrete, 2 feet north of well, 0.34 foot below land-surface datum; (2) top of bolt in northwest foundation pier, 35 feet south-southeast of well, 1.51 feet below land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 9	131.67	June 10	131.70	Nov. 21	131.88
Apr. 16	131.70	Sept. 15	131.83		

23.8.13.411 (*886, p. 431; 911, p. 206; 941, p. 233; 949, p. 306; 991, p. 259). E. P. Peeples. Water levels, in feet below land-surface datum, 1944: Apr. 15, 39.31; June 10, 38.28; Nov. 25, 39.05.

23.8.25.311 (*911, p. 206; 941, p. 233; 949, p. 306; 991, p. 259). Ed Remondini. Water level, in feet below land-surface datum, 1944: Jan. 12, 22.40.

23.8.26.131 (*886, p. 431; 911, p. 206; 941, p. 233; 949, p. 306; 991, p. 259). George Snyder. Water levels, in feet below land-surface datum, 1944: Jan. 12, 36.38; Apr. 15, 42.49 (nearby well pumping recently); Nov. 23, 36.29.

23.8.28.231 (*991, p. 259). C. R. Lewis, Jr. Reference point, established Apr. 15, 1944, top of 2- by 2-inch stake nailed to power pole 12 feet northeast of well, 0.49 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 47.28.

23.8.28.241 (*911, p. 206; 941, p. 233; incorrectly published in previous reports as 23.8.28.222; *949, p. 306; 991, p. 260). C. R. Lewis, Jr. Reference point, beginning Apr. 15, 1944, top of concrete weir box, 9 feet east of well, on north side at a spot painted black, 0.70 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 46.36.

23.8.29.433 (*886, p. 432; 911, p. 206; 941, p. 233; *949, p. 306; 991, p. 260). E. Krenek. Formerly owned by B. N. Ruebush. Reference point, beginning Apr. 15, 1944, top of bolt in southwest corner of concrete engine base, 30 feet south of well, 0.20 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 48.91.

23.8.30.133 (*886, p. 432; 911, p. 206; *941, p. 233; 949, p. 306; 991, p. 260). Lee Wilkerson. Water level, in feet below land-surface datum, 1944: Jan. 9, 48.37.

23.8.32.323 (*886, p. 432; 911, p. 207; 941, p. 233; 949, p. 307; 991, p. 260). Jess T. Gosnell.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	42.98	June 12	43.27	Nov. 21	44.10
Apr. 14	42.93	Sept. 14	44.09		

23.8.33.221 (*911, p. 207; 941, p. 233; 949, p. 307; 991, p. 260). George Dowdle. Formerly owned by A. J. Inderrieden. Water level, in feet below land-surface datum, 1944: Jan. 12, 39.94.

23.8.34.111 (*911, p. 207; 941, p. 233; 949, p. 307; *991, p. 260). George Dowdle. Formerly owned by A. J. Inderrieden. Water level, in feet below land-surface datum, 1944: Jan. 12, 37.79.

23.8.34.211 (*886, p. 432; 911, p. 207; 941, p. 233; 949, p. 307; *991, p. 260). H. T. Foster. Water levels, in feet below land-surface datum, 1944: Jan. 12, 37.20; Apr. 15, 37.03; Nov. 23, 36.46.

23.8.35.211b (*941, p. 233; 949, p. 307; 991, p. 260). Joe Remondini. Measurements discontinued.

23.8.35.233. Joe Remondini. Drilled irrigation well, diameter 10 inches, depth 390 feet. Pump to be installed. Measuring point, top of casing, 2.10 feet above land-surface datum. Reference points beginning Apr. 15, 1944: (1) Top of concrete sluice box 10 feet west of well, at 2- by 2-inch square cut in east side of box, 0.26 foot above land-surface datum; (2) top of 2- by 2-inch stake nailed to north side of telephone pole, 20 feet southeast of well, 3.70 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 29.14.

23.9.7.240 (*911, p. 207; 941, p. 233; 949, p. 307; 991, p. 260). R. M. Wilson ranch. Reference point beginning Apr. 12, 1944, top of concrete platform around well, east side, 0.45 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 9, 98.50.

23.9.22.213 (*886, p. 433; 911, p. 207; 941, p. 234; 949, p. 307; 991, p. 260). Roy Perkins.

Water level, in feet below land-surface datum, 1944

Jan. 9	63.47	June 10	63.70	Nov. 23	63.52
Apr. 12	63.49	Sept. 12	64.03		

23.9.25.311 (*886, p. 434; 911, p. 207; 941, p. 234; 949, p. 307; 991, p. 260). Albert Ernst. Water levels, in feet below land-surface datum, 1944: Jan. 8, 57.47; Apr. 12, 57.46; Sept. 13, 58.10; Nov. 22, 57.18.

23.9.26.410 (*886, p. 434; 911, p. 207; 941, p. 234; *949, p. 307; 991, p. 260). Hubert Ruebush. Water level, in feet below land-surface datum, 1944: Jan. 9, 56.58.

23.9.27.142 (*886, p. 435; *911, p. 207; *941, p. 234; 949, p. 307; 991, p. 260). H. J. Thomas. Water levels, in feet below land-surface datum, 1944: Jan. 9, 61.75; Apr. 12, 61.88; Sept. 12, 62.38; Nov. 24, 62.45.

23.9.27.221 (*886, p. 435; 911, p. 208; 941, p. 234; 949, p. 307; 991, p. 260). R. E. Hardaway. Old reference point destroyed; new reference point beginning Apr. 12, 1944, top of north edge of tin can set in tub-shaped concrete pier for northwest leg of water tank, 10 feet south of well, 0.16 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 9	58.78	June 11	58.97	Nov. 24	58.44
Apr. 12	58.88	Sept. 13	57.65		

23.9.31.110 (*911, p. 208; 941, p. 234; 949, p. 307; 991, p. 260). Schauer & Lindauer. Water level, in feet below land-surface datum, 1944: Jan. 9, 79.06.

23.10.15 (*886, p. 436; 911, p. 208; 941, p. 234; 949, p. 307; 991, p. 260). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 9	93.82	June 10	94.07	Nov. 23	94.55
Apr. 12	93.97	Sept. 12	94.38		

24.6.29.300 (*941, p. 234; 991, p. 260). Mr. Brownfield. Water level, in feet below land-surface datum, 1944: Jan. 11, 68.26 (pumping).

24.6.30.111 (*941, p. 234; 949, p. 307; 991, p. 260). Mr. Brownfield. Water level, in feet below land-surface datum, 1944: Jan. 11, 67.95 (pumping).

24.7.3.311. G. D. Hatfield. Drilled irrigation and test well, diameter 16 and 12 inches, depth 334 feet. Measuring point, top of casing, south side of well, 1.40 feet above land-surface datum. Reference point, top surface of lug welded on south side of casing, 0.10 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Nov. 23, 19.57.

24.7.4.424 (*886, p. 437; 911, p. 208; 941, p. 234; 949, p. 307; 991, p. 261). G. D. Hatfield. Reference point beginning Apr. 14, 1944, top of nail in Geological Survey washer, 35 feet northwest of well in 4-by 6-inch timber sill at south side of barn door, 0.78 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	88.55	June 10	91.01	Nov. 25	a 91.80
Apr. 14	a 90.72	Sept. 14	b 95.43	27	90.14

a Pumping.

b Pumping recently.

24.7.5.211 (*886, p. 437; 911, p. 208; 941, p. 235; *949, p. 307; 991, p. 261). R. M. Williamson.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 12	83.26	June 10	83.81	Nov. 23	83.83
Apr. 14	83.46	Sept. 14	84.43		

24.7.8.212 (*911, p. 208; 941, p. 235; 949, p. 308; 991, p. 261). J. M. McDougall. Water level, in feet below land-surface datum, 1944: Jan. 11, 88.29 (pumping recently).

24.7.9.111 (*886, p. 437; 911, p. 208; *941, p. 235; 949, p. 308; 991, p. 261). Smyer Bros. Measuring point beginning Apr. 14, 1944, top edge of 3/4-inch hole in northeast side of basal flange of Sterling pump, 0.09 foot above land-surface datum. Reference point No. 2 is 0.57 foot above land-surface datum; published incorrectly in Water-Supply Paper 941 as 1.57 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	84.79	June 12	87.53	Nov. 24	84.98
Apr. 14	87.67	Sept. 14	86.45		

24.7.9.241 (*941, p. 235; 949, p. 308; 991, p. 261). G. D. Hatfield. Measuring point beginning Sept. 14, 1944, top edge of 3/4-inch hole in plank cover over well, 1.41 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 11, 91.80; June 10, 91.62; Sept. 14, 92.35; Nov. 27, 91.44.

24.7.9.241a. G. D. Hatfield. Drilled irrigation and test well, diameter 16 inches, depth 375 feet. Measuring point, bottom inside edge of 1- by 4-inch slot cut in southeast side of casing, 0.32 foot below land-surface datum. Reference point No. 1, top of concrete well curb at well 24.7.9.241, which is 100 feet west-southwest, 0.50 foot above land-surface datum; reference point No. 2, top surface of N.E. bolt head in discharge valve to irrigation tank, 57 feet northeast of reference point No. 1 and 0.97 foot above land-surface datum. Bolt head is below wheel of gate valve. Water levels, in feet below land-surface datum, 1944: July 19, 22.53; Sept. 14, 21.99; Nov. 27, 21.62.

24.7.10.111 (*911, p. 208; 941, p. 235; 949, p. 308; 991, p. 261). G. D. Hatfield. Water level, in feet below land-surface datum, 1944: Jan. 11, 91.67.

24.7.10.211 (*911, p. 208; 941, p. 235; 949, p. 308; 991, p. 261). Fred Hassman. Water level, in feet below land-surface datum, 1944: Jan. 11, 88.69.

24.7.11.111 (*911, p. 208; *941, p. 235; *949, p. 308; 991, p. 261). Edith E. Pollard. Measuring point beginning Jan. 11, 1944, top edge of Geological Survey washer in top west edge of east pump support that sits on concrete, just to east of pump column, 0.45 foot above concrete curb and 0.95 foot above land-surface datum. Same measuring point as used prior to 1942. Water level, in feet below land-surface datum, 1944: Jan. 11, 85.98.

24.7.13.212 (*911, p. 209; 941, p. 235; 949, p. 308; 991, p. 261). Percival & Dwyer. Water level, in feet below land-surface datum, 1944: Jan. 11, 71.07.

24.7.13.311 (*886, p. 438; 911, p. 209; 941, p. 235; 949, p. 308; 991, p. 261). Jennie Weeks. Water level, in feet below land-surface datum, 1944: Jan. 11, 77.00.

24.7.14.221 (*886, p. 438; *911, p. 209; *941, p. 235; 949, p. 308; 991, p. 261). J. H. Winslow. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 24, 80.39; Sept. 23, 83.51.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	81.32	80.86	80.62	80.57	80.69	82.03	82.47	82.69	83.14	83.15	82.65	82.45
2	81.30	80.85	80.61	80.50	80.75	82.05	82.48	82.68	83.15	83.34	82.77	82.43
3	81.29	80.84	80.61	80.45	80.79	82.07	82.48	82.68	83.16	83.44	82.83	82.41
4	81.26	80.83	80.61	80.44	80.89	82.09	82.49	82.68	83.20	83.51	82.87	82.40
5	81.26	80.83	80.57	80.45	80.94	82.10	82.50	82.68	83.22	83.52	82.85	82.39
6	81.23	80.81	80.59	80.43	81.00	82.10	82.50	82.69	83.24	83.51	82.84	82.37
7	81.23	80.82	80.60	80.42	81.04	82.11	82.52	82.71	83.25	83.47	82.82	82.36
8	81.22	80.75	80.58	80.42	81.10	82.14	82.53	82.75	83.26	83.45	82.80	82.34

24.7.14.221. J. H. Winslow--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
9	81.21	80.73	80.57	80.42	81.16	82.16	82.54	82.76	83.29	83.42	82.78	82.33
10	81.20	80.74	80.55	80.43	81.21	82.17	82.54	82.77	83.31	83.40	82.76	82.32
11	81.16	80.73	80.55	80.45	81.29	82.18	82.55	82.78	83.33	83.38	82.74	.....
12	81.15	80.70	80.54	80.43	81.35	82.19	82.56	82.79	83.34	83.35	82.72	.....
13	81.12	80.70	80.54	80.43	81.38	82.20	82.56	82.83	83.36	83.33	82.71	.....
14	81.10	80.67	80.53	80.44	81.45	82.22	82.58	82.84	83.37	83.31	82.70	82.26
15	81.10	80.66	80.53	80.46	81.50	82.24	82.59	82.85	83.39	83.30	82.69	82.23
16	81.09	80.64	80.52	80.44	81.53	82.26	82.61	82.86	83.41	83.28	82.68	82.21
17	81.08	80.66	80.52	80.45	81.58	82.29	82.64	82.90	83.42	83.24	82.61	82.19
18	81.06	80.66	80.53	80.42	81.64	82.31	82.65	82.92	83.43	83.22	82.65	82.19
19	81.06	80.64	80.53	80.43	81.67	82.32	82.67	82.94	83.45	83.20	82.65	82.17
20	81.04	80.63	80.54	80.40	81.72	82.34	82.69	82.97	83.47	83.18	82.62	82.15
21	81.02	80.63	80.54	80.40	81.75	82.36	82.70	82.98	83.49	83.16	82.61	82.13
22	81.02	80.63	80.56	80.43	81.80	82.38	82.71	82.99	83.50	83.13	82.59	82.12
23	80.99	80.62	80.57	80.41	81.84	82.39	82.71	83.00	83.51	83.11	82.00	82.12
24	80.98	80.62	80.57	80.39	81.86	82.40	82.75	83.02	.....	83.10	82.08	82.10
25	80.98	80.63	80.59	80.40	81.88	82.42	82.75	83.03	.....	83.09	82.32	82.09
26	80.93	80.62	80.57	80.48	81.90	82.45	82.76	83.05	83.60	83.08	82.46	82.06
27	80.93	80.62	80.57	80.50	81.93	82.46	82.75	83.06	79.94	83.18	82.50	82.05
28	80.92	80.63	80.56	80.55	81.95	82.46	82.74	83.08	81.43	80.15	82.50	82.03
29	80.90	80.62	80.55	80.60	81.97	82.47	82.73	83.09	82.28	81.40	82.48	.....
30	80.89	.....	80.56	80.67	82.00	82.47	82.71	83.11	82.79	82.03	82.46	.....
31	80.87	.....	80.56	.....	82.02	.....	82.70	83.13	.....	82.42	.....	81.97

a Sudden rises in water level caused by entry of surface water into well following rains. Not considered in determining highest recorded water level.

24.7.14.331 (*911, p. 209; 941, p. 236; 949, p. 309; 991, p. 262). Catherine Nordhaus. Water level, in feet below land-surface datum, 1944: Jan. 11, 82.61.

24.7.15.122 (*886, p. 438; *911, p. 209; 941, p. 236; 949, p. 309; *991, p. 262). J. N. McDougall. Reference point beginning Apr. 14, 1944, top of 3-inch rock in concrete curb surrounding well, 2.5 feet south of north edge, 0.6 foot west of east edge, and 0.52 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 88.41.

24.7.16.211b (*941, p. 236; 949, p. 309; 991, p. 262). George Snyder. Reference points beginning Apr. 14, 1944: (1) Top of high rim of concrete sluice box 3 feet north of a well 50 feet west of observation well at a point above the 3-inch pipe embedded in the concrete, 1.04 feet above land-surface datum; (2) top of concrete well curb on west side of the well 50 feet west of observation well, 0.24 foot below land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	84.57	June 12	85.06	Nov. 24	85.68
Apr. 14	84.89	Sept. 14	85.40		

24.7.21.222 (*911, p. 210; *941, p. 236; 949, p. 309; 991, p. 262). Hiram Jeter. Water level, in feet below land-surface datum, 1944: Jan. 11, 75.50.

24.7.24.111 (*886, p. 438; 911, p. 210; 941, p. 236; 949, p. 309; 991, p. 262). Jasper Wilson. Pump removed. Measuring point beginning Sept. 14, 1944, top of concrete pump base, southwest side of well, 1.83 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	74.79	June 12	74.89	Nov. 27	75.36
Apr. 14	74.88	Sept. 14	75.09		

24.7.24.211 (*911, p. 210; 941, p. 236; 949, p. 309; 991, p. 262). J. S. Hack. Water level, in feet below land-surface datum, 1944: Jan. 11, 72.88.

24.7.24.312 (*911, p. 210; 941, p. 236; 949, p. 309; 991, p. 262). H. E. Emory.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	71.37	June 12	71.64	Nov. 27	71.97
Apr. 14	71.55	Sept. 14	71.80		

24.7.26.113 (*941, p. 237; 949, p. 309; 991, p. 262). Mr. Birchfield. Reference point beginning Apr. 14, 1944, top of lower bolt head in windmill tower brace at northwest corner of tower, 1.52 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 11, 70.26; Apr. 14, 70.42; June 12, 70.52; Sept. 14, 70.75.

24.8.1.333 (*886, p. 438; 911, p. 210; 941, p. 237; 949, p. 309; 991, p. 262). F. K. Krettek. Reference point beginning Apr. 14, 1944, top of rock set in concrete 8 feet east of northeast corner of well, 0.19 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 11	17.28	June 12	19.30	Nov. 24	14.92
Apr. 14	18.99	Sept. 14	18.64		

24.8.1.333b (*941, p. 237; 949, p. 309; 991, p. 262). F. K. Krettek. Reference point beginning Apr. 14, 1944, top of 4- by 4-foot concrete curb surrounding well, 0.65 foot below land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 11	18.00	June 12	20.00	Nov. 24	15.65
Apr. 14	19.64	Sept. 14	19.39		

24.8.4.111 (*941, p. 237; 949, p. 309; 991, p. 262). Foy Riley. Measuring point beginning Sept. 15, 1944, inside top edge of a 2- by 4-inch board in front of recorder shelter to which hasp is fastened, 2.78 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 11	37.69	June 12	38.00	Sept. 15	39.00
Apr. 14	37.40	Sept. 14	38.98	Nov. 21	38.77

24.8.5.111 (*886, p. 439; 911, p. 219; 941, p. 237; 949, p. 309; 991, p. 262). R. A. Hackabeil. Reference point beginning Apr. 14, 1944, top of nail in southeast windmill leg brace, 3.49 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 44.38.

24.8.6.112 (*991, pp. 262-263). Deming Army Air Base water-supply well 3.

Water level, in feet below land-surface datum, 1944

Jan. 8	52.06	June 15	53.08	Nov. 22	53.14
Apr. 12	52.36	Sept. 13	53.00		

24.8.7.431 (*941, p. 237; 949, p. 309; 991, p. 262, incorrectly designated as 24.8.7.300). Paul Hrna. Measuring point raised to 0.95 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 41.15.

24.8.8.121 (*886, p. 440; 911, p. 210; 941, p. 237; 949, p. 309; 991, p. 263). Mrs. J. F. Holiday. Water level, in feet below land-surface datum, 1944: Jan. 10, 42.98.

24.8.11.221 (*886, p. 439; 911, p. 210; 941, p. 237; 949, p. 309; 991, p. 263). F. K. Krettek.

24.8.11.221. F. K. Kretek--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	17.50	June 12	18.26	Nov. 24	16.23
Apr. 14	17.56	Sept. 14	18.58		

24.8.20.411 (*886, p. 440; 911, p. 210; 941, p. 237; 949, p. 309; 991, p. 263). J. W. Jones. Measurements discontinued after Nov. 24, 1944.

Water level, in feet below land-surface datum, 1944

Jan. 13	43.16	June 12	43.46	Nov. 24	41.54
Apr. 13	43.17	Sept. 14	44.06		

24.9.1.211 (*991 p. 263). Deming Army Air Base water-supply well 2.

Water level, in feet below land-surface datum, 1944

Jan. 8	57.73	June 15	58.66	Nov. 22	58.78
Apr. 12	58.00	Sept. 13	59.15		

24.9.1.222 (*991, p. 263). Deming Army Air Base water-supply well 1.

Water level, in feet below land-surface datum, 1944

Jan. 8	54.69	June 15	55.60	Nov. 22	55.78
Apr. 12	54.98	Sept. 13	56.14		

24.9.2.221a (*991, p. 263). R. G. Folk. Measurements discontinued after Jan. 10. Water level, in feet below land-surface datum, 1944: Jan. 10, 56.53.

24.9.2.421 (*886, p. 441; *911, p. 210; *941, p. 238; *949, p. 309; 991, p. 263). J. H. Winslow. Measuring point beginning Apr. 15, 1944, top south edge of north east-west I-beam pump support, west of turbine pump, 0.34 foot above concrete well curb and land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 10	55.51	June 12	55.89	Nov. 24	56.23
Apr. 15	55.69	Sept. 14	56.24		

24.9.3.121 (*941, p. 238; 949, p. 309; 991, p. 263). Jim Swartz. Water level, in feet below land-surface datum, 1944: Jan. 10, 60.69.

24.9.6.311 (*886, p. 441; *911, p. 211; *941, p. 238; 949, p. 309; *991, p. 263). J. B. Wells. Old reference point partially mutilated; new reference point beginning Apr. 12, 1944, top of concrete curb east side of well, 0.30 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 8, 77.94; June 11, 80.40; Nov. 22, 79.92.

24.9.6.431 (*941, p. 238; *949, p. 310; 991, p. 264). State of New Mexico. Water-stage recorder removed from well May 1944.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	60.54	Apr. 12 a	66.55	Sept. 12	61.5.00	Nov. 22	64.04
13	60.46	June 11 b	67.17	13 b	75.17		

a Nearby wells pumping.

b Nearby well pumping.

c Pumping.

24.9.7.211 (*886, p. 442; 911, p. 211; *941, p. 238; *949, p. 310; 991, p. 264). Emanuel Vocale. Water levels, in feet below land-surface datum, 1944: Jan. 8, 69.97; Nov. 22, 73.19.

24.9.7.331 (*886, p. 442; *911, p. 211; 941, p. 238; 949, p. 310; 991, p. 264). Smitty R. Moir. Reference point beginning Apr. 12, 1944, top of concrete base 8 feet west of well, at bolt near southwest corner, 0.96 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 8, 76.23; Sept. 13, 86.35 (nearby well pumping recently); Nov. 22, 77.43.

24.9.8.112 (*886, p. 443; 911, p. 211; 941, p. 238; 949, p. 310; 991, p. 264). Ben F. Jonas. Water levels, in feet below land-surface datum, 1944: Apr. 12, 74.00; June 11, 74.79; Sept. 12, 77.18; Nov. 22, 76.32.

24.9.8.441 (*911, p. 211; 941, p. 238; 949, p. 310; 991, p. 264). Frank A. Bredecko. Measuring point beginning Jan. 11, 1944, top of concrete curb on south side of well, level with land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 71.89.

24.9.9.411 (*886, p. 444; *911, p. 211; *941, p. 238; 949, p. 310; 991, p. 264). Joe Clary.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 11	67.64	June 12	a 82.86	Nov. 21	69.19
Apr. 13	a 80.36	Sept. 13	77.47		

a Nearby well pumping.

24.9.12.111 (*886, p. 444; 911, p. 211; 941, p. 238; 949, p. 311; 991, p. 264). Ed H. Hatcher. Water level, in feet below land-surface datum, 1944: Jan. 10, 55.73 (pumping).

24.9.13.111 (*886, p. 444; 911, p. 211; 941, p. 239; 949, p. 311; 991, p. 264). Mary E. Barrett. Measuring point beginning Sept. 14, 1944, top surface of 6- by 6-foot concrete platform surrounding well at south side of well, 1.26 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 10	26.40	June 12	29.17	Nov. 24	30.82
Apr. 13	26.39	Sept. 14	32.71		

24.9.15.221 (*941, p. 239; *949, p. 311; 991, p. 265). Joe Lutonsky. Measuring point raised Apr. 15, 1944, to 1.33 feet above concrete well curb and 1.83 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 13, 64.04.

24.9.18.311 (*911, p. 211; 941, p. 239; 949, p. 311; 991, p. 265). Chas. Peter. Water level, in feet below land-surface datum, 1944: Jan. 8, 74.34.

24.9.19.111 (*911, p. 211; 941, p. 239; 949, p. 311; 991, p. 265; incorrectly designated as 24.9.19.121). Francis Ligocky.

Water level, in feet below land-surface datum, 1944

Jan. 8	75.54	June 11	75.87	Nov. 22	76.93
Apr. 13	75.98	Sept. 13	80.56		

24.9.21.131 (*886, p. 445; 911, p. 212; 941, p. 239; 949, p. 311; 991, p. 265). L. L. Gaskill.

Water level, in feet below land-surface datum, 1944

Jan. 11	72.09	June 11	78.42	Nov. 21	74.01
Apr. 13	72.93	Sept. 13	a 87.46		

a Nearby well pumping.

24.9.23.211 (*886, p. 446; *911, p. 212; 941, p. 239; 949, p. 311; 991, p. 265). J. H. Winslow. Water levels, in feet below land-surface datum, 1944: Jan. 13, 69.96; Apr. 13, 77.03 (pumping recently); Sept. 14, 74.24; Nov. 24, 71.15.

24.9.24.421 (*991, p. 265). W. F. Roberts. Water level, in feet below land-surface datum, 1944: Jan. 13, 60.22.

24.9.28.221 (*941, p. 239; 949, p. 311; 991, p. 265). John Hrna. Water level, in feet below land-surface datum, 1944: Jan. 11, 69.09.

24.9.32.311 (*911, p. 212; 941, p. 239; 949, p. 311; 991, p. 265). D. D. Roderick. Pump removed from well and placed on new well 10 feet southwest of old well. Measuring point beginning Jan. 11, 1944, north top edge of Geological Survey washer in top of south 8- by 8-inch old pump support at the southwest corner of the well, flush with the concrete well curb and 1.50 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 73.23.

24.9.34.111 (*941, p. 239; 949, p. 311; 991, p. 265). H. C. Norwood. Reference point beginning Apr. 15, 1944, top of concrete door step, west side, at house 35 feet east of well, 0.64 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 11, 64.69.

24.10.1.311 (*941, p. 239; 949, p. 311; 991, p. 265). R. V. Griggs. Water level, in feet below land-surface datum, 1944: Jan. 8, 82.27.

24.10.3.411 (*886, p. 446; *911, p. 212; 941, p. 239; 949, p. 311; 991, p. 265). Josh Bryan. Water levels, in feet below land-surface datum, 1944: Jan. 8, 85.57; Apr. 15, 85.98; Sept. 12, 87.36; Nov. 22, 87.52.

24.10.3.411b (*941, p. 239; *949, p. 311; 991, p. 265). Josh Bryan. Reference point beginning Apr. 15, 1944, top of concrete slab at southwest corner of granary, 25 feet northeast of well, 0.17 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 8, 78.65; Apr. 15, 80.03; Sept. 12, 80.82; Nov. 22, 80.07.

24.10.10.311 (*886, p. 446; *911, p. 213; 941, p. 239; 949, p. 311; 991, p. 265). John Tilch. Water levels, in feet below land-surface datum, 1944: Jan. 8, 81.67; June 11, 83.22; Nov. 22, 82.83.

24.10.12.111 (*886, p. 447; 911, p. 213; 941, p. 240; 949, p. 311; 991, p. 265). Morgan Garrett. Water level, in feet below land-surface datum, 1944: Jan. 8, 85.01.

24.10.12.431 (*886, p. 447; 911, p. 213; 941, p. 240; 949, p. 311; 991, p. 265). Steve Hrna. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 7-8, 79.28; Sept. 13 and 16, 84.15.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	80.46	79.96	79.48	79.31	79.65	79.82	81.88	83.01	83.86	83.25	81.89	81.05
2	80.45	79.95	79.45	79.32	79.62	79.84	81.97	83.06	83.93	83.17	81.86	81.01
3	80.43	79.93	79.46	79.33	79.62	79.85	82.04	83.12	83.98	83.11	81.83	80.99
4	80.43	79.90	79.48	79.32	79.63	79.86	82.12	83.19	84.02	83.05	81.79	80.97
5	80.41	79.90	79.50	79.31	79.60	79.86	82.21	83.30	84.07	83.00	81.75	80.95
6	80.37	79.87	79.54	79.29	79.60	79.87	82.26	83.34	84.08	82.94	81.73	80.92
7	80.38	79.84	79.61	79.28	79.60	79.87	82.31	83.42	84.12	82.89	81.70	80.90
8	80.38	79.84	79.67	79.28	79.63	79.91	82.39	83.47	84.12	82.83	81.67	80.87
9	80.35	79.79	79.58	79.29	79.64	79.94	82.41	83.55	84.12	82.78	81.64	80.85
10	80.33	79.81	79.65	79.37	79.65	79.99	82.41	83.59	84.12	82.73	81.61	80.84
11	80.32	79.79	79.64	79.42	79.66	80.06	82.40	83.62	84.12	82.68	81.58	80.81
12	80.32	79.75	79.62	79.44	79.65	80.15	82.38	83.68	84.14	82.64	81.53	80.79
13	80.31	79.75	79.60	79.47	79.62	80.27	82.38	83.69	84.15	82.60	81.51	80.78
14	80.28	79.72	79.57	79.64	79.59	80.41	82.38	83.76	84.13	82.55	81.48	80.74
15	80.24	79.71	79.56	79.73	79.57	80.59	82.41	83.85	84.13	82.51	81.44	80.71
16	80.24	79.70	79.54	79.78	79.54	80.73	82.46	83.85	84.15	82.47	81.43	80.69
17	80.22	79.68	79.51	79.83	79.51	80.89	82.52	83.83	84.11	82.42	81.40	80.66
18	80.20	79.66	79.48	79.87	79.50	81.00	82.61	83.75	84.05	82.39	81.37	80.66
19	80.18	79.65	79.46	79.88	79.47	81.08	82.67	83.69	83.96	82.36	81.35	80.63
20	80.15	79.62	79.43	79.82	79.46	81.13	82.71	83.65	83.94	82.31	81.33	80.60
21	80.13	79.61	79.45	79.80	79.47	81.18	82.78	83.60	83.89	82.27	81.30	80.58
22	80.12	79.60	79.43	79.86	79.47	81.31	82.85	83.55	83.83	82.24	81.27	80.55
23	80.08	79.57	79.41	79.85	79.49	81.37	82.88	83.55	83.78	82.20	81.22	80.52
24	80.05	79.54	79.38	79.73	79.50	81.41	82.87	83.54	83.71	82.17	81.19	80.50
25	80.04	79.54	79.36	79.74	79.51	81.45	82.86	83.54	83.65	82.13	81.20	80.49
26	80.03	79.53	79.37	79.74	79.53	81.50	82.81	83.56	83.59	82.10	81.18	80.47
27	80.05	79.51	79.34	79.72	79.62	81.56	82.81	83.63	83.52	82.08	81.14	80.45
28	80.01	79.52	79.34	79.71	79.67	81.62	82.81	83.63	83.46	82.04	81.14	80.43
29	80.01	79.50	79.33	79.70	79.71	81.69	82.81	83.63	83.39	82.01	81.10	80.41
30	79.99	.....	79.32	79.70	79.78	81.79	82.85	83.77	83.32	81.97	81.07	80.39
31	79.98	.....	79.29	.....	79.81	.....	82.93	83.79	.....	81.93	.....	80.39

24.10.12.432a (*911, p. 213; 941, p. 240; *949, p. 312; 991, p. 266). Steve Hrna. Water level, in feet below land-surface datum, 1944: Jan. 8, 79.21.

24.10.12.432b (*911, p. 214; 941, p. 240; 949, p. 312; 991, p. 266). Steve Hrna. Water level, in feet below land-surface datum, 1944: Jan. 8, 79.66.

24.10.22.211 (*941, p. 241; 949, p. 312; 991, p. 266). Mr. Hurt.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 8	70.28	June 11	70.33	Nov. 22	70.93
Apr. 13	70.27	Sept. 12	70.78		

24.10.29.222 (*911, p. 214; 941, p. 241; 949, p. 312; 991, p. 266). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 8	64.46	June 11	64.48	Nov. 22	64.73
Apr. 13	64.45	Sept. 12	64.66		

24.11.1.333 (*991, p. 266). J. D. Smith. Water level, in feet below land-surface datum, 1944: Jan. 8, 99.78.

25.8.18.111 (*911, p. 214; *941, p. 241; 949, p. 312; 991, p. 266). L. S. Gore. Formerly owned by George McCann.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 10	53.47	June 11	a 59.49	Nov. 24	53.40
Apr. 13	a 57.69	Sept. 13	a 58.81		

a Nearby well pumping.

25.8.19.331 (*991, p. 266). Reference points beginning Apr. 13, 1944: (1) Top of concrete engine base 12 feet south of well, 1.39 feet above land-surface datum; (2) top of concrete engine base 18 feet east of well, at center of north side, 0.19 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Apr. 13, 60.48.

25.9.4.211 (*911, p. 215; 941, p. 241; 949, p. 312; 991, pp. 266-267). Val Miller. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Jan. 1-6, 7.48; Dec. 21-24, 69.03.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	67.48	67.56	67.62	67.71	67.81	67.90	.....	68.30	68.57	68.79	.....	68.98
2	67.49	67.56	67.62	67.72	67.82	67.90	.....	68.31	68.58	.....	.....	68.98
3	67.49	67.56	67.63	67.72	67.82	67.90	.....	68.31	68.59	.....	.....	68.98
4	67.49	67.56	67.63	67.72	67.83	67.90	.....	68.32	68.61	.....	.....	68.98
5	67.49	67.56	67.62	67.72	67.83	67.90	.....	68.33	68.62	.....	.....	68.98
6	67.49	67.56	67.63	67.72	67.83	67.90	.....	68.35	68.63	.....	.....	68.99
7	67.50	67.56	67.63	67.72	67.83	67.90	.....	68.36	68.64	.....	.....	68.99
8	67.50	67.57	67.63	67.72	67.84	67.90	.....	68.37	68.65	.....	.....	68.99
9	67.50	67.56	67.63	67.73	67.84	67.90	.....	68.38	68.66	.....	.....	68.99
10	67.50	67.57	67.63	67.74	67.85	67.90	.....	68.39	68.66	.....	.....	69.00
11	67.50	67.58	67.64	67.75	67.85	67.90	.....	68.40	68.67	.....	.....	69.00
12	67.50	67.58	67.64	67.75	67.85	.....	.....	68.41	68.68	.....	.....	69.00
13	67.50	67.58	67.65	67.75	67.85	.....	.....	68.41	68.68	.....	.....	69.00
14	67.50	67.57	67.65	67.75	67.85	.....	.....	68.42	68.69	.....	.....	69.00
15	67.50	67.58	67.66	67.76	67.87	.....	.....	68.41	68.69	.....	.....	69.00
16	67.50	67.59	67.66	67.77	67.87	.....	.....	68.44	68.70	.....	.....	69.00
17	67.50	67.59	67.66	67.77	67.87	.....	.....	68.45	68.71	.....	.....	69.00
18	67.51	67.59	67.66	67.77	67.87	.....	68.19	68.46	68.71	.....	.....	69.00
19	67.51	67.59	67.67	67.78	67.88	.....	68.19	68.46	68.72	.....	.....	69.02
20	67.51	67.59	67.67	67.78	67.88	.....	68.20	68.47	68.73	.....	.....	69.02
21	67.52	67.60	67.68	67.78	67.88	.....	68.21	68.48	68.73	.....	68.97	69.03
22	67.52	67.60	67.68	67.79	67.88	.....	68.22	68.48	68.74	.....	68.97	69.03

25.9.4.211. Val Miller--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(FROM recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23	67.52	67.60	67.68	67.79	67.89	..	68.23	68.49	68.75	.....	68.97	69.03
24	67.52	67.60	67.68	67.79	67.89	.....	68.24	68.49	68.75	.....	68.97	69.03
25	67.52	67.60	67.69	67.79	67.89	.....	68.24	68.50	68.75	.....	68.98	.....
26	67.52	67.61	67.69	67.80	67.89	.....	68.25	68.50	68.77	.....	68.98	.....
27	67.53	67.61	67.69	67.80	67.90	.....	68.25	68.52	68.77	.....	68.98	.....
28	67.54	67.61	67.69	67.81	67.90	.....	68.26	68.55	68.77	.....	68.98	.....
29	67.54	67.61	67.70	67.81	67.90	.....	68.29	68.55	68.78	.....	68.98	.....
30	67.54	.....	67.70	67.81	67.90	.....	68.28	68.56	68.79	.....	68.98	.....
31	67.55	.....	67.70	.....	67.90	.....	68.29	68.57	.....	.....	.....	.....

25.9.6.111 (*941, p. 241; 949, p. 312; 991, p. 267). Paul M. Yates. Reference point beginning Apr. 13, 1944, top of concrete well curb, south side of well, 0.76 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 8, 67.67.

25.9.6.421 (*886, p. 447; *911, p. 215; 941, p. 241; 949, p. 312; 991, p. 267). Roderick and Wheeler. Water levels, in feet below land-surface datum, 1944: Jan. 11, 71.32; Apr. 15, 81.91 (pumping recently); June 11, 77.93; Nov. 22, 72.86.

25.9.11.111 (*886, p. 447; *911, p. 215; *941, p. 241; 949, p. 312; *991, p. 267; published incorrectly as 25.9.11.114 in previous water-supply papers). J. B. Anderson. Reference point beginning Apr. 13, 1944, top of concrete weir box at northwest corner, 10 feet east of well, 3.99 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 10, 65.12; Apr. 13, 66.41; Nov. 22, 66.62.

25.9.12.311 (*911, p. 215; 941, p. 241; 949, p. 312; 991, p. 267). Jo Willa Cheek. Water level, in feet below land-surface datum, 1944: Jan. 10, 60.32.

25.9.14.311 (*911, p. 215; 941, p. 241; 949, p. 312; 991, p. 267). C. Wilbur Gaines. Formerly owned by George W. McCann. Water level, in feet below land-surface datum, 1944: Jan. 10, 60.38.

25.9.15.211 (*886, p. 448; 911, p. 215; 941, p. 241; *949, p. 312; 991, p. 267). C. H. Paulk. Water level, in feet below land-surface datum, 1944: Jan. 10, 63.99.

25.9.17.311 (*911, p. 215; 941, p. 241; 949, p. 312; 991, p. 267). Tom Tigner. Water level, in feet below land-surface datum, 1944: Jan. 12, 69.54 (pumping recently).

25.9.19.111 (*911, p. 215; 941, p. 241; 949, p. 313; 991, p. 267). Tom Marcak. Reference points beginning Apr. 13, 1944: (1) Top of concrete slab 7 feet north of well, near center of south edge, 0.43 foot above land-surface datum; (2) top of elevated part of discharge flume of well at southwest corner, 18 feet east of well, 2.65 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 65.01.

25.9.21.311 (*886, p. 448; 911, p. 215; 941, p. 242; 949, p. 313; 991, p. 267). A. W. Speir. Water levels, in feet below land-surface datum, 1944: Jan. 10, 67.24; Apr. 13, 67.20; Sept. 13, 72.47; Nov. 22, 68.73.

25.9.24.222 (*886, p. 447; 911, p. 215; 941, p. 242; 949, p. 313; 991, p. 268). Geo. P. Watkins. Water levels, in feet below land-surface datum, 1944: Jan. 10, 51.10; Apr. 13, 50.89; Nov. 24, 51.15.

25.9.25.111 (*911, p. 215; *941, p. 242; *949, p. 313; 991, p. 268). Alan Crotchett. Reference point beginning Apr. 13, 1944, top of concrete well curb, northwest side of well, 0.89 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 49.66.

25.9.27.422 (*911, p. 216; *941, p. 242; 949, p. 313; 991, p. 268). H. A. Gray. Water level, in feet below land-surface datum, 1944: Jan. 10, 56.26.

25.9.28.121 (*941, p. 242; 949, p. 313; 991, p. 268). Leonard Zumwalt.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 10	67.84	June 11	72.38	Nov. 22	69.69
Apr. 13	67.78	Sept. 13	73.79		

25.9.30.111 (*911, p. 216; *941, p. 242; 991, p. 268). M. M. Robertson. Formerly owned by Frank Chvojka. Water level, in feet below land-surface datum, 1944: Jan. 12, 59.35.

25.9.35.211 (*886, p. 448; *911, p. 216; 941, p. 242; 949, p. 313; 991, p. 268). Joe Marcak. Formerly owned by Sigman Lindauer Estate. Water levels, in feet below land-surface datum, 1944: Jan. 10, 50.63; Apr. 13, 50.79; June 11, 51.98; Nov. 24, 51.20.

25.10.15.422 (*941, p. 242; 949, p. 313; 991, p. 268). C. H. Graves. Water level, in feet below land-surface datum, 1944: Jan. 12, 58.70.

25.10.36.111 (*911, p. 216; 941, p. 242; 949, p. 313; 991, p. 268). State of New Mexico. Water level, in feet below land-surface datum, 1944: Jan. 12, 62.38.

25.10.36.222 (*886, p. 448; *911, p. 216; 941, p. 242; 949, p. 313; 991, p. 268). State of New Mexico. Water levels, in feet below land-surface datum, 1944: Jan. 12, 62.44; Nov. 22, 63.70.

26.9.2.221 (*941, p. 242; 949, p. 313; 991, p. 268). Tom R. Taylor. Old reference point and measuring point destroyed. Measuring point beginning Apr. 13, 1944, base of turbine pump, north side, 0.57 foot above new concrete well curb, 1.00 foot above land-surface datum. Reference point, top of nail in Geological Survey washer in top of 2- by 2-inch stake at fence post, 85 feet north of well, 0.51 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 10	41.18	June 11	41.37	Nov. 24	41.69
Apr. 13	41.10	Sept. 13	42.60		

26.9.4.331 (*941, p. 242; 949, p. 313; 991, p. 268). R. E. Smyer. Reference point beginning Apr. 13, 1944, top of nail in Geological Survey washer in top of railroad tie set in ground at northeast corner of earth tank at windmill, 70 feet west of well, 0.43 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 10, 53.39.

26.9.11.211 (*886, p. 448; 911, p. 216; 941, p. 243; 949, p. 313; 991, p. 268). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Jan. 10	38.88	June 11	38.99	Nov. 24	39.34
Apr. 13	38.92	Sept. 13	39.25		

26.10.1.310 (*886, p. 448; *911, p. 216; 941, p. 243; *949, p. 313; 991, p. 268; incorrectly published in previous reports as 26.10.1.100). Theo Eisen. Measuring point beginning Apr. 13, 1944, top edge of Geological Survey washer in north face of south 6- by 6-inch timber at west edge of pump base, 0.17 foot below land-surface datum. Reference point No. 2 beginning Apr. 13, 1944, top of concrete well curb, west side of well, 3 inches west of east face of curb, 0.38 foot below land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 12, 60.27.

27.8.8.411 (*911, p. 216; 941, p. 243; 949, p. 313; 991, p. 268).
Bill Birchfield. Formerly owned by Pearl Verdick.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 10	23.64	June 11	24.45	Nov. 24	23.72
Apr. 13	31.88	Sept. 13	23.76		

27.9.2.211 (*911, p. 217; 941, p. 243; 949, p. 313; 991, p. 268).
State of New Mexico. Measurements discontinued after Nov. 24, 1944.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 10	14.51	June 11	16.72	Nov. 24	a 0.95
Apr. 13	15.96	Sept. 13	a 4.58		

a Surface water had flowed into well.

27.9.12.111. Waterloo School. Abandoned school well, diameter 6 inches. Measuring point, top of casing, 0.15 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Nov. 24, 27.42.

29.7.18.211 (*911, p. 217; 941, p. 243; 949, p. 313; 991, p. 268).
R. M. Marshall. Water level, in feet below land-surface datum, 1944:
Jan. 10, 14.53.

29.8.12.244 (*911, p. 217; 941, p. 243; 949, p. 313; 991, p. 268).
A. G. Anderson. Water level, in feet below land-surface datum, 1944:
Jan. 10, 7.37.

29.8.13.111 (*911, p. 217; 941, p. 243; 949, p. 313; 991, p. 268).
L. L. Burkhead. Water level, in feet below land-surface datum, 1944:
Jan. 10, 6.68.

QUAY COUNTY (HOUSE AREA)

By C. R. Murray

Investigation of the ground-water resources of the House area was continued in 1944 in cooperation with the State engineer. Reports on the investigation, which began in 1940 under the supervision of Charles V. Theis, have been published in Geological Survey Water-Supply Papers 941, 949, and 991.

Water-level measurements were made in 43 wells in January, 49 in March, 48 in May, 48 in August, 52 in September, and 46 in December, making a total of 286 measurements for 1944. The January measurements show the yearly change in the amount of ground water in storage (see fig. 13), and the bimonthly measurements show the seasonal fluctuations of the water table. Automatic water-stage recorders were operated on two wells throughout the year and gave a continuous record of water-level changes in these wells.

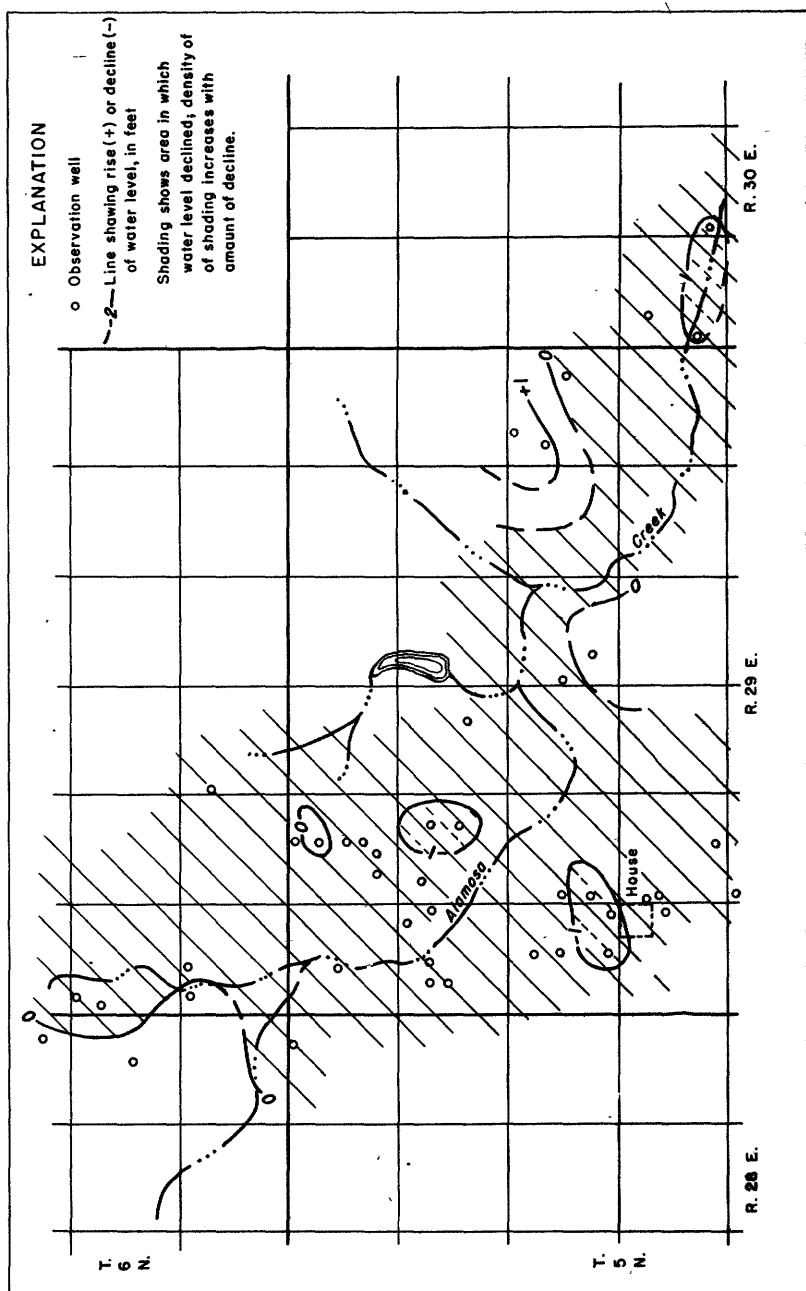


Figure 13.—Map of part of Quay County, New Mexico, showing change in water level from January 1944 to January 1945.

Fluctuations in water level

Although the precipitation at Hassell, 7 miles west and 4 miles north of House, was 0.06 inch below the normal of 13.29 inches, a large amount, 10.29 inches, fell from June to September when it furnished part of the water requirements of the growing crops and reduced withdrawals from ground-water storage. It is estimated that about 1,500 acres was irrigated in the House-area in 1944, the estimates for the preceding years being, in order, 1,300, 1,250, and 720 acres. Approximately 2,500 acre-feet of water was pumped for irrigation in 1944 compared with 3,300, 2,500, and 580 acre-feet in the preceding years.

Water levels declined a fraction of a foot over much of the irrigated area near House (see fig. 13). However rises exceeding 1 foot took place in sec. 13, T. 5 N., R. 29 E., where, because of a change in land ownership, little water was pumped from wells during the year. Declines in excess of 1 foot occurred in three isolated areas, which totaled about 1.5 square miles. These were largely in secs. 8 and 18, T. 5 N., R. 29 E. and in sec. 19, T. 5 N., R. 30 E. The area along Alamosa Creek, where declines in excess of 1 foot occurred in 1943, exceeded 9 square miles. In general, water levels began falling about the middle of April and reached their lowest positions about August 20. Recovery then began but was insufficient to raise water levels to the positions they had at the beginning of the year. Thus, despite favorable weather conditions, considerable water was removed from storage in 1944.

Water-level measurements

5N.28.1.212. Drew Dunn. Abandoned drilled well, depth 102 feet. Measuring point, land surface at well. Reference point beginning May 19, 1944, top of Geological Survey washer in 2- by 2-inch stake driven in ground at fourth fence post south of corner post in north-south fence, 60 feet northeast of well, 0.70 foot above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Nov. 23, 1943	48.65	May 19, 1944	49.11	Sept. 27, 1944	49.29
Jan. 23, 1944	48.95	Aug. 22	49.29	Dec. 5	48.46
Mar. 28	49.09				

5N.29.5.211. Willard Carpenter. Drilled irrigation well, equipped with turbine pump, depth 108 feet. Measuring point, top edge of east $\frac{1}{2}$ -inch hole in northwest side of Fearless pump base, 0.35 foot above concrete pump base, 0.95 foot above land-surface datum. Reference point, top of nail holding Geological Survey washer in top of 2- by 2-inch stake, 1 foot south of corner post where north-south quarter-section-line fence joins east-west section-line fence, 72.5 feet northwest of well. Reference point is 2.43 feet above land-surface datum.

5N.29.5.211. Willard Carpenter--Continued.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Nov. 22, 1943	49.94	May 18, 1944	48.61	Sept. 28, 1944	48.89
Jan. 24, 1944	48.68	Aug. 21	48.74	Dec. 4	48.81
Mar. 27	48.70				

5N.29.5.231. C. G. Carpenter. Unused drilled irrigation well. Measuring point, top edge of 3/4-inch hole in board with strap hinges over top of well, level with land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	42.38	May 18	41.79	Sept. 28	42.85
Mar. 27	41.74	Aug. 21	42.83	Dec. 4	42.55

5N.29.5.341 (*941, p. 245; 949, p. 315; 991, p. 271). William Martin.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	30.99	May 20	35.56	Sept. 27	34.04
Mar. 27	30.60	Aug. 20	38.16	Dec. 4	32.03

5N.29.5.342 (*941, p. 245; *949, p. 315; 991, p. 271). William Martin. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 9, 10, and 13, 30.99; Aug. 21, 35.69.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.51	31.32	31.16	31.05	31.10	32.12	32.63	33.03	33.40	33.04	32.60	32.34
2	31.50	31.32	31.13	31.12	31.11	32.14	32.63	33.09	33.40	33.02	32.60	32.32
3	31.50	31.34	31.12	31.08	31.16	32.17	32.65	33.13	33.39	33.00	32.61	32.28
4	31.51	31.30	31.14	31.05	31.20	32.23	32.67	33.20	33.36	32.99	32.59	32.29
5	31.51	31.28	31.11	31.05	31.20	32.26	32.67	33.30	33.37	32.99	32.55	32.31
6	.....	31.29	31.15	31.03	31.20	32.29	32.65	33.30	33.56	32.98	32.51	32.27
7	.....	31.26	31.19	31.03	31.22	32.26	32.67	33.34	33.29	.....	32.52	32.28
8	31.50	31.26	31.15	31.00	31.26	32.31	32.67	33.42	33.25	32.95	32.55	32.25
9	31.47	31.23	31.13	30.99	31.29	32.34	32.66	33.46	33.20	32.92	32.52	32.26
10	31.45	31.26	31.08	30.99	31.31	32.32	32.65	33.51	33.20	32.92	32.51	32.27
11	31.46	31.29	31.07	31.06	31.36	32.36	32.68	33.53	33.18	32.91	32.50	32.26
12	31.49	31.24	31.12	31.03	31.38	32.39	32.72	33.53	33.15	32.87	32.48	32.25
13	31.47	31.20	31.10	30.99	31.42	32.41	32.74	33.52	33.05	32.86	.....	32.26
14	31.44	31.22	31.09	31.01	31.43	32.36	32.75	33.53	33.06	32.85	32.47	32.22
15	31.43	31.22	31.10	31.04	31.44	32.40	32.75	33.53	33.08	32.85	32.48	32.22
16	31.43	31.19	31.09	31.02	31.46	32.39	32.74	33.57	33.16	32.85	32.46	32.19
17	31.43	31.23	31.06	31.06	31.49	32.41	32.73	33.60	33.20	32.81	32.46	32.18
18	31.43	31.25	31.08	31.10	31.53	32.41	32.75	33.64	33.23	32.81	32.44	32.23
19	31.43	31.23	31.06	31.10	31.56	32.40	32.74	33.66	33.26	32.78	32.44	32.18
20	.....	31.19	31.04	31.07	31.59	32.38	32.76	33.68	33.28	32.78	32.46	32.16
21	.....	31.18	31.06	31.10	31.63	32.40	32.79	33.69	33.29	32.79	32.45	32.17
22	31.41	31.20	31.12	31.10	31.65	32.44	32.82	33.65	33.25	32.75	32.40	32.13
23	31.35	31.17	31.06	31.15	31.70	32.49	32.84	33.65	33.25	32.74	32.35	32.13
24	31.32	31.15	31.03	31.09	31.74	32.51	32.84	33.60	33.21	32.72	32.32	32.12
25	31.34	31.14	31.05	31.09	31.78	32.51	32.86	33.57	33.17	32.71	32.33	32.13
26	31.29	31.17	31.05	31.13	31.84	32.53	32.88	33.56	33.15	32.72	32.39	32.13
27	31.38	31.17	31.06	31.14	31.90	32.55	32.89	33.58	33.09	32.71	32.34	32.14
28	31.36	31.19	31.10	31.09	31.96	32.58	32.91	33.52	33.08	32.67	32.34	32.14
29	31.35	31.18	31.07	31.08	32.00	32.61	32.93	33.45	33.05	32.65	32.35	32.10
30	31.35	.....	31.07	31.11	32.02	32.62	32.96	33.49	33.05	32.64	32.33	32.08
31	31.36	.....	31.04	.....	32.08	.....	32.99	33.44	.....	32.62	.....	.....

5N.29.5.411 (*941, p. 245; 949, p. 315; 991, p. 271). A. R. Wallace. Measuring point beginning May 18, 1944, top east edge of 4-inch pipe set in concrete pump base, east side of pump, 0.83 foot above land-surface datum and 0.25 foot above concrete base.

5N.29.5.411. A. R. Wallace--Continued.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	38.58	May 18	40.39	Sept. 28	40.17
Mar. 27	38.24	Aug. 21	40.86	Dec. 4	39.50

5N.29.5.413 (*941, p. 245; *949, p. 315; *991, p. 271). A. R. Wallace. Water-stage recorder removed Nov. 23, 1943.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	32.04	May 19	32.17	Sept. 27	33.59
Mar. 27	31.79	Aug. 19	33.88	Dec. 4	32.98

5N.29.6.144. H. O. Thomas. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 109 feet. Measuring point, lower edge of Peerless pump base, northwest side, 1.00 foot above land-surface datum. Reference point, top of nail in Geological Survey washer in 2- by 2-inch stake, 54 feet northwest of well, 2.79 feet above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Nov. 22, 1943	24.13	May 18, 1944	24.11	Sept. 27, 1944	23.76
Jan. 23, 1944	23.45	Aug. 22	23.65	Dec. 5	23.95
Mar. 28	23.03				

5N.29.6.422. L. L. Poe. Drilled irrigation well, equipped with turbine pump, diameter 14 inches, depth 112 feet. Measuring point, top edge of north hole in east side of pump base, 0.22 foot above concrete pump base and 1.34 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Mar. 27, 35.82; Aug. 22, 39.05; Sept. 28, 37.28.

5N.29.7.141 (*991, p. 272). Elmer Phillips.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 23	30.57	May 18	30.78	Sept. 27	31.01
Mar. 28	30.77	Aug. 22	30.98	Dec. 5	31.23

5N.29.7.142 (*941, p. 246; 949, p. 316; 991, p. 272). Elmer Phillips.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 23	16.76	May 18	16.58	Sept. 27	17.23
Mar. 28	16.83	Aug. 22	16.80	Dec. 5	17.30

5N.29.7.143 (*941, p. 246; 949, p. 316; *991, p. 272). Elmer Phillips. Measuring point beginning Sept. 27, 1944, top edge of Geological Survey washer nailed in north upper edge of fence post across south side of well, 0.07 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 23	22.86	May 18	22.98	Sept. 27	23.05
Mar. 28	22.94	Aug. 20	21.79	Dec. 5	23.08

5N.29.7.221 (*941, p. 246; 949, p. 316; 991, p. 272). C. P. McBride.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 23	27.74	May 18	29.26	Sept. 27	28.38
Mar. 28	28.06	Aug. 19	28.49	Dec. 4	28.28

5N.29.7.242. C. P. McBride. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 85 feet. Measuring point, top edge of north $\frac{1}{2}$ -inch hole in west side of pump base, 0.14 foot above concrete base and 1.64 feet above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Date	Water level	Date	Water level	Date	Water level
Nov. 21, 1943	18.96	May 19, 1944	20.50	Sept. 27, 1944	19.19
Jan. 23, 1944	18.44	Aug. 20	19.55	Dec. 6	18.98
Mar. 28	18.50				

5N.29.8.114 (*941, p. 246; 949, p. 316; 991, p. 272). J. C. Davenport.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	24.76	Aug. 19	28.10	Dec. 4	25.46
Mar. 28	23.77	Sept. 27	25.88		

5N.29.8.232 (*941, p. 247; 949, p. 316; 991, p. 272). Joe Douglas.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	35.46	May 20	38.24	Sept. 27	38.42
Mar. 28	35.66	Aug. 21	40.04	Dec. 4	36.82

5N.29.8.412 (*941, p. 247; 949, p. 316; 991, p. 273). W. W. Kuykendall.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	29.54	May 20	33.16	Sept. 27	32.07
Mar. 28	29.53	Aug. 21	33.31	Dec. 4	30.94

5N.29.8.422a. Bill Dwight. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 105 feet. Measuring point, lower edge of base of pump, south side, 0.62 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Mar. 28	31.40	Aug. 21	34.47	Dec. 4	32.28
May 20	33.00	Sept. 27	33.14		

5N.29.9.400 (*941, p. 247; 949, p. 317; 991, p. 273). W. Y. Head.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	22.67	May 19	b 22.99	Sept. 27	a 23.66
Mar. 29	a 23.08	Aug. 20	a 23.82	Dec. 5	a 31.78

a Pumping.

b Pumping recently.

5N.29.13.121 (*941, p. 247; 949, p. 317; *991, p. 273; published incorrectly as 5N.29.13.113). Mrs. Shoat. Formerly owned by Emil Kirschenmann.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	78.45	May 18	77.92	Sept. 26	77.53
Mar. 29	78.05	Aug. 21	77.66	Dec. 3	77.34

5N.29.13.131 (*941, p. 247; *949, p. 317; *991, p. 273). Mrs. Shoat. Formerly owned by Emil Kirschenmann.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	58.46	May 18	53.08	Sept. 26	57.12
Mar. 29	57.88	Aug. 21	57.29	Dec. 3	56.88

5N.29.13.421 (*941, p. 247; published incorrectly as 5N. 29.13.142; *949, p. 317; 991, p. 273; published incorrectly as 5N.29.13.412). Mrs. Shoat. Formerly owned by Emil Kirschenmann. Measuring point beginning May 17, 1944, lower edge of Geological Survey washer nailed in 2- by 4-inch board, on top of 3- by 8-inch timber, north side of well, 0.13 foot below land-surface datum. Reference point No. 2, top surface of 3 $\frac{1}{2}$ - by 5- foot concrete engine base at southeast corner, 1.99 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	47.51	May 17	47.79	Sept. 26	47.39
Mar. 29	47.02	Aug. 21	48.07	Dec. 3	47.67

5N.29.15.311b (*991, p. 273). R. A. Tullis.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	19.07	May 18	19.23	Sept. 26	19.56
Mar. 29	19.14	Aug. 21	19.48	Dec. 3	19.67

5N.29.15.331 (*991, p. 273). R. A. Tullis.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	34.51	May 18	34.58	Sept. 26	34.53
Mar. 29	40.50	Aug. 21	34.62	Dec. 3	34.46

a Pumping.

5N.29.17.133 (*941, p. 248; 949, p. 317; 991, p. 274). W. W. Kuykendall. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 8, 32.09; Aug. 15, 35.08.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	32.35	32.21	32.10	33.09	.....	34.50	34.91	.....	34.49	34.00	33.71
2	.....	32.34	32.20	32.15	33.10	.....	34.51	34.91	34.86	34.47	33.98	33.70
3	.....	32.35	32.19	32.15	33.13	.....	34.54	34.91	34.83	34.45	33.98	33.68
4	.....	32.33	32.19	32.12	33.16	34.15	34.57	34.95	34.82	34.45	33.98	33.68
5	.....	32.33	32.17	32.12	33.16	34.15	34.59	34.96	34.80	34.42	33.94	33.67
6	.....	32.33	32.20	32.12	33.16	34.16	34.60	34.99	34.79	34.42	33.93	33.66
7	.....	32.32	32.22	32.12	33.17	34.14	34.61	35.01	34.75	34.41	33.92	33.65
8	.....	32.31	32.20	32.09	33.17	34.17	34.63	35.03	34.74	34.37	33.92	33.64
9	.....	32.29	32.19	32.10	33.18	34.19	34.66	35.03	34.70	34.36	33.91	33.64
10	.....	32.29	32.16	32.11	33.18	34.21	34.67	35.04	34.62	34.34	33.90	33.64
11	.....	32.33	32.16	32.15	33.20	34.26	34.68	35.04	34.61	34.33	33.90	33.63
12	.....	32.30	32.16	32.15	33.25	34.28	34.72	35.04	34.60	34.30	33.90	33.62
13	.....	32.28	32.15	32.14	33.27	34.29	34.73	35.07	34.58	34.28	33.88	33.62
14	.....	32.28	32.15	32.16	33.30	34.30	34.73	35.07	34.57	34.27	33.86	33.61
15	.....	32.28	32.14	32.20	33.38	34.33	34.74	35.08	34.57	34.24	33.86	33.61
16	.....	32.27	32.15	32.25	33.40	34.34	34.73	35.07	34.57	34.24	33.86	33.57
17	.....	32.27	32.14	32.26	33.42	34.34	34.73	35.07	34.58	34.23	33.85	33.55
18	.....	32.29	32.12	32.36	33.47	34.33	34.73	35.06	34.59	34.21	33.84	33.56
19	.....	32.29	32.14	32.41	33.52	34.31	34.72	35.06	34.59	34.21	33.83	33.53
20	.....	32.27	32.11	32.49	33.53	34.29	34.72	35.06	34.59	34.17	33.83	33.52
21	.....	32.25	32.13	32.52	33.53	34.29	34.73	35.06	34.59	34.17	33.80	33.52
22	.....	32.25	32.15	32.60	33.55	34.30	34.74	35.06	34.59	34.14	33.79	33.52
23	.....	32.24	32.14	32.72	33.56	34.33	34.75	35.05	34.59	34.13	33.78	33.50
24	32.37	32.24	32.10	32.81	33.57	34.35	34.77	35.04	34.58	34.12	33.75	33.49
25	32.38	32.23	32.10	32.84	33.58	34.37	34.79	35.04	34.58	34.12	33.75	33.49
26	32.35	32.22	32.11	32.90	33.60	34.40	34.80	35.04	34.57	34.11	33.76	33.48
27	32.37	32.23	32.10	32.98	33.60	34.40	34.82	34.98	34.55	34.11	33.76	33.48
28	32.39	32.23	32.11	33.00	33.66	34.42	34.83	34.96	34.54	34.08	33.73	33.47
29	32.37	32.22	32.12	33.07	.....	34.42	34.85	.....	34.51	34.03	33.72	33.46
30	32.37	.....	32.13	33.08	.....	34.44	34.87	.....	34.50	34.02	33.71	33.46
31	32.37	.....	32.10	.....	.....	.....	34.90	.....	.....	34.02	.....	33.46

5N.29.17.331 (*941, p. 248; 949, p. 317; 991, p. 274). L. V. Vaughn. Measuring point beginning Jan. 24, 1944, lower edge of discharge pipe. Subtract 4.21 feet from tape measurements to reduce to top of concrete base and 4.71 feet to reduce to land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	35.29	May 18	41.15	Sept. 27	42.45
Mar. 29	35.13	Aug. 19	47.40	Dec. 6	36.72

5N.29.18.213 (*941, p. 248; 949, p. 317; *991, p. 274). A. R. Wallace.

Water level, in feet below land-surface datum, 1944

Jan. 24	36.67	May 19	40.07	Sept. 27	39.68
Mar. 29	36.21	Aug. 20	41.56	Dec. 5	38.25

5N.29.18.233 (*941, p. 248; 949, p. 317; 991, p. 274). M. R. Wallace.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 24	46.32	Aug. 20	54.14	Dec. 5	47.70
Mar. 29	45.68	Sept. 27	52.00		

5N.29.18.433. Chas. Willis. Drilled irrigation well, diameter 12 inches, equipped with Layne pump. Measuring point, top of concrete curb, 1.00 foot above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Nov. 24, 1943	51.92	May 18, 1944	52.63	Sept. 27, 1944	53.84
Jan. 24, 1944	51.42	Aug. 21	54.78	Dec. 6	53.06
Mar. 29	51.03				

5N.29.18.444 (*941, p. 249; 949, p. 317; 991, p. 274). L. M. Head.

Water level, in feet below land-surface datum, 1944

Jan. 24	39.40	May 18	42.59	Sept. 27	44.00
Mar. 29	39.09	Aug. 19	46.14	Dec. 6	41.07

5N.29.19.244 (*941, p. 249; 949, p. 317; 991, p. 274). Lester McCasland.

Water level, in feet below land-surface datum, 1944

Jan. 25	48.79	May 20	53.31	Sept. 26	50.97
Mar. 29	a 49.90	Aug. 20	53.03	Dec. 6	49.97

a Nearby well pumping.

5N.29.20.131a (*991, p. 274). Jerry M. Thompson.

Water level, in feet below land-surface datum, 1944

Jan. 25	50.11	May 20	54.61	Dec. 6	51.26
Mar. 29	50.06	Sept. 26	52.19		

5N.29.20.131b (*991, p. 274). Jerry M. Thompson.

Water level, in feet below land-surface datum, 1944

Jan. 25	50.44	May 20	54.95	Sept. 26	52.52
Mar. 29	50.40	Aug. 20	53.61	Dec. 6	51.59

5N.29.20.133 (*991, p. 274). Welton Henry.

Water level, in feet below land-surface datum, 1944

Jan. 25	48.32	May 20	52.72	Sept. 26	50.29
Mar. 29	48.47	Aug. 20	51.36	Dec. 6	49.33

5N.29.20.314. Stanley Elliott. Drilled irrigation well, diameter 16 inches, depth 96 feet. Measuring point, small rectangular hole cut in center of bottom of inverted barrel over well, 1.77 feet above land-surface datum. Reference point, top of nail in center of 2- by 2-inch stake, driven flush with ground, 4.8 feet south of well, 1.12 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Mar. 28	51.42	Aug. 20	51.98	Dec. 6	52.23
May 20	51.51	Sept. 27	52.13		

5N.29.20.433b (*941, p. 249; *949, p. 317; 991, p. 275). D. J. Speed. Formerly owned by Spence E. Morris. Layne pump, powered with electric motor, installed over well Aug. 20, 1944. Measuring point beginning Aug. 20, top edge of west 3/4-inch hole on south side of pump, 0.10 foot above concrete base, and 0.85 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 25	47.99	May 20	49.80	Sept. 26	48.64
Mar. 28	48.12	Aug. 20	48.91	Dec. 6	48.67

5N.29.29.111 (*941, p. 250; 949, p. 318; 991, p. 275). C. A. Morrow. Water levels, in feet below land-surface datum, 1944: Jan. 25, 66.46; Mar. 28, 66.37; Sept. 26, 67.05; Dec. 6, 66.80.

5N.30.18.331. Jerry Thompson. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 75 feet. Measuring point, base of Layne-Bowler pump on west side, 1.27 feet above land-surface datum. Reference point, top of 2- by 2-inch stake, 45 feet northeast of well in east-west fence line and 90 feet east of center line of north-south section-line road, 1.64 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: May 18, 39.08; Aug. 19, 39.57; Sept. 26, 37.51; Dec. 3, 35.97.

5N.30.19.132a (*991, p. 275). Ralph Hendricks. Old pump removed and Layne turbine pump installed. Measuring point beginning May 17, 1944, top edge of south 3/4-inch hole in base of pump, on west side, 0.10 foot above concrete pump base and 0.56 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 25	26.17	May 17	26.51	Sept. 26	26.71
Mar. 29	26.25	Aug. 18	26.57	Dec. 3	26.56

5N.30.19.313 (*941, p. 250; 949, p. 318; *991, p. 275). Ralph Hendricks. Old pump removed and Peerless pump installed. Measuring point destroyed. New measuring point beginning May 17, 1944, top edge of Geological Survey washer nailed in top east edge of west 6 1/2- by 7 1/2-inch timber pump support, 1.4 feet north of pump, and 1.55 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 25	16.54	May 17	18.61	Sept. 26	a 17.93
Mar. 29	17.13	Aug. 18	17.90	Dec. 3	17.83

a Nearby well pumping.

5N.30.20.333 (*941, p. 250; 949, p. 318; 991, p. 275). Emil Kirschenmann.

Water level, in feet below land-surface datum, 1944

Jan. 25	19.28	May 17	19.68	Sept. 26	a 21.05
Mar. 29	19.51	Aug. 18	20.24	Dec. 3	a 21.43

a Pumping.

5N.30.31.442. T. W. Coleman. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 129 feet. Measuring point, top edge of 2 1/4-inch hole inside of pump case on north side, 0.05 foot above concrete pump base, 0.88 foot above land-surface datum. Reference point, top of nail holding Geological Survey washer in top of 2- by 2-inch stake about 1 foot southwest of yucca clump 65 feet north of well, 0.79 foot above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Nov. 24, 1943	99.90	May 17, 1944	99.55	Sept. 26, 1944	99.35
Jan. 25, 1944	99.77	Aug. 18	99.37	Dec. 3	99.26

6N.28.13.232. Irwin Estate. Unused drilled irrigation well. Measuring point, land surface at well. Water levels, in feet below land-surface datum, 1944: Mar. 27, 62.02; May 19, 61.86; Aug. 22, 61.80; Sept. 28, 61.87.

6N.28.24.233. Byers Irwin. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 131 feet. Measuring point, top south rolled edge of 2-inch pipe set flush in concrete pump base, 1.05 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Mar. 27, 77.97; May 19, 79.02; Aug. 22, 79.37; Sept. 28, 78.71.

6N.28.24.423 (*991, p. 275). Raymond J. Ferry.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 23	62.92	May 19	62.86	Sept. 28	63.15
Mar. 27	62.86	Aug. 22	63.21		

6N.28.25.411. Travis Dickson. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 116 feet. Measuring point, top edge of north $\frac{1}{2}$ -inch hole in east side of Peerless pump base, 0.17 foot above concrete pump base and 0.47 foot above land-surface datum. Reference point, top of nail holding Geological Survey washer in top of 2- by 2-inch stake, 1 foot southeast of corner post which is 15 yards northwest of well, and 2.09 feet above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Nov. 22, 1943	52.17	May 20, 1944	56.62	Sept. 28, 1944	52.95
Jan. 23, 1944	52.37	Aug. 22	53.99	Dec. 6	52.46
Mar. 27	51.87				

6N.29.27.332. Capt. S. W. Stribling. Drilled irrigation well, to be equipped with turbine pump, diameter 16 inches, depth 181 feet. Measuring point, lower edge of board over well, at land-surface datum. Reference point, head of nail in top of 2- by 2-inch stake driven flush with ground, 25 feet southeast of well, 0.06 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Mar. 29	44.33	Aug. 21	44.21	Dec. 4	44.24
May 19	44.29	Sept. 28	44.32		

6N.29.30.112 (*941, p. 250; 949, p. 318; 991, p. 275). R. W. Dean.

Water level, in feet below land-surface datum, 1944

Jan. 23	48.53	May 19	48.79	Sept. 28	48.82
Mar. 27	a 48.69	Aug. 22	a 49.06	Dec. 6	48.73

a Nearby well pumping.

6N.29.30.113 (*941, p. 250; 949, p. 318; 991, p. 275). R. W. Dean.

Water level, in feet below land-surface datum, 1944

Jan. 23	51.70	May 19	51.82	Sept. 28	51.87
Mar. 27	51.76	Aug. 22	51.78	Dec. 6	51.86

6N.29.31.114 (*941, p. 250; 949, p. 318; 991, p. 276). Clyde Kuykendall. Formerly owned by L. M. McDaniels. New Peerless pump installed. Measuring point beginning Mar. 27, 1944, lower edge of pump base, east side of well, 0.37 foot above concrete pump base, 1.12 feet above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 23	38.65	May 20	41.30	Sept. 28	39.31
Mar. 27	38.52	Aug. 22	41.42	Dec. 6	38.63

6N.29.31.122. G. H. Griggs. Drilled irrigation well, equipped with turbine pump, diameter 16 inches, depth 106 feet. Measuring point, top edge of north $\frac{1}{2}$ -inch hole in west side of Peerless pump base, 0.28 foot above concrete pump base and 0.95 foot above land-surface datum. Reference point, top of nail holding Geological Survey washer in top of 2- by 2-inch stake, 2 feet south of corner post where north-south quarter-section-line fence joins east-west section-line fence on south side of road, 60 feet northwest of well. Reference point is 0.99 foot above land-surface datum.

Water level, in feet below land-surface datum, 1943-44

Nov. 22, 1943	53.15	May 19, 1944	54.23	Sept. 28, 1944	54.14
Jan. 23, 1944	53.57	Aug. 22	54.66	Dec. 6	a 53.19
Mar. 27	53.46				

a Measurement uncertain.

6N.29.33.131 (*991, p. 276). Frank Morrow.

Water level, in feet below land-surface datum, 1944					
Date	Water level	Date	Water level	Date	Water level
Jan. 24	54.26	May 19	56.38	Dec. 4	54.57
Mar. 29	54.83	Sept. 28	55.32		

a Pumping recently.

7N.28.9.342. W. B. Giles. Drilled irrigation well, to be equipped with turbine pump, diameter 16 inches, depth 110 feet. Measuring point, top of notch in west side of casing, 0.17 foot above concrete pump base and 1.00 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Mar. 27, 26.32; May 19, 26.37; Sept. 28, 25.70.

7N.28.35.333. Dayton Harris. Drilled stock well, to be equipped with windmill, diameter 6 inches, depth 154 feet. Measuring point, top center of inverted nail keg, set in circular concrete well curb, 0.58 foot above land-surface datum and 0.03 foot below concrete well curb. Water levels, in feet below land-surface datum, 1944: May 19, 129.82; Sept. 28, 129.70.

ROOSEVELT COUNTY (PORTALES VALLEY)

By C. R. Murray

Water-level measurements were continued in observation wells in Portales Valley in 1944 in cooperation with the State engineer of New Mexico. Data were obtained for estimating the quantity of water pumped and the acreage irrigated. Investigation of the ground-water resources of Portales Valley was begun by Charles V. Theis in 1931, and data obtained have been published in the 10th to 13th biennial reports of the State engineer and in Geological Survey Water-Supply Papers 845, 886, 911, 941, 949, and 991.

Water levels were measured in 173 wells in January, 52 in March, 51 in May, 50 in August, 55 in September, and 54 in November or December, making a total of 435 measurements for the year. Recorders were maintained on 3 wells throughout the year and on the Trout well, 2.34.2.233, until April 2. The January measurements show the yearly change in the quantity of ground water in storage in the valley, the bimonthly measurements show seasonal changes in the position of the water table, and the water-stage recorders give a continuous record of water-level fluctuations.

Fluctuations in water level

The United States Weather Bureau recorded 12.75 inches of precipitation at Portales in 1944. This was considerably more than the 8.45 inches recorded in 1943 but was still 5.32 inches below normal. Fortunately 9.88 inches of the precipitation fell from April to September when it could be

used by growing crops to partially fulfill their water needs. It is estimated that about 20,500 acres of land was irrigated in Portales Valley in 1944 and that about 41,000 acre-feet of water was pumped for irrigation. Estimates of acreage irrigated for the years 1941-43 were 15,000, 15,700 and 17,000 acres, respectively, and for the water pumped, 9,750, 23,500, and 45,000 acre-feet.

Water levels declined in nearly all of the irrigated area in Portales Valley in 1944 as shown by figure 14. The amount of decline was considerably less, however, than in 1943. The largest decline took place, as in previous years, along an elliptical area having a northwest-southeast axis passing through Portales, but two areas, totaling about 3 square miles, along this axis showed rises in water levels. One of these centered around sec. 14, T. 2 S., R. 35 E., about 7 miles southeast of Portales, and the other around sec. 35, T. 2 S., R. 36 E., a mile southeast of Arch. Both of these are transpiration areas, the depth to water being slight; heavy precipitation immediately preceding the January measurements probably accounted for much of the indicated rise. The area surrounding Portales in which declines exceeded 1 foot amounted to only about 50 square miles, whereas declines in excess of 1 foot took place over about 120 square miles in 1943. Three small isolated areas, extending northwest of Portales and totaling about 7.5 square miles, showed declines in excess of 2 feet, the maximum being 2.52 feet. In 1943, declines in excess of 2 feet took place over an area of about 60 square miles, in excess of 3 feet over 30 square miles, in excess of 4 feet over 14 square miles, and in excess of 5 feet over $4\frac{1}{2}$ square miles, the maximum being 6.13 feet. Declines along Blackwater Draw, north of Portales, were generally less than 1 foot in 1944 but two wells equipped with windmills showed declines of 1.0 foot and 1.5 feet.

In January 1944 water levels were considerably below their January 1943 positions, but because of the heavier precipitation and reduced quantity of water pumped, the seasonal lowering of the water table during the summer of 1944 was much less than in 1943, and as the rate at which recovery took place in the fall of 1944 was more rapid than in 1943, water levels by the end of 1944 were approaching the levels at which they had started the year.

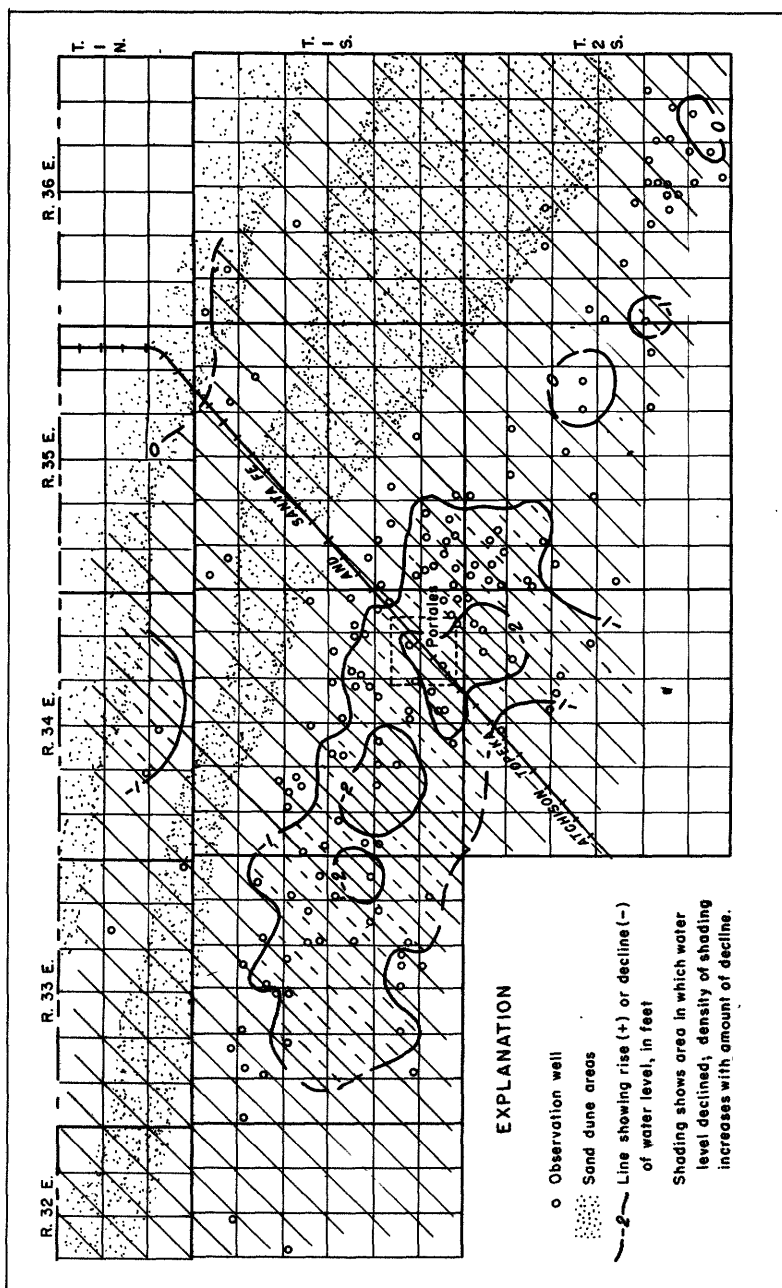


Figure 14.—Map of Portales Valley, Roosevelt County, N. Mex., showing change in water level from January 1944 to January 1945.

Water-level measurements

1N.32.7.300 (*845, p. 249; 886, p. 453; 911, p. 222; 941, p. 255; 949, p. 322; 991, p. 280). W. J. Greshaw.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	15.21	May 11	14.68	Sept. 23	a 17.07
Mar. 20	14.93	Aug. 2	16.19	Dec. 3	a 16.02

a Pumping.

1N.33.16.100a (*941, p. 255; *949, p. 322; *991, p. 280). Mr. Hardwick. Water level, in feet below land-surface datum, 1944: Jan. 18, 20.67.

1N.33.16.100c (*991, p. 280). Mr. Hardwick. Water level, in feet below land-surface datum, 1944: Jan. 18, 21.32.

1N.33.26.120 (*886, p. 453; 911, p. 222; 941, p. 255; 949, p. 322; 991, p. 280). Mary E. Miller. Water level, in feet below land-surface datum, 1944: Jan. 18, 4.31 (pumping).

1N.33.36.400c (*845, p. 250; *886, p. 453; *911, p. 222; 941, p. 255; 949, p. 322; 991, p. 280). A. C. Woodburn. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Feb. 27, and 28, 0.54; Aug. 23, 3.11.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.74	0.81	0.69	....	1.12	....	....	....	2.62	1.87	1.67	1.79
2	.77	.83	.68	....	1.17	....	....	2.77	2.69	1.84	1.70	1.75
3	.80	.90	.71	....	1.29	....	....	2.79	2.71	1.88	1.74	1.54
4	.82	.87	.80	....	1.30	....	....	2.80	2.63	1.87	1.72	1.39
5	.86	.89	.78	.93	1.28	....	....	2.82	2.62	1.96	1.72	1.35
6	.84	.91	.88	.94	1.34	....	....	2.83	2.60	2.03	1.70	1.35
7	.84	.88	....	1.00	1.38	....	....	2.84	2.62	2.11	1.73	1.37
8	.93	.90	....	1.00	1.49	....	....	2.85	2.65	2.08	1.79	1.39
9	.93	.85	....	1.03	1.43	....	....	2.87	2.68	2.09	1.82	1.41
10	.94	.96	....	1.02	1.34	1.59	....	2.90	2.71	2.13	1.82	1.49
11	.97	.98	....	1.08	1.33	1.35	....	2.91	2.69	2.16	1.83	1.51
12	1.01	.96	....	1.08	.97	1.26	....	2.82	2.65	2.14	1.84	1.53
13	.97	.91	....	1.09	.86	1.40	....	2.81	2.68	2.15	1.85	1.53
14	.96	.93	.93	1.16	.91	1.54	....	2.85	2.70	2.18	1.88	1.51
15	.94	.93	.94	1.20	1.02	1.63	....	2.93	2.76	2.24	1.89	1.52
16	.94	.91	.94	1.16	1.13	....	....	2.98	2.78	2.20	1.88	1.51
17	.91	.91	.93	1.22	1.24	....	....	3.03	2.79	2.19	1.83	1.51
18	.91	.97	.98	1.23	1.31	....	....	3.06	2.74	2.21	1.78	1.58
19	.90	.94	.93	1.22	1.37	....	....	3.04	2.74	1.94	1.79	1.56
20	.86	.90	.92	1.21	1.43	....	....	3.05	2.77	1.94	1.83	1.54
21	.86	.88	1.00	1.26	1.50	....	....	3.07	2.82	2.01	1.83	1.55
22	.89	.94	1.07	1.24	1.49	....	....	3.09	2.85	2.05	1.82	1.54
23	.81	.94	.98	1.25	1.58	....	....	3.11	2.86	2.07	1.78	1.55
24	.81	.85	.99	1.24	1.64	....	....	2.71	2.51	2.10	1.59	1.55
25	.87	.85	1.03	1.26	1.72	....	....	2.42	2.23	2.12	1.63	1.56
26	.78	.95	1.05	1.35	1.67	....	....	2.39	2.13	1.80	1.74	1.51
27	.82	.54	1.07	1.34	1.49	....	....	2.38	1.85	1.65	1.73	1.51
28	.88	.54	1.10	1.05	1.47	....	....	2.35	1.80	1.63	1.74	1.37
29	.88	.66	....	.87	1.53	....	....	2.37	1.77	1.62	1.77	1.32
30	.90	....	....	1.04	1.65	....	....	2.45	1.81	1.62	1.77	1.33
31	.92	....	....	....	1.65	....	2.19	2.55	....	1.65	....	1.34

1N.33.36.400b (*845, p. 250; 886, p. 453; *911, p. 222; 941, p. 256; 949, p. 323; 991, p. 281). A. C. Woodburn.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 18	4.37	May 11	a 8.90	Sept. 23	b 6.33
Mar. 21	4.45	Aug. 1	6.05	Dec. 1	5.25

a Pumping.

b Pumping recently.

1N.34.29.444 (*886, p. 453; 911, p. 222; 941, p. 256; 949, p. 323; 991, p. 281). J. N. Tefertiller. Water level, in feet below land-surface datum, 1944: Jan. 20, 13.43.

1N.34.33.224 (*886, p. 453; 911, p. 222; 941, p. 256; 949, p. 323; 991, p. 281). Mrs. Lee Garrett. Water level, in feet below land-surface datum, 1944: Jan. 20, 15.13.

1N.34.35.432 (*886, p. 453; 911, p. 222; 941, p. 256; 949, p. 323; 991, p. 281). Earl McCollum. Measuring point beginning Jan. 20, 1944, top of 4-inch casing, northeast side of well, at land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 20, 22.88.

1.31.1.222. Mr. Lee. Drilled irrigation well, equipped with turbine pump. Measuring point, lower edge of mouth of discharge pipe. Subtract 4.60 feet from tape measurement to reduce to land-surface datum. Reference point, top of concrete pump base, 0.76 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Aug. 18, 76.41; Sept. 23, 76.79 (nearby well pumping); Dec. 3, 75.69.

1.32.3.440 (*845, p. 251; 886, p. 453; 911, p. 223; 941, p. 256; 949, 323; 991, p. 281). M. Nail.

Water level, in feet below land-surface datum, 1944

Jan. 19	30.09	May 11	30.79	Sept. 23	31.03
Mar. 20	30.03	Aug. 2	a 35.68	Dec. 1	30.88

a Pumping recently.

1.32.14.432. Robert Morrison. Drilled irrigation well, equipped with turbine pump, diameter 12 inches, depth 104 feet. Measuring point, top edge of $\frac{3}{4}$ -inch hole in northeast side of pump base, 0.07 foot above concrete pump base and 0.57 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Sept. 23, 45.43; Dec. 1, 43.89.

1.32.15.111 (*911, p. 223; 941, p. 256; 949, p. 323; 991, p. 281). Mrs. J. P. Nash.

Water level, in feet below land-surface datum, 1944

Jan. 19	41.98	May 11	41.94	Sept. 23	42.06
Mar. 20	41.86	Aug. 2	41.96	Dec. 1	42.06

1.33.5.432 (*845, p. 252; *886, p. 454; 911, p. 223; 941, p. 256; 949, p. 323; 991, p. 281). Clay Jones. Water level, in feet below land-surface datum, 1944: Jan. 19, 14.73.

1.33.7.111 (*911, p. 223; 941, p. 256; 949, p. 323; 991, p. 281). E. L. Sisk.

Water level, in feet below land-surface datum, 1944

Jan. 19	14.27	May 11	16.17	Dec. 1	15.21
Mar. 20	14.39	Sept. 23	15.91		

1.33.7.211. A. Q. Smith. Used drilled irrigation well, equipped with turbine pump, diameter 20 inches, depth 88 feet. Measuring point, top edge of east $\frac{3}{4}$ -inch hole in north side of Peerless pump base, 0.20 foot above concrete pump base and 0.80 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: May 11, 14.83.

1.33.8.112 (*845, p. 252; *886, p. 454; 911, p. 223; *941, p. 256; *949, p. 323; 991, p. 281). A. Q. Smith. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.31.

1.33.8.311 (*886, p. 454; 911, p. 223; 941, p. 256; *949, p. 324; 991, p. 281). E. E. Marcus. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.80.

1.33.9.111 (*886, p. 454; *911, p. 223; 941, p. 256; 949, p. 324; 991, p. 281). Earl Plank. Water level, in feet below land-surface datum, 1944: Jan. 19, 15.15.

1.33.9.442 (*845, p. 253; 886, p. 454; 911, p. 223; 941, p. 256; 949, p. 324; 991, p. 281). John Adams. Water level, in feet below land-surface datum, 1944: Jan. 19, 15.78.

1.33.10.211 (*886, p. 454; 911, p. 223; 941, p. 256; 949, p. 324; 991, p. 281). O. B. Sherman. Water level, in feet below land-surface datum, 1944: Jan. 19, 20.24.

1.33.10.313 (*845, p. 253; *886, p. 454; 911, p. 223; 941, p. 256; 949, p. 324; 991, p. 281). Jim Allen.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	17.29	May 11	a 20.62	Sept. 23	a 31.28
Mar. 20	17.09	Aug. 2	19.77	Dec. 1	18.79

a Nearby well pumping recently.

1.33.11.312 (*845, p. 253; *886, p. 454; 911, p. 223; *941, p. 256; *949, p. 324; 991, p. 282). C. F. Williams. Water level, in feet below land-surface datum, 1944: Jan. 19, 20.32.

1.33.12.144 (*845, p. 253; 886, p. 454; *911, p. 223; 941, p. 257; 949, p. 324; 991, p. 282). A. C. Woodburn. Water levels, in feet below land-surface datum, 1944: Jan. 18, 29.99; Mar. 21, 30.08.

1.33.13.111 (*845, p. 254; 886, p. 455; 911, p. 254; *941, p. 257; 949, p. 324; *991, p. 282). E. Elkins. Water level, in feet below land-surface datum, 1944: Jan. 20, 20.12.

1.33.13.431 (*845, p. 254; 886, p. 455; 911, p. 224; *941, p. 257; 949, p. 324; 991, p. 282). Buddie Black. Water level, in feet below land-surface datum, 1944: Jan. 20, 22.91.

1.33.14.131 (*845, p. 254; *886, p. 455; 911, p. 224; 941, p. 257; 949, p. 324; 991, p. 282). J. V. Miller. No measurements made in 1944.

1.33.14.311 (*845, p. 254; 886, p. 455; 911, p. 224; 941, p. 257; *949, p. 324; 991, p. 282). Claude Elder. Water level, in feet below land-surface datum, 1944: Jan. 19, 17.29.

1.33.14.331 (*845, p. 254; 886, p. 455; 911, p. 224; 941, p. 257; 949, p. 324; *991, p. 282). Claude Elder. Water levels, in feet below land-surface datum, 1944: Jan. 19, 17.15; Mar. 20, 16.95.

1.33.14.331c. D. A. Alexander. Drilled irrigation well, equipped with Layne-Bowler turbine pump, powered with electric motor. Measuring point, top edge of 1-inch hole on side of pump base, 0.12 foot above concrete pump base, and 1.69 feet above land-surface datum. This datum is the same as that used for well 1.33.14.331b in which measurements were discontinued in 1943. Water levels, in feet below land-surface datum, 1944: Aug. 7, 24.38; Sept. 23, 22.73; Dec. 1, 19.75.

1.33.14.421 (*845, p. 255; 886, p. 455; 911, p. 224; 941, p. 257; 949, p. 324; 991, p. 282). Leon Jones. Water level, in feet below land-surface datum, 1944: Jan. 20, 20.23.

1.33.15.212 (#845, p. 255; #886, p. 455; 911, p. 224; 941, p. 257; #949, p. 324; 991, p. 282). O. D. Minick. Water level, in feet below land-surface datum, 1944: Jan. 19, 17.21.

1.33.16.222 (#941, p. 257; 949, p. 325; 991, p. 282). Bethel Church.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 18	13.80	May 11	14.26	Sept. 23	15.74
Mar. 20	13.81	Aug. 2	15.27	Dec. 1	15.52

1.33.17.221 (#845, p. 255; 886, p. 455; #911, p. 224; #941, p. 257; 949, p. 325; 991, p. 282). R. F. Campbell.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	13.06	May 11	13.26	Sept. 23	14.23
Mar. 20	13.04	Aug. 4	13.67	Dec. 1	14.32

1.33.23.311 (#845, p. 255; #886, p. 455; 911, p. 224; 941, p. 257; #949, p. 325; 991, p. 283). Dan H. Smith. Water level, in feet below land-surface datum, 1944: Jan. 19, 20.91.

1.33.23.433 (#845, p. 255; 886, p. 455; 911, p. 224; 941, p. 257; 949, p. 325; 991, p. 283). Dr. H. A. Miller. Water level, in feet below land-surface datum, 1944: Jan. 19, 20.18.

1.33.24.111 (#845, p. 255; 886, p. 455; 911, p. 224; #941, p. 257; #949, p. 325; 991, p. 283). J. E. Dictson. Water level, in feet below land-surface datum, 1944: Jan. 20, 23.62.

1.33.24.433 (#845, p. 256; #886, p. 455; 911, p. 224; 941, p. 258; 949, p. 325; 991, p. 283). J. E. Jones. Water level, in feet below land-surface datum, 1944: Jan. 20, 20.57.

1.33.26.221 (#845, p. 256; 886, p. 455; 911, p. 224; 941, p. 258; 949, p. 325; 991, p. 283). D. E. Thomas. Water level, in feet below land-surface datum, 1944: Jan. 19, 20.03.

1.33.26.331 (#845, p. 256; 886, p. 455; 911, p. 224; 941, p. 258; 949, p. 325; 991, p. 283). C. G. Norton. Water level, in feet below land-surface datum, 1944: Jan. 20, 25.21.

1.33.27.311 (#941, p. 258; 949, p. 325; 991, p. 283). Joseph A. Henley. Water level, in feet below land-surface datum, 1944: Jan. 20, 38.33.

1.33.27.411 (#991, p. 283). W. W. McClary. Water level, in feet below land-surface datum, 1944: Jan. 20, 29.50.

1.33.27.421 (#991, p. 283). Luther Cooper. Water level, in feet below land-surface datum, 1944: Jan. 20, 25.81.

1.33.28.311 (#886, p. 456; 911, p. 224; 941, p. 258; 949, p. 325; 991, p. 283). Gloria Fay Richardson.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	40.56	May 11	40.73	Sept. 23	41.74
Mar. 20	40.60	Aug. 3	42.17	Dec. 1	41.90

1.33.29.333 (#911, p. 225; 941, p. 258; 949, p. 325; 991, p. 283). M. H. Rea.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	31.03	May 11	31.29	Sept. 23	31.83
Mar. 20	31.03	Aug. 3	31.62	Dec. 1	30.91

1.33.30 (#845, p. 257; 886, p. 456; 911, p. 225; 941, p. 258; 949, p. 325; 991, p. 283). Joe S. Lewis. Water above land-surface. No measurements made in 1944.

1.33.34.211 (*886, p. 456; 911, p. 225; 941, p. 250; 949, p. 326; 991, p. 283). R. T. Bilberry. Formerly owned by John E. Plummer. Measuring point, beginning Sept. 25, 1944, top edge of square hole inside Johnson pump case, north side of pump, 0.15 foot above concrete pump base, and 4.15 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Jan. 20, 21.99; Mar. 20, 21.75; Sept. 23, 24.86; Dec. 1, 23.25.

1.33.36.131 (*845, p. 257; 886, p. 456; 911, p. 225; 941, p. 258, published incorrectly in previous reports as 1.33.36.133; 949, p. 326; 991, p. 283). Edwin Johnson. Water level, in feet below land-surface datum, 1944: Jan. 20, 33.60.

1.34.8.434 (*845, p. 257; 886, p. 456; 911, p. 225; 941, p. 258; 949, p. 326; 991, p. 283). Bob Ledbetter. Water level, in feet below land-surface datum, 1944: Jan. 21, 30.48.

1.34.13.412 (*886, p. 456; 911, p. 225; 941, p. 258; 949, p. 326; 991, p. 284). Ben Donathan.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 22	51.50	May 12	51.46	Sept. 23	51.53
Mar. 21	51.45	Aug. 6	51.43	Dec. 1	51.55

1.34.16.422 (*911, p. 225; 941, p. 258; 949, p. 326; 991, p. 284). R. E. White.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	44.00	May 11	43.66	Sept. 23	44.23
Mar. 21	43.74	Aug. 7	44.18	Dec. 1	44.12

1.34.17.111 (*845, p. 258; *886, p. 456; 911, p. 225; 941, p. 258; 949, p. 326; 991, p. 284). Mrs. Ruth Culpitt. Water level, in feet below land-surface datum, 1944: Jan. 21, 31.00.

1.34.17.122 (*845, p. 258; *886, p. 456; 911, p. 225; 941, p. 258; 949, p. 326; 991, p. 284). Bob Ledbetter. Water level, in feet below land-surface datum, 1944: Jan. 21, 30.41.

1.34.17.233 (*845, p. 258; 886, p. 457; 911, p. 225; 941, p. 259; 949, p. 326; 991, p. 284). L. E. Allison.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	28.68	May 11	28.70	Sept. 23	31.38
Mar. 21	28.33	Aug. 7	34.54	Dec. 1	29.32

1.34.17.241 (*845, p. 258; *886, p. 457; 911, p. 225; *941, p. 259; 949, p. 326; 991, p. 284). E. F. Ray. Water level, in feet below land-surface datum, 1944: Jan. 21, 25.83.

1.34.18.133 (*991, p. 284). J. E. Tucker. Water level, in feet below land-surface datum, 1944: Jan. 20, 27.25.

1.34.18.343 (*845, p. 258; *886, p. 457; 911, p. 225; 941, p. 259; 949, p. 326; 991, p. 284). J. W. Terry. Water level, in feet below land-surface datum, 1944: Jan. 20, 25.31.

1.34.19.223 (*845, p. 258; *886, p. 457; 911, p. 225; 941, p. 259; 949, p. 326; 991, p. 284). A. H. Keswater. Water level, in feet below land-surface datum, 1944: Jan. 21, 23.42.

1.34.19.341 (*941, p. 259; 949, p. 326; *991, p. 284). Floyd Horne. Water level, in feet below land-surface datum, 1944: Jan. 20, 21.78.

1.34.21.121 (*845, p. 259; *886, p. 457; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 284). L. H. Lee. Water level, in feet below land-surface datum, 1944: Jan. 22, 31.02.

1.34.21.141 (*845, p. 259; *886, p. 457; 911, p. 226; *941, p. 259; 949, p. 326; 991, p. 284). Douglas Owen. Water level, in feet below land-surface datum, 1944: Jan. 22, 30.95.

1.34.21.222 (*845, p. 259; *886, p. 457; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 284). Elizabeth Tipton. No measurements made in 1944.

1.34.22.131 (*845, p. 259; 886, p. 457; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 284). Mrs. W. E. Jergins. Water level, in feet below land-surface datum, 1944: Jan. 21, 33.69.

1.34.22.222 (*845, p. 260; 886, p. 457; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 285). Mrs. A. J. Goodwin.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	39.26	May 11	39.55	Sept. 23	38.16
Mar. 21	39.48	Aug. 7	39.70	Dec. 1	38.22

1.34.22.421 (*886, p. 458; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 285). R. C. Grunig. Water level, in feet below land-surface datum, 1944: Jan. 21, 33.84.

1.34.22.443 (*845, p. 260; *886, p. 458; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 285). Mabel Jernigan. Water level, in feet below land-surface datum, 1944: Jan. 21, 31.19.

1.34.23.211 (*845, p. 260; 886, p. 458; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 285). Pope Long. Measuring point beginning Jan. 22, 1944, lip of 3/4-inch hole on inside of pump shell on south side, 0.33 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 22, 37.82.

1.34.23.311 (*845, p. 260; *886, p. 458; 911, p. 226; 941, p. 259; 949, p. 326; 991, p. 285). J. R. Mahaffey. Water level, in feet below land-surface datum, 1944: Jan. 21, 32.37.

1.34.23.313a (*845, p. 261; 886, p. 458; 911, p. 226; 941, p. 259; 949, p. 327; 991, p. 285). R. E. McDonald.

Water level, in feet below land-surface datum, 1944

Jan. 21	31.82	May 11	31.36	Sept. 23	34.93
Mar. 21	31.22	Aug. 7	34.29	Dec. 1	33.61

1.34.23.422 (*845, p. 261; *886, p. 458; 911, p. 226; 941, p. 259; 949, p. 327; 991, p. 285). E. L. Yandell. Water level, in feet below land-surface datum, 1944: Jan. 22, 30.20.

1.34.23.442a (*941, p. 260; 949, p. 327; 991, p. 285). Sam B. Fletcher. Water level, in feet below land-surface datum, 1944: Jan. 22, 30.91.

1.34.24.243 (*845, p. 261; *886, p. 458; 911, p. 226; 941, p. 260; 949, p. 327; 991, p. 285). J. T. Gorrell. Water level, in feet below land-surface datum, 1944: Jan. 22, 43.45.

1.34.24.312a (*991, p. 285). W. A. Cummings. Water level, in feet below land-surface datum, 1944: Jan. 22, 31.42.

1.34.25.200 (*845, p. 262; 886, p. 458; 911, p. 227; 941, p. 261; 949, p. 327; 991, p. 285). J. B. H. Young and Smith Feed Pens. Water level, in feet below land-surface datum, 1944: Jan. 22, 32.67 (pumping).

1.34.25.211 (*845, p. 261; *886, p. 458; *911, p. 227; 941, p. 260; 949, p. 327; 991, p. 285). J. B. H. Young. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Mar. 31, 34.72; Sept. 22-26, 36.80.

1.34.25.211. J. B. H. Young--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	35.22	35.01	.....	34.73	34.95	35.48	36.01	36.40	36.77	36.75	36.60	.....
2	35.22	35.00	.....	34.77	34.95	35.50	36.02	36.41	36.78	36.74	36.60	36.23
3	35.22	35.00	.....	34.76	35.00	35.50	36.04	36.42	36.77	36.73	36.60	36.21
4	35.23	34.97	.....	34.74	35.01	35.56	36.06	36.44	36.77	36.73	36.60	36.21
5	35.22	34.97	.....	34.75	35.00	35.60	36.07	36.45	36.79	36.73	36.59	36.21
6	35.19	34.97	.....	34.74	34.99	35.65	36.10	36.44	36.79	36.72	36.59	36.21
7	35.19	34.97	.....	34.75	34.99	35.63	36.12	36.45	36.78	36.72	36.59	36.20
8	35.20	.....	.....	34.75	35.02	35.65	36.14	36.49	36.78	36.72	36.59	36.19
9	35.17	34.97	.....	34.75	35.03	35.68	36.15	36.49	36.76	36.71	36.56	36.19
10	35.17	34.99	.....	34.75	35.05	35.69	36.17	36.52	36.77	36.71	36.53	36.17
11	35.17	.....	.....	34.79	35.07	35.68	36.19	36.54	.....	36.71	36.53	36.17
12	35.17	.....	.....	34.78	35.09	35.70	36.18	36.56	.....	36.70	36.53	36.17
13	35.17	.....	.....	34.77	35.09	35.71	36.20	36.57	.....	36.69	36.53	36.16
14	35.17	.....	.....	34.79	35.09	35.72	36.21	36.61	.....	36.69	36.53	36.15
15	35.17	.....	.....	34.83	35.07	35.73	36.22	36.60	.....	36.70	36.52	36.14
16	35.17	.....	.....	34.84	35.07	35.73	36.23	36.63	.....	36.70	36.52	36.13
17	35.17	.....	.....	34.85	35.08	35.75	36.24	36.65	.....	36.69	36.52	36.13
18	35.16	.....	.....	34.89	35.09	35.77	36.25	36.66	.....	36.69	36.51	36.15
19	35.16	.....	.....	34.90	35.11	35.78	36.25	36.66	.....	36.67	36.51	36.14
20	35.12	.....	.....	34.92	35.13	35.80	36.25	36.70	.....	36.67	36.51	36.13
21	35.12	.....	34.75	34.94	35.14	35.82	36.26	36.70	.....	36.67	36.51	36.11
22	35.12	.....	.....	34.96	35.15	35.85	36.26	36.72	36.80	36.67	36.50	36.10
23	35.09	.....	.....	.....	35.19	35.86	36.28	36.72	36.80	36.67	.....	36.09
24	35.09	.....	.....	.....	35.22	35.87	36.29	36.72	36.80	36.67	.....	36.08
25	35.05	.....	.....	.....	35.27	35.88	36.30	36.75	36.80	36.66	.....	36.08
26	35.01	.....	34.74	.....	35.32	35.91	36.32	36.75	36.80	36.66	.....	36.07
27	35.05	.....	34.74	.....	35.36	35.93	36.33	36.75	36.79	36.64	.....	36.07
28	35.05	.....	34.75	.....	35.39	35.96	36.34	36.77	36.79	36.64	.....	36.06
29	.....	.....	34.74	.....	35.40	35.98	36.35	36.78	36.75	36.63	.....	36.05
30	.....	.....	34.73	.....	35.43	35.99	36.36	36.80	36.75	36.61	36.25	36.04
31	35.01	.....	34.72	.....	35.45	.....	36.38	36.77	.....	36.61	.....	36.03

1.34.26.400 (*911, p. 227; 941, p. 261; 949, p. 327; 991, p. 286).
Water level, in feet below land-surface datum, 1944: Jan. 22, 28.21.1.34.27.211 (*845, p. 263; 886, p. 459; 911, p. 227; 941, p. 261;
949, p. 328; 991, p. 286). J. F. Bowman. Water level, in feet below
land-surface datum, 1944: Jan. 22, 29.02.1.34.27.331 (*886, p. 459; 911, p. 227; 941, p. 261; 949, p. 328;
991, p. 286). Lewis Kirby. Water level, in feet below land-surface
datum, 1944: Jan. 22, 26.15.1.34.27.341 (*845, p. 263; *886, p. 459; 911, p. 227; 941, p. 261;
949, p. 328; 991, p. 286). L. O. Dunn. Water level, in feet below land-
surface datum, 1944: Jan. 22, 26.65.1.34.27.412 (*845, p. 264; *886, p. 459; 911, p. 227; *941, p. 261;
949, p. 328; 991, p. 286). J. E. Plummer. Water level, in feet below
land-surface datum, 1944: Jan. 22, 27.73.1.34.27.444 (*991, p. 286). Mr. Huffman. Water level, in feet below
land-surface datum, 1944: Jan. 22, 26.15.1.34.28.111 (*991, p. 286). G. C. Morris. Water level, in feet
below land-surface datum, 1944: Jan. 21, 25.31.1.34.28.133a (*941, p. 261; 949, p. 328, designated incorrectly as
1.34.28.311a; 991, p. 286). Lee Daniels. Measuring point beginning
Jan. 21, 1944, lower edge of mouth of discharge pipe. Subtract 4.22 feet
from tape measurements to reduce to land-surface datum. Water level, in
feet below land-surface datum, 1944: Jan. 21, 26.94.1.34.28.211 (*911, p. 228; 941, p. 261; 949, p. 328; 991, p. 286).
H. M. Livingston. Water level, in feet below land-surface datum, 1944:
Jan. 21, 27.21.

1.34.29.211 (*845, p. 264; *886, p. 459; 911, p. 228; 941, p. 261; 949, p. 328; 991, p. 287). J. W. King. Water level; in feet below land-surface datum, 1944: Jan. 21, 23.75.

1.34.30.121 (*845, p. 264; *886, p. 459; 911, p. 228; 941, p. 261; 949, p. 328; 991, p. 287). M. A. Pember. Measuring point beginning Jan. 20, 1944, top lower edge of east 1-inch hole in base of pump, south side of well, 0.13 foot above concrete pump base and 2.49 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 20, 21.49.

1.34.33.431 (*845, p. 264; 886, p. 460; 911, p. 228; 941, p. 261; 949, p. 328; *991, p. 287). W. A. Moore.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	12.52	May 12	12.51	Sept. 24	14.48
Mar. 22	12.45	Aug. 7	13.84	Dec. 2	14.53

1.34.34.143 (*845, p. 265; 886, p. 460; 911, p. 228; 941, p. 261; 991, p. 287). J. A. Sanders. Water level, in feet below land-surface datum, 1944: Jan. 22, 28.16.

1.34.34.232 (*845, p. 265; *886, p. 460; 911, p. 228; 941, p. 261; 949, p. 328; 991, p. 287). J. W. Owens. Water level, in feet below land-surface datum, 1944: Jan. 22, 25.90.

1.34.34.322 (*845, p. 265; *886, p. 460; 911, p. 228; *941, p. 262, published incorrectly in previous reports as 1.34.34.411; 949, p. 328; 991, p. 287). T. E. Mears. Water level, in feet below land-surface datum, 1944: Jan. 22, 26.48.

1.34.35.312 (*845, p. 265; *886, p. 460; 911, p. 228; 941, p. 262; 949, p. 328; 991, p. 287). Eastern New Mexico College. Water level, in feet below land-surface datum, 1944: Jan. 22, 25.28.

1.34.36.324 (*845, p. 266; *886, p. 460; 911, p. 228; 941, p. 262; published incorrectly in previous reports as 1.34.36.233; 949, p. 328; 991, p. 287). Mr. Disney. Water level, in feet below land-surface datum, 1944: Jan. 22, 28.22.

1.34.36.332 (*845, p. 266; 886, p. 460; 911, p. 228; 941, p. 262; 949, p. 328; 991, p. 287). T. R. Chambers. Water level, in feet below land-surface datum, 1944: Jan. 22, 24.62.

1.34.36.333 (*941, p. 262; 949, p. 328; 991, p. 287). Jim Landiss. Water level, in feet below land-surface datum, 1944: Jan. 22, 24.50.

1.34.36.421 (*845, p. 266; *886, p. 460; 911, p. 228; 941, p. 262). Earl McCallum. Water level, in feet below land-surface datum, 1944: Jan. 22, 26.64.

1.34.36.443 (*845, p. 266; *886, p. 460; 911, p. 228; 941, p. 262; 949, p. 328; 991, p. 287). Foy Williams. Water level, in feet below land-surface datum, 1944: Jan. 22, 26.08.

1.35.2.300 (*845, p. 266; 886, p. 460; *911, p. 229; 941, p. 262; 949, p. 329; 991, p. 287). Eastern New Mexico State Park.

Water level, in feet below land-surface datum, 1944

Jan. 20	43.52	May 12	42.88	Sept. 24	43.66
Mar. 22	42.94	Aug. 6	43.78	Dec. 2	43.63

1.35.6.141 (*886, p. 461; 911, p. 229; 941, p. 262; 949, p. 329; 991, p. 287). Aubrey Ellis.

Water level, in feet below land-surface datum, 1944

Jan. 20	3.54	May 12	3.29	Sept. 24	4.88
Mar. 22	3.38	Aug. 6	4.64	Dec. 2	4.38

1.35.6.400 (*845, p. 266; 886, p. 460; 911, p. 229; 941, p. 262; 949, p. 329; 991, p. 287). John C. Brown.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	8.40	May 12	8.13	Sept. 24	8.99
Mar. 22	8.19	Aug. 6	8.71	Dec. 2	9.02

1.35.11.241 (*941, p. 262; 949, p. 329; 991, p. 288). Eunice McPherson.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	14.58	May 12	14.42	Sept. 24	14.84
Mar. 22	14.43	Aug. 6	14.77	Dec. 2	14.70

1.35.19.332 (*845, p. 267; 886, p. 461; 911, p. 229; 941, p. 262; 949, p. 329; 991, p. 288). S. D. Foreman. No measurements made in 1944.

1.35.19.432 (*845, p. 267; 911, p. 229; *941, p. 262; 949, p. 329; 991, p. 288). D. A. Carroll. Water level, in feet below land-surface datum, 1944: Jan. 20, 42.28.

1.35.27.344 (*941, p. 263; 949, p. 329; 991, p. 288). H. J. McCroary.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	29.49	May 13	29.95	Sept. 25	29.80
Mar. 23	29.78	Aug. 6	30.13	Dec. 1	29.63

1.35.28.143 (*845, p. 267; 886, p. 461; 911, p. 229; *941, p. 263; 949, p. 329; *991, p. 288). J. C. Dick.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	44.49	May 13	44.96	Sept. 25	45.17
Mar. 23	44.73	Aug. 6	45.12	Dec. 1	45.01

1.35.29.111 (*911, p. 229; *941, p. 263; 949, p. 329; 991, p. 288). Clara Nullmeyer. Measuring point beginning Jan. 20, 1944, lower edge of mouth of discharge pipe. Subtract 2.82 feet from tape measurements to reduce to land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 20, 36.25.

1.35.29.231 (*845, p. 267; *886, p. 461; 911, p. 229; 941, p. 263; 949, p. 329; 991, p. 288). R. E. Lee. Water level, in feet below land-surface datum, 1944: Jan. 20, 34.68.

1.35.30.111 (*845, p. 267; 886, p. 461; 911, p. 229; *941, p. 263; 949, p. 329; 991, p. 288). E. F. Foreman. Water level, in feet below land-surface datum, 1944: Jan. 20, 35.91.

1.35.30.343 (*845, p. 268; 886, p. 461; 911, p. 229; 941, p. 263; 949, p. 329; 991, p. 288). T. E. Livingston. Water level, in feet below land-surface datum, 1944: Jan. 20, 26.27.

1.35.31.122 (*845, p. 268; 886, p. 461; 911, p. 229; *941, p. 263; 949, p. 329; 991, p. 288). Mary M. Kenyon. Water level, in feet below land-surface datum, 1944: Jan. 20, 25.71.

1.35.31.231 (*845, p. 268; 886, p. 461; 911, p. 229; 941, p. 263; 949, p. 329; 991, p. 288). Walter R. McColium. Water level, in feet below land-surface datum, 1944: Jan. 21, 23.30.

1.35.31.331 (*845, p. 268; *886, p. 461; 911, p. 229; 941, p. 263; 949, p. 329; 991, p. 288). R. A. Young. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.50.

1.35.31.341 (*991, p. 288). W. M. Drinkard. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.58.

1.35.31.342 (*845, p. 268; 886, p. 461; 911, p. 229; 941, p. 263; 949, p. 320; 991, p. 288). E. F. Moore. Measuring point beginning Jan. 21, 1944, top edge of Geological Survey washer on west edge of east 6-by 8-inch north-south stringer, 8 inches north of east frame post of centrifugal pump, at land-surface datum. Possible discrepancy of a few hundredths of a foot between present land-surface datum and previously used one as old measuring point has been destroyed. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.30.

1.35.31.421 (*845, p. 268; 886, p. 461; 911, p. 229; 941, p. 263; 949, p. 330; 991, p. 288). Henry Beebe. Water level, in feet below land-surface datum, 1944: Jan. 21, 23.35.

1.35.32.112 (*845, p. 268; *886, p. 461; 911, p. 230; *941, p. 263; 949, p. 330; 991, p. 289). Alvin George. Water level, in feet below land-surface datum, 1944: Jan. 20, 22.18.

1.35.32.212 (*911, p. 230; *941, p. 263; 949, p. 330; 991, p. 289). R. H. Green. Water level, in feet below land-surface datum, 1944: Jan. 20, 21.12.

1.35.32.311 (*845, p. 268; 886, p. 462; 911, p. 230; 941, p. 263; *949, p. 330; 991, p. 289). Orville W. Doak. Measuring point beginning Jan. 21, 1944, top edge of east $\frac{1}{2}$ -inch hole in south side of pump case, 0.20 foot above extended concrete pump base and 2.15 feet above land-surface datum. Top of present concrete pump base is 1.45 feet above original concrete base. Water level, in feet below land-surface datum, 1944: Jan. 21, 21.09.

1.35.32.332 (*845, p. 268; 886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). C. E. Lane. Measuring point beginning Jan. 21, 1944, lip of east 1-inch hole in south side of pump base, 0.64 foot above land-surface datum and 0.11 foot above new concrete pump base. Water level, in feet below land-surface datum, 1944: Jan. 21, 21.79.

1.35.32.413 (*845, p. 268; 886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; published incorrectly in previous reports as 1.35.32.411; 991, p. 289). Quincy L. Hanies. Water level, in feet below land-surface datum, 1944: Jan. 21, 19.35.

1.35.33.112 (*845, p. 269; 886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). Roy Newberry. Water level, in feet below land-surface datum, 1944: Jan. 20, 24.50.

1.35.33.331 (*845, p. 269; *886, p. 462; 911, p. 230; 941, p. 264; *949, p. 330; 991, p. 289). Lowell C. Green. Water level, in feet below land-surface datum, 1944: Jan. 21, 17.58.

1.36.5.300 (*886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). W. H. McDaniel.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 20	32.96	May 12	33.07	Sept. 24	a 33.15
Mar. 22	a 33.09	Aug. 6	a 33.08	Dec. 2	a 33.28

a Pumping recently.

1.36.6.100 (*886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). O. W. Eivins. Water level, in feet below land-surface datum, 1944: Jan. 20, 37.83 (pumping).

1.36.16.100 (*886, p. 462; 911, p. 230; 941, p. 264; *949, p. 330; 991, p. 289). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Jan. 20	a 27.55	May 12	18.56	Sept. 24	16.38
Mar. 22	a 30.50	Aug. 6	a 24.41	Dec. 2	17.95

a Pumping.

2.34.1.114 (*845, p. 269; *886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). E. C. Murrill. Water level, in feet below land-surface datum, 1944: Jan. 21, 25.14.

2.34.1.133 (*845, p. 269; *886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). Hugh R. Knox. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.53.

2.34.1.221 (*845, p. 269; 886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). Foy Williams. Water level, in feet below land-surface datum, 1944: Jan. 21, 25.77.

2.34.2.233 (*845, p. 269; 886, p. 462; 911, p. 230; 941, p. 264; 949, p. 330; 991, p. 289). Louisa Troutt.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 18	39.20	May 12	39.90	Sept. 24	42.49
Mar. 21	39.20	Aug. 6	43.52	Dec. 2	41.60

2.34.4.441 (*886, p. 462; 911, p. 231; 941, p. 265; 949, p. 331; 991, p. 290). Maud Wallace.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	1.50	May 12	1.77	Sept. 24	3.24
Mar. 22	1.77	Aug. 7	3.38	Dec. 2	2.78

2.34.10.343 (*845, p. 270; 886, p. 463; 911, p. 231; 941, p. 265; 949, p. 331; 991, p. 290). J. E. Bollen. Water level, in feet below land-surface datum, 1944: Jan. 21, 32.68.

2.34.11.122 (*941, p. 265; 949, p. 331; 991, p. 290). D. W. Bedinger. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.83.

2.34.13.133. E. W. McFarland. Dug and drilled irrigation well, equipped with turbine pump, diameter 14 inches, depth 112 feet. Measuring point, east top edge of Geological Survey washer nailed in west 6- by 8-inch timber of well curbing and pump support, near center, 1.38 feet above land-surface datum. Reference point, top surface of northwest corner of weir box, south of well, 2.83 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: May 12, 17.92; Aug. 6, 19.16; Sept. 24, 18.98; Dec. 2, 18.96.

2.34.13.224 (*941, p. 265; 949, p. 331; 991, p. 290). Mrs. A. L. Lamm. Measuring point beginning Jan. 21, 1944, top edge of 1- by 12-inch plank at southwest corner of well, 0.50 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Jan. 21, 6.38.

2.34.14.113 (*845, p. 271; *886, p. 463; 911, p. 231; 941, p. 265; 949, p. 331; 991, p. 290). J. P. Tarlton. Water level, in feet below land-surface datum, 1944: Jan. 21, 24.64.

2.34.14.412 (*845, p. 271; 886, p. 463; 911, p. 231; 941, p. 265; 949, p. 331; 991, p. 290). N. R. Blackard. Measurements discontinued after Mar. 22, 1944. Water levels, in feet below land-surface datum, 1944: Jan. 21, 21.82; Mar. 22, 22.12.

2.34.14.443 (*845, p. 271; *886, p. 463; 911, p. 231; 941, p. 265; 949, p. 331; 991, p. 291). J. M. Shim. Water level, in feet below land-surface datum, 1944: Jan. 21, 32.13.

2.34.15.212 (*845, p. 271; *886, p. 463; 911, p. 232; 941, p. 265; *949, p. 332; 991, p. 291). L. W. Allen. Old reference point destroyed. Reference point beginning Aug. 6, 1944, top of 1½-inch gas pipe driven flush with land surface, 6.5 feet west of southwest corner of well pit, 0.66 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	26.04	May 12	26.63	Sept. 24	27.13
Mar. 22	26.44	Aug. 6	26.95	Dec. 2	27.37

2.35.4.111 (*845, p. 272; *886, p. 464; 911, p. 232; 941, p. 266; *949, p. 332; 991, p. 291). W. E. Munsey.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	18.13	May 13	19.84	Dec. 1	18.18
Mar. 23	18.45	Sept. 24	21.77		

2.35.5.311 (*845, p. 272; 886, p. 464; 911, p. 232; 941, p. 266; 949, p. 332; 991, p. 291). H. G. Black. Water level, in feet below land-surface datum, 1944: Jan. 21, 19.50.

2.35.5.341 (*845, p. 272; *886, p. 464; 911, p. 232; 941, p. 266; 949, 332; 991, p. 291). H. R. Sadler. Water level, in feet below land-surface datum, 1944: Jan. 21, 20.04.

2.35.6.121 (*845, p. 273; *886, p. 464; 911, p. 232; *941, p. 266; 949, p. 332; 991, p. 291). Mr. Clarke.

Water level, in feet below land-surface datum, 1944

Jan. 21	23.23	May 13	23.79	Sept. 24	28.40
Mar. 22	23.11	Aug. 6	27.70	Nov. 30	26.14

2.35.6.213 (*845, p. 273; *886, p. 464; 911, p. 232; *941, p. 266; 949, p. 332; 991, p. 291). Mrs. Beulah Ownby. Water level, in feet below land-surface datum, 1944: Jan. 21, 23.09.

2.35.6.312 (*845, p. 273; 886, p. 464; 911, p. 232; 941, p. 266; 949, p. 332; 991, p. 291). Mrs. Minnie Lee Master. Water level, in feet below land-surface datum, 1944: Jan. 21, 21.77.

2.35.6.331 (*845, p. 273; *886, p. 464; 911, p. 232; 941, p. 266; 949, p. 332; 991, p. 291). J. A. Akens. Water level, in feet below land-surface datum, 1944: Jan. 21, 19.63.

2.35.6.411 (*886, p. 464; 911, p. 232; 941, p. 266; 949, p. 332; 991, p. 291). F. A. Jewell. Water level, in feet below land-surface datum, 1944: Jan. 21, 21.32.

2.35.6.443 (*949, p. 332; 991, p. 291). Ora Johnson.

Water level, in feet below land-surface datum, 1944

Jan. 21	19.81	May 13	19.72	Sept. 24	22.62
Mar. 22	19.54	Aug. 6	22.05	Nov. 30	21.48

2.35.7.134 (*845, p. 273; *886, p. 464; 911, p. 233; 941, p. 267; 949, p. 333; 991, p. 291). A. L. Kelly. Water level, in feet below land-surface datum, 1944: Jan. 21, 29.84.

2.35.7.311 (*845, p. 273; 886, p. 464; 911, p. 233; 941, p. 267; 949, p. 333; 991, p. 291). W. E. Elliott.

Water level, in feet below land-surface datum, 1944

Jan. 21	12.76	May 13	12.69	Sept. 24	14.48
Mar. 22	a 12.60	Aug. 6	14.05	Nov. 30	14.12

a Pumping.

2.35.8.331 (*845, p. 274; 886, p. 464; 911, p. 233; 941, p. 267; 949, p. 333; 991, p. 292). D. L. Ray. Water level, in feet below land-surface datum, 1944: Jan. 21, 23.57.

2.35.9.211 (*886, p. 465; 911, p. 233; 941, p. 267; 949, p. 333; 991, p. 292). Joe Maxwell. Measuring point beginning Jan. 21, 1944, top edge of Geological Survey washer in west top edge of 6- by 6-inch timber on east side of well, near center, 0.83 foot below land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 21	15.60	May 13	15.75	Sept. 24	16.11
Mar. 23	15.71	Aug. 6	15.85	Nov. 30	16.22

2.35.9.531. C. E. Clarke. Drilled irrigation well, equipped with turbine pump, diameter 12 inches, depth 130 feet. Measuring point, mouth of discharge pipe. Subtract 5.20 feet from tape measurements to reduce to land-surface datum. Reference point, top of concrete curb, 1.05 feet above land-surface datum. Water level, in feet below land-surface datum, 1944: May 13, 23.07.

2.35.10.211 (*911, p. 233; 941, p. 267; 949, p. 333; *991, p. 292). S. H. Hare. Water level, in feet below land-surface datum, 1944: Jan. 21, 14.96.

2.35.14.313 (*886, p. 465; 911, p. 233; 941, p. 267; 949, p. 333; 991, p. 292). First National Bank of Portales.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	8.92	May 13	8.44	Sept. 25	9.41
Mar. 22	8.48	Aug. 7	9.60	Nov. 30	9.10

2.35.14.414 (*886, p. 465; *911, p. 233; 941, p. 267; 949, p. 333; 991, p. 292). First National Bank of Portales.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	0.75	May 13	0.32	Sept. 25	2.06
Mar. 22	1.09	Aug. 7	1.43	Nov. 30	1.53

a Heavy local rain on previous day.

2.35.15.131 (*886, p. 465; 911, p. 233; 941, p. 267; 949, p. 333; *991, p. 292). First National Bank of Portales.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	0.89	May 13	1.06	Sept. 25	1.62
Mar. 22	1.05	Aug. 7	2.13	Nov. 30	1.37

2.35.16.333 (*886, p. 465; 911, p. 233; 941, p. 267; 949, p. 334; 991, p. 292). A. J. Cline. Reference point beginning May 1943, head of 3/4-by 12-inch bolt in ground, 1.35 feet east of well, 4.0 feet east of north-south fence line and 44.5 feet north of east-west fence line, 0.14 foot below land-surface datum.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	6.93	May 13	6.85	Sept. 24	8.07
Mar. 22	6.87	Aug. 7	8.32	Nov. 30	7.58

2.35.18.211 (*886, p. 465; 911, p. 233; 941, p. 267; 949, p. 334; 991, p. 292). State of New Mexico.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	3.77	May 13	3.86	Sept. 24	5.24
Mar. 22	3.97	Aug. 6	5.79	Nov. 30	4.48

2.35.19.134 (*845, p. 274; 886, p. 465; 991, p. 234; 941, p. 267; 949, p. 334; 991, p. 292). J. A. Roberson.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 21	25.83	May 12	26.14	Sept. 24	26.28
Mar. 22	25.99	Aug. 6	26.23	Nov. 30	26.40

2.35.25.123 (*845, p. 274; *886, p. 466; 911, p. 234; *941, p. 268; 949, p. 334; 991, p. 292). Dr. L. C. Buchanan.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	18.59	May 13	18.61	Sept. 25	18.53
Mar. 23	18.75	Aug. 7	18.37	Nov. 30	18.75

2.35.26.111 (*941, p. 268; *949, p. 334; *991, p. 293). T. M. McCrary. Water level, in feet below land-surface datum, 1944: Jan. 19, 29.67.

2.36.7.332. Loren Johnson. Drilled irrigation well, equipped with turbine pump, diameter 14 inches, depth 133 feet. Measuring point, top edge of $\frac{3}{4}$ -inch hole in north side of pump base, 0.26 foot above concrete pump base, 0.78 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Aug. 16, 16.26; Sept. 25, 15.66; Nov. 30, 16.19.

2.36.8.432 (*886, p. 466; 911, p. 234; *941, p. 268; 949, p. 334; 991, p. 293). S. W. Davis.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	16.22	May 13	16.48	Sept. 25	16.30
Mar. 23	16.21	Aug. 7	18.26	Nov. 30	16.33

2.36.9.431 (*886, p. 466; 911, p. 234; 941, p. 268; 949, p. 334; 991, p. 293). Thomas E. Polly. Water level, in feet below land-surface datum, 1944: Jan. 19, 17.58.

2.36.18.341 (*845, p. 275; 886, p. 466; 911, p. 234; 941, p. 268; 949, p. 334; 991, p. 293). Bob Stokes.

Water level, in feet below land-surface datum, 1944

Jan. 19	12.45	May 13	12.09	Sept. 25	12.14
Mar. 23	12.36	Aug. 7	11.52	Nov. 30	12.52

2.36.19.113 (*941, p. 268; *949, p. 334; 991, p. 293). E. O. Hobbs. Water level, in feet below land-surface datum, 1944: Jan. 19, 19.29.

2.36.20.321 (*845, p. 275; 886, p. 466; 911, p. 234; 941, p. 268; 949, p. 334; 991, p. 293). W. O. Davis.

Water level, in feet below land-surface datum, 1944

Jan. 19	11.81	May 13	12.64	Sept. 25	13.63
Mar. 23	11.94	Aug. 7	12.60	Nov. 30	12.41

2.36.21.432 (*886, p. 466; 911, p. 234; 941, p. 268; 949, p. 334; *991, p. 293). Sam H. McCarron. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.24.

2.36.23.412. T. W. Blewett. Used dug and drilled irrigation well, equipped with centrifugal pump, depth 60 feet. Measuring point, top edge of Geological Survey washer nailed in top surface of south edge of north 4- by 4-inch timber supporting vertical shaft, at a point 1 foot west of north vertical upright, 0.40 foot above concrete well curb and land-surface datum. Water level, in feet below land-surface datum, 1944: Sept. 25, 12.62.

2.36.25.112 (*886, p. 466; 911, p. 234; 941, p. 268; 949, p. 334; 991, p. 293). W. D. Pate. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.22.

2.36.26.131 (*845, p. 276; 886, p. 466; 911, p. 234; *941, p. 268; 949, p. 334; 991, p. 293). L. L. Bugg.

Water level, in feet below land-surface datum, 1944

Jan. 19	11.15	May 13	10.59	Sept. 25	11.23
Mar. 23	10.84	Aug. 7	10.47	Nov. 29	11.35

2.36.26.311 (*845, p. 276; 886, p. 466; 911, p. 234; 941, p. 268; 949, p. 335; 991, p. 293). J. S. Riley. Water level, in feet below land-surface datum, 1944: Jan. 19, 11.00.

2.36.26.423 (*911, p. 234; 941, p. 269; 949, 335; 991, p. 293). W. E. Cox. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.83.

2.36.27.111 (*886, p. 467; 911, p. 234; 941, p. 269; 949, p. 335; 991, p. 293). B. L. Kennedy. Water level, in feet below land-surface datum, 1944: Jan. 19, 11.94.

2.36.27.131 (*845, p. 276; *886, p. 467; 911, p. 234; 941, p. 269; 949, p. 335; 991, p. 294). B. L. Kennedy. Water level, in feet below land-surface datum, 1944: Jan. 19, 12.10.

2.36.27.211 (*845, p. 276; 886, p. 467; 911, p. 234; 941, p. 269; 949, p. 335; 991, p. 294). M. O. Pate. Water level, in feet below land-surface datum, 1944: Jan. 19, 11.40.

2.36.27.311 (*845, p. 277; 886, p. 467; 911, p. 234; 941, p. 269; 949, p. 335; 991, p. 294). J. M. Riley.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	12.55	May 13	12.61	Sept. 25	12.93
Mar. 23	12.78	Aug. 7	12.14	Nov. 29	13.51

2.36.28.114b (*845, p. 277; *886, p. 467; 911, p. 235; 941, p. 269; 949, p. 335; 991, p. 294). Morgan Trammell. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: June 16-18, 11.96; Sept. 22-23, 13.28.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.76	12.52	12.32	.....	12.17	12.03	12.05	12.41	13.15	13.20	13.13	13.13
2	12.74	12.50	12.32	12.25	12.14	12.03	12.06	12.45	13.15	13.19	13.13	13.13
3	12.74	12.50	12.32	12.24	12.15	12.03	12.06	12.49	13.15	13.19	13.13	13.10
4	12.73	12.49	12.32	12.20	12.15	12.03	12.07	12.52	13.15	13.19	13.14	13.10
5	12.73	12.49	12.28	12.20	12.13	12.03	12.10	12.57	13.15	13.19	13.13	13.10
6	12.73	12.49	12.28	12.19	12.13	12.04	12.11	12.61	13.15	13.19	13.13	13.11
7	12.73	12.46	12.30	12.19	12.08	12.03	12.12	12.63	13.15	13.19	13.13	13.11
8	12.73	12.46	12.30	12.17	12.08	12.03	12.16	12.67	13.15	13.17	13.13	13.11
9	12.72	12.43	12.29	12.17	12.08	12.03	12.19	12.70	13.16	13.15	13.14	13.11
10	12.69	12.43	12.28	12.17	12.08	12.01	12.19	12.72	13.16	13.14	13.14	13.11
11	12.69	12.45	12.28	12.20	12.07	12.00	12.19	12.73	13.18	13.14	13.14	13.11
12	12.69	12.43	12.27	12.20	12.07	12.00	12.20	12.77	13.18	13.14	13.13	13.11
13	12.69	12.40	12.26	12.17	12.07	12.00	12.19	12.79	13.18	13.14	13.14	13.11
14	12.67	12.40	12.26	12.17	12.06	12.00	12.18	12.81	13.18	13.14	13.14	13.11
15	12.66	12.40	12.26	12.17	12.06	12.00	12.18	12.84	13.20	13.14	13.14	13.11
16	12.65	12.40	12.25	12.14	12.03	11.96	12.14	12.87	13.22	13.14	13.14	13.11
17	12.65	12.40	12.23	12.14	12.03	11.96	12.14	12.90	13.23	13.14	13.14	13.10
18	12.65	12.40	12.23	12.16	12.03	11.96	12.14	12.93	13.25	13.14	13.14	13.10
19	12.62	12.40	12.23	12.16	12.03	11.97	12.15	12.96	13.25	13.14	13.12	13.10
20	12.61	12.38	12.21	12.16	12.03	11.97	12.15	12.99	13.26	13.13	13.12	13.10
21	12.60	12.37	12.22	12.16	12.03	11.97	12.14	13.01	13.26	13.13	13.12	13.10
22	12.59	12.37	12.23	12.16	12.03	11.98	12.11	13.03	13.28	13.13	13.12	13.10
23	12.55	12.37	12.24	12.19	12.03	12.01	12.11	13.07	13.28	13.14	13.12	13.10
24	12.55	12.34	12.22	12.18	12.03	12.01	12.12	13.10	13.26	13.14	13.12	13.09
25	12.55	12.33	12.22	12.15	12.04	12.00	12.12	13.10	13.26	13.14	13.12	13.09
26	12.55	12.33	12.22	12.15	12.06	12.00	12.16	13.12	13.26	13.14	13.12	13.09
27	12.55	12.32	.....	12.16	12.06	12.00	12.20	13.14	13.24	13.14	13.12	13.09
28	12.55	12.33	.....	12.15	12.06	12.01	12.24	13.15	13.23	13.14	13.12	13.09
29	12.55	12.33	.....	12.18	12.06	12.03	12.28	13.16	13.22	13.13	13.12	13.09
30	12.53	.....	.....	12.18	12.06	12.04	12.30	13.15	13.22	13.13	13.13	13.09
31	12.53	.....	.....	.....	12.03	.....	12.37	13.15	.....	13.13	.....	13.09

2.36.28.411 (*845, p. 277; 886, p. 467; 911, p. 235; 941, p. 269; 949, p. 335; 991, p. 294). C. A. Tevis. Water level, in feet below land-surface datum, 1944: Jan. 19, 12.45.

2.36.28.421 (*845, p. 277; *886, p. 467; 911, p. 235; 941, p. 269; 949, p. 335; 991, p. 294). C. A. Tevis. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.60.

2.36.28.441 (*845, p. 277; 886, p. 467; 911, p. 235; 941, p. 269; 991, p. 294). E. C. Sanders. Water level, in feet below land-surface datum, 1944: Jan. 19, 14.40.

2.36.30.111 (*941, p. 270; *949, p. 336; 991, p. 295). L. B. Thornton.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 19	1.68	May 13	2.12	Sept. 25	4.02
Mar. 23	2.09	Aug. 7	4.12	Nov. 30	3.36

2.36.34.111 (*845, p. 278; 911, p. 235; 941, p. 270; 949, p. 336; 991, p. 295). M. F. Riley. Water level, in feet below land-surface datum, 1944: Jan. 19, 13.52.

2.36.34.221 (*845, p. 278; *886, p. 467; 911, p. 235; 941, p. 270; 949, p. 336; 991, p. 295). W. H. Davenport. Water level, in feet below land-surface datum, 1944: Jan. 19, 8.69.

2.36.34.341 (*845, p. 278; 886, p. 467; *911, p. 235; 941, p. 270; 949, p. 336; 991, p. 295). W. J. Murrill.

Water level, in feet below land-surface datum, 1944

Jan. 19	17.26	May 13	16.74	Sept. 25	17.48
Mar. 23	16.94	Aug. 7	17.38	Nov. 29	17.57

2.36.34.421 (*886, p. 467; 911, p. 235; *941, p. 270; 949, p. 336; 991, p. 295). F. F. Dacus. Water level, in feet below land-surface datum, 1944: Jan. 19, 8.67.

2.36.35.212 (*845, p. 278; *886, p. 467; 911, p. 235; 941, p. 270; *949, p. 336; 991, p. 295). A. E. Whitehead.

Water level, in feet below land-surface datum, 1944

Jan. 19	8.67	May 13	7.93	Sept. 25	9.51
Mar. 23	8.20	Aug. 7	9.06	Nov. 29	8.94

2.37.19.331 (*886, p. 467; 911, p. 235; 941, p. 270; 949, p. 336; 991, p. 295). W. H. McDougle. Measuring point beginning Aug. 7, 1944, top north edge of south 4- by 4-inch timber pump support at Geological Survey washer, 1.5 feet west of southeast corner of pit, 0.38 foot above land-surface datum.

Water level, in feet below land-surface datum, 1944

Jan. 19	16.34	May 13	16.53	Sept. 25	15.94
Mar. 23	16.88	Aug. 7	15.37	Nov. 29	16.44

2.37.19.341 (*886, p. 467; 911, p. 235; 941, p. 270; 949, p. 336; 991, p. 295). C. R. Anderson. Water level, in feet below land-surface datum, 1944: Jan. 19, 16.19.

SIERRA COUNTY (HOT SPRINGS AREA)

By C. R. Murray

Water-level measurements were continued in 1944 in the thermal water area at Hot Springs in cooperation with the State engineer of New Mexico. Measurements made since the inception of the observation-well program in 1939 have been published in Water-Supply Papers 911, 941, 949, and 991. A detailed report on ground-water conditions in the Hot Springs area has been prepared by the Geological Survey for publication by the State engineer.

Water levels were measured in 11 wells in January, April, and June, in 9 wells in September, and in 10 wells in November, making a total of 52 measurements for the year. Water-stage recorders were operated on two artesian wells and one shallow-water well throughout the year.

Fluctuations in water level and artesian head

Water levels and artesian head rose slowly in 1944 until May, when they began to decline. The decline continued until heavy rains occurred about September 20, after which they rose during the remainder of the year. As the discharge from Elephant Butte Dam was moderate in amount and distributed rather evenly throughout the year, the stage of the Rio Grande at Hot Springs did not vary sufficiently to cause any material fluctuations of water level and artesian head as had occurred in former years when the river discharge varied seasonally. Transpiration and evaporation appeared to be the principal causes of the seasonal fluctuations in water levels, and heavy rains produced sudden sharp rises which dissipated rather slowly. The rise in water level and artesian head from October through December was the most pronounced seasonal fluctuation during the year. The amounts of the seasonal fluctuations in artesian head, as determined by averaging measurements made in 9 of the wells, are as follows: January 6, 1944, to April 11, +0.10 foot; April 11 to September 15, -0.24 foot; September 15 to January 2, 1945, +0.49 foot. The fluctuations in water level for the same periods as determined in the shallow well, No. 6A, were +0.04, -0.20, and +0.38 foot, respectively.

Water-level measurements

2 (*941, p. 272; 949, p. 337; 991, p. 297). Lot 17, block 1. H. L. Lockhart.

Water level, in feet above land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	0.30	June 22	0.35	Nov. 20	0.44
Apr. 11	.44	Sept. 15	.13		

3 (*941, p. 272; 949, p. 337; 991, p. 297). Lot 17, block 1. H. L. Lockhart.

Water level, in feet above land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	0.35	June 22	0.39	Nov. 20	0.50
Apr. 11	.48	Sept. 15	.17		

4 (*911, p. 237; 941, p. 272; 949, p. 337; 991, p. 297). Lot 21, block 2. C. E. James. Water levels, in feet above land-surface datum, 1944: Jan. 6, 0.47; Apr. 11, 0.58; June 22, 0.46; Nov. 20, 0.62.

5 (#911, p. 237; 941, p. 272; 949, p. 337; 991, p. 297). Lot 12, block 9. J. E. Malone. Measuring point beginning Jan. 6, 1944, top of nipple in coupling on well casing, west side of well, 0.60 foot above land-surface datum and 0.32 foot above concrete floor of bathhouse.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	0.70	June 22	0.70	Nov. 20	0.55
Apr. 11	.65	Sept. 15	.89		

6 (#911, p. 237; 941, p. 272; 949, p. 337; 991, p. 297). Lot 4, block 8. C. E. James. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet above land-surface datum, 1944: Dec. 28, 30, 1.05; Sept. 21-22, 0.49.

Highest daily water level, in feet above land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.64	0.66	0.71	0.77	0.78	0.74	0.70	0.65	0.55	0.64	0.77	0.90
2	.64	.67	.74	.75	.78	.73	.67	.65	.53	.59	.76	.91
3	.62	.67	.74	.75	.75	.75	.64	.65	.53	.61	.75	.93
4	.63	.68	.72	.77	.74	.71	.62	.64	.53	.60	.77	.90
5	.61	.67	.76	.77	.76	.68	.64	.62	.53	...	.79	.90
6	.66	.67	.69	.78	.77	.69	.66	.61	.53	...	.74	.99
7	.67	.68	.68	.79	.77	.72	.65	.59	.52	...	.75	.95
8	.66	.68	.69	.80	.74	.73	.65	.60	.53	.58	.76	.95
9	.67	.69	.70	.82	.75	.72	.64	.61	.54	.60	.78	.94
10	.67	.67	.71	.74	.76	.73	.62	.61	.55	.60	.79	.94
11	.67	.66	.71	.75	.74	.73	.62	.63	.51	...	.79	.94
12	.64	.68	.72	.77	.76	.69	.63	.61	.53	...	.79	.95
13	.64	.68	.72	.77	.76	.70	.64	.62	.53	...	.78	.94
14	.64	.69	.74	.75	.77	.71	.64	.60	.53	...	.79	.97
15	.64	.70	.72	.75	.75	.72	.63	.59	.53	.63	.80	.98
16	.63	.69	.74	.78	.76	.72	.65	.60	.53	.61	.85	.98
17	.62	.67	.75	.72	.75	.71	.67	.62	.53	.64	.84	.98
18	.63	.68	.76	.74	.74	.66	.72	.68	.50	.65	.86	.95
19	.61	.68	.73	.74	.75	.67	.70	.66	.51	.63	.84	.99
20	.63	.69	.74	.76	.75	.68	.71	.66	.50	.63	.83	1.01
21	.64	.68	.74	.77	.72	.70	.69	.63	.49	.64	.85	1.02
22	.63	.69	.71	.74	.72	.69	.69	.63	.49	.65	.85	1.03
23	.66	.72	.74	.76	.70	.66	.69	.62	.50	.66	.93	1.04
24	.70	.74	.77	.77	.72	.66	.68	.61	.56	.68	.95	1.04
25	.67	.70	.76	.78	.73	.66	.66	.60	.69	.69	.90	1.03
26	.68	.70	.76	.77	.73	.64	.66	.57	.69	.69	.87	1.04
27	.65	.70	.76	.79	...	.64	.66	.57	.69	.71	.88	1.04
28	.68	.68	.76	.79	.70	.65	.66	.55	.68	.73	.89	1.05
29	.67	.70	.75	.77	.72	.63	.64	.55	.68	.74	.89	1.05
30	.65	...	.77	.77	.73	.61	.65	.54	.66	.74	.91	1.05
31	.66	...	.77	...	.73	...	.64	.54	...	.75	...	1.03

6a (#941, p. 273; 949, p. 338; 991, p. 298). Lot 4, block 8. C. E. James. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet with reference to land-surface datum, 1944: Sept. 25, +0.99; Sept. 22-23, -1.81.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.55	1.61	1.58	1.57	1.53	1.68	1.64	1.70	1.77	1.47	1.58	1.47
2	1.55	1.60	1.57	1.58	1.58	1.68	1.64	1.71	1.78	1.56	1.57	1.47
3	1.59	1.61	1.56	...	1.59	1.68	1.70	1.71	1.79	1.62	1.58	1.47
4	1.60	1.61	1.57	...	1.60	1.70	1.75	1.72	1.80	1.63	1.60	1.47
5	1.60	1.60	1.56	...	1.60	1.71	1.71	1.74	1.78	1.65	1.58	1.48
6	1.61	1.60	1.56	...	1.59	1.72	1.71	1.74	1.77	1.66	1.58	1.47
7	1.59	1.60	1.59	...	1.60	1.71	1.72	1.75	...	1.67	1.60	1.46
8	1.60	1.59	1.59	...	1.61	1.69	1.71	1.70	...	1.67	1.59	1.45
9	1.59	1.59	1.59	...	1.62	1.70	1.72	1.68	...	1.68	1.59	1.44
10	1.59	1.60	1.59	1.58	1.61	1.70	1.73	1.67	1.78	1.67	1.58	1.44
11	1.58	1.61	1.58	1.58	1.61	1.70	1.74	1.66	1.80	1.67	1.57	1.45

6a. C. E. James--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
12	1.59	1.80	1.57	1.58	1.62	1.72	1.74	1.68	1.79	1.66	1.58	1.44
13	1.60	1.59	1.57	1.57	1.63	1.72	1.73	1.68	1.79	1.66	1.57	1.44
14	1.61	1.60	1.57	1.58	1.63	1.71	1.73	1.70	1.79	1.66	1.58	1.43
15	1.62	1.59	1.57	1.58	1.64	1.71	1.73	1.73	1.79	1.63	1.57	1.42
16	1.62	1.59	1.57	1.58	1.65	1.71	1.68	1.72	1.78	1.63	1.55	1.43
17	1.63	1.59	1.57	....	1.65	1.72	1.62	1.66	1.77	1.63	1.48	1.42
18	1.64	1.59	1.57	....	1.65	1.73	1.58	1.43	1.79	1.63	1.45	1.43
19	1.64	1.59	1.57	....	1.65	....	1.60	1.46	1.80	1.63	1.48	1.43
20	1.64	1.58	1.56	....	1.65	....	1.61	1.52	1.80	1.63	1.49	1.41
21	1.63	1.58	1.57	....	1.65	....	1.63	1.57	1.80	1.63	1.51	....
22	1.63	1.59	1.58	1.59	1.66	....	1.63	1.62	1.81	1.64	1.52	....
23	1.62	1.58	1.58	1.59	1.68	1.73	1.61	1.65	1.81	1.67	1.47	....
24	1.61	1.57	1.57	1.57	1.67	1.74	1.61	1.67	1.12	1.66	1.53	1.38
25	1.60	1.57	1.56	1.57	1.68	1.74	1.64	1.68	a .99	1.65	1.52	1.38
26	1.59	1.58	1.56	1.58	1.67	1.76	1.66	1.70	.62	1.65	1.41	1.37
27	1.58	1.58	1.57	1.58	1.60	1.77	1.67	1.72	.83	1.59	1.45	1.37
28	1.57	1.58	1.57	1.57	1.63	1.78	1.68	1.74	1.19	1.56	1.47	1.37
29	1.57	1.59	1.58	1.58	1.66	1.79	1.69	1.75	1.19	1.56	1.49	1.37
30	1.59	....	1.57	1.58	1.67	1.79	1.70	1.76	1.28	1.58	1.47	1.37
31	1.60	....	1.57	....	1.67	....	1.71	1.77	....	1.58	....	1.38

a Above land-surface datum.

12 (*911, p. 238; 941, p. 273; 949, p. 339; 991, p. 298). Lot 8, block 40. Mr. Mathis.

Water level, in feet above land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	3.69	June 22	3.70	Nov. 20	a 3.86
Apr. 11	3.79	Sept. 15	a 3.54		

a Subnormal reading; well discharging.

18 (*911, p. 238; 941, p. 273; 949, p. 339; 991, p. 298). Lot 7, block 105. Mrs. J. Schauer.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	1.76	June 22	1.78	Nov. 20	1.61
Apr. 11	1.69	Sept. 15	1.89		

19 (*911, p. 238; 941, p. 273; 949, p. 339; 991, p. 298). Lot 12, block 105. Bill Green.

Water level, in feet below land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	0.90	June 22	0.91	Nov. 20	0.76
Apr. 11	.80	Sept. 15	1.05		

25 (*911, p. 238; 941, p. 273; 949, p. 339; 991, p. 298). Lot 4, block 93. Jim Knox. Equipped with water-stage recorder. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Dec. 29, 7.62; Jan. 2, 7.99.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.98	7.90	7.88	7.87	7.82	7.84	....	7.88	7.92	7.90	7.83	7.72
2	7.99	7.90	7.87	7.87	7.82	7.84	7.88	7.88	7.93	7.91	7.83	7.71
3	....	7.91	7.87	7.86	7.85	7.84	7.87	7.88	7.93	7.91	7.84	7.70
4	....	7.90	7.87	7.85	7.85	7.85	7.88	7.88	7.94	7.92	7.84	7.70
5	....	7.90	7.85	7.86	7.86	7.85	7.88	7.89	7.93	7.93	7.83	7.70
6	7.88	7.90	7.87	....	7.86	7.85	7.88	7.90	7.94	7.93	7.85	7.70
7	7.88	7.89	7.89	....	7.86	7.85	....	7.90	7.94	7.93	7.84	7.69
8	7.89	7.89	7.88	....	7.86	7.84	....	7.91	7.94	7.92	7.84	7.68
9	7.88	7.88	7.87	....	7.85	7.85	7.88	7.90	7.93	7.92	7.84	7.68
10	7.89	7.90	7.88	7.88	7.84	7.85	7.88	7.91	7.93	7.92	7.83	7.70

25. Jim Knox--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	7.88	7.90	7.88	7.84	7.85	7.84	7.88	7.90	7.94	7.92	7.83	7.69
12	7.90	7.89	7.87	7.82	7.85	7.85	7.87	7.91	7.94	7.91	7.83	7.68
13	7.90	7.89	7.86	7.82	7.85	7.84	7.87	7.91	7.93	7.91	7.84	7.69
14	7.90	7.88	7.86	7.84	7.85	7.84	7.87	7.91	7.93	7.90	7.84	7.68
15	7.90	7.88	7.86	7.84	7.84	7.84	7.88	7.91	7.94	7.90	7.82	7.67
16	7.90	7.89	7.86	7.83	7.84	7.84	7.87	7.90	7.94	7.91	7.82	7.67
17	7.91	7.90	7.84	7.83	7.85	7.85	7.87	7.90	7.94	7.89	7.80	7.67
18	7.91	7.89	7.84	7.83	7.86	7.85	7.86	7.88	7.94	7.89	7.80	7.69
19	7.91	7.89	7.86	7.84	7.86	7.87	7.87	7.89	7.94	7.89	7.80	7.67
20	7.91	7.88	7.86	7.82	7.86	7.87	7.87	7.89	7.94	7.89	7.76	7.66
21	7.91	7.89	7.88	7.81	7.85	7.87	7.87	7.90	7.95	7.90	7.76	7.66
22	7.91	7.88	7.90	7.85	7.86	7.88	7.87	7.91	7.95	7.88	7.75	7.65
23	7.89	7.87	7.87	7.83	7.87	7.88	7.87	7.91	7.95	7.88	7.66	7.64
24	7.88	7.87	7.86	7.83	7.86	7.76	7.87	7.92	7.93	7.87	7.66	7.64
25	7.88	7.87	7.86	7.83	7.84	7.86	7.88	7.92	7.87	7.86	7.71	7.64
26	7.88	7.89	7.87	7.83	7.84	....	7.89	7.93	7.86	7.86	7.65	7.63
27	7.89	7.88	7.85	7.83	7.80	....	7.87	7.93	7.86	7.86	7.71	7.64
28	7.89	7.90	7.85	7.83	7.85	....	7.87	7.92	....	7.85	7.71	7.63
29	7.89	7.89	7.87	7.83	7.86	....	7.89	7.92	....	7.84	7.72	7.62
30	7.90	....	7.84	7.83	7.85	....	7.89	7.92	....	7.84	7.70	7.63
31	7.90	....	7.84	....	7.85	....	7.89	7.92	....	7.84	....	7.64

27 (*911, p. 239; 941, p. 274; 949, p. 339; 991, p. 299). Lot 4, block 42. Ben Graham.

Water level, in feet above land-surface datum, 1944

Date	Water level	Date	Water level	Date	Water level
Jan. 6	2.19	June 22	2.26	Nov. 20	2.36
Apr. 11	2.30	Sept. 25	2.05		

30 (*911, p. 240; 941, p. 274; *949, p. 340; 991, p. 299). Lot 1, block 102. George L. Mills.

Water level, in feet below land-surface datum, 1944

Jan. 6	1.44	June 22	1.37	Nov. 20	1.23
Apr. 11	1.34	Sept. 15	1.62		

31 (*911, p. 240; 941, p. 274; 949, p. 340; 991, p. 299). Lot 3, block 104. Mrs. M. J. Scarborough. Water levels, in feet above land-surface datum, 1944: Jan. 6, 0.92; Apr. 11, 0.94; June 22, 1.01; Sept. 15 and Nov. 20, in excess of 1.25.

32 (*911, p. 240; 941, p. 274; 949, p. 340; 991, p. 299). Lot 4, block 103. Tom Jones. Measurements discontinued.

33 (*941, p. 274; 949, p. 340; 991, p. 299). Lot 2, block 106. C. E. James.

Water level, in feet below land-surface datum, 1944

Jan. 6	0.48	June 22	0.44	Nov. 20	0.22
Apr. 11	.38	Sept. 15	.58		

TORRANCE COUNTY (ESTANCIA VALLEY)

By C. R. Murray

Water-level measurements were continued in observation wells in Estancia Valley in 1944 in cooperation with the State engineer of New Mexico. Records of measurements made since the beginning of the program

in 1941 have been published in Geological Survey Water-Supply Papers 941, 949, and 991. The geology and ground-water conditions in the valley have been described by O. E. Meinzer in Water-Supply Paper 275.

Fluctuations in water level

Ground-water recharge in a closed basin, such as the Estancia Valley, is dependent on the amount of precipitation falling within its borders, and the position of the water table is determined by the relative rates at which recharge and discharge, both natural and artificial, take place. Only a small amount of water is pumped for stock, domestic, industrial, and irrigation uses in Estancia Valley. In 1944 about 200 acres of land in the valley was irrigated with ground water. Most of this was on the Ray Brown farm, but it includes also a few acres on the J. P. Morgan, G. L. Deen, and Floyd Stump farms. The amount of water pumped for irrigation is estimated as about 150 acre-feet. Far greater withdrawals occur through transpiration and evaporation, which therefore have an important bearing on the position of the water table. The precipitation, and therefore the recharge to the water table, varies considerably from year to year. In 1944 the U. S. Weather Bureau recorded 11.37 inches of precipitation at Estancia, which is 2.04 inches below the yearly normal, and 13.71 inches at McIntosh, 0.21 inches above normal.

Water-level measurements were made in 58 wells in February and June and in 54 in September, making a total of 170 for the year. Rises occurred during the year in 31 out of 51 wells from which records are comparable, and declines in the remaining 20. Most of the wells showing declines are in Ts. 5 and 6 N., R. 8 E., between Estancia and Willard. The depth to water is small in these wells and recovery from the preceding summer's transpiration and evaporation takes place until April. As measurements were made in February in 1944 and in January 1945, it is believed that the declines would have been wiped out by another month of recovery. Therefore it appears that the water table rose during the year throughout practically all of Estancia Valley. From the record obtained by the automatic water-stage recorder operated throughout the year on well 7.8.26.121 in the shallow water, salt grass, transpiration area, it appears that water levels were at about their minimum yearly position when the readings in September were made. A seasonal variation in water level in the salt grass,

transpiration areas of about 2.5 to 3.0 feet is indicated by this well. The seasonal fluctuation in water levels decreases in wells with their remoteness from the shallow-water area until it becomes imperceptible.

Water levels in wells near Willard showed rises in 1944 as did those in T. 7 N., R. 8 E. and Ts. 8 and 9 N., Rs. 8 and 9 E. The few wells in Ts. 5 and 6 N., R. 10 E., east of the salt lake area, showed rises of a few hundredths of a foot. The changes during the year, in general, were only a few tenths of a foot, but well 6.8.30.434, which is 60 feet deep, is equipped with a windmill, and has a low specific capacity, showed a decline of 8.06 feet; well 6.8.30.434, an uncased well 212 feet deep, showed a decline of 1.43 feet; well 6.9.9.222, a stock well, equipped with a windmill and having a low specific capacity, showed a rise of 4.50 feet; and well 7.7.12.444, an unused well 1,359 feet deep, showed a rise of 0.60 foot.

Heavy snowfall during December 1943 and January 1944 in the Manzano Mountains, west of the valley, was undoubtedly an important factor in maintaining the water table in its present high position. Water levels are from a few tenths of a foot to several feet higher than they were prior to the abnormal precipitation in the summer of 1941. The small rises have taken place along the central part of the valley and the rises increase in general with the distance of the wells up the draws toward the west.

Water-level measurements

4.8.1.144 (*941, p. 277; 949, p. 341; 991, p. 301). J. M. Harper. Reference points, beginning Feb. 23, 1944: (1) Top of angle iron set in concrete curb at southeast side of well, 0.57 foot above land-surface datum; (2) top of concrete doorstep at northwest corner, 25 feet southeast of well, 0.88 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 54.70; June 11, 53.87.

4.8.24.222 (*941, p. 277; 949, p. 341; 991, p. 301). M. E. Ottoson. Water levels, in feet below land-surface datum, 1944: Feb. 22, 56.37; June 10, 56.38; Sept. 20, 56.11.

4.9.6.444 (*941, p. 277; 949, p. 341; 991, p. 301). Red Ball Camp. Reference point, beginning Feb. 22, 1944, top of southwest corner of concrete slab at southwest entrance to house east of well, 0.52 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 36.06; June 10, 36.14; Sept. 20, 35.89.

4.9.7.441 (*941, p. 277; 949, p. 341; 991, p. 301). Water levels, in feet below land-surface datum, 1944: Feb. 22, 53.39; June 10, 53.42; Sept. 20, 53.11.

4.9.10.133 (*941, p. 277; 949, p. 341; 991, p. 301). Homer Arnn. Reference point beginning Feb. 23, 1944, top of 2- by 2-inch stake on gate post in fence 25 feet west of well, 0.78 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 17.81; June 10, 17.98; Sept. 21, 17.82.

5.7.15.212 (*941, p. 277; 949, p. 341; *991, p. 302). Ewing School. Water levels, in feet below land-surface datum, 1944: Feb. 23, 115.56; June 11, 115.15; Sept. 21, 115.64.

5.8.4.343 (*941, p. 277; 949, p. 341; 991, p. 302). Reference point, established Feb. 23, 1944, top of 2- by 2-inch stake nailed to railroad tie set in ground 27 feet west of well, 1.75 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 32.71 (pumping); June 10, 30.72; Sept. 21, 30.87.

5.8.11.221 (*941, p. 278; 949, p. 341; 991, p. 302). J. V. Chamberlin. Reference point beginning Feb. 22, 1944, top of nail in washer set in 2- by 2-inch stake, 50 feet southeast of well in line with old fence post, 0.44 foot below land-surface datum. Measurements discontinued after June 1944. Water levels, in feet below land-surface datum, 1944: Feb. 22, 10.16; June 10, 9.74.

5.8.11.221a. J. V. Chamberlin. Used stock well, equipped with windmill, diameter 8 inches, depth 23 feet. This well is 20 feet northeast of well 5.8.11.221, which has been filled. Measuring point, top of casing at low point on west side, 0.62 foot above land-surface datum, which is same as land-surface datum at well 5.8.11.221. Water level, in feet below land-surface datum, 1944: Sept. 20, 10.28.

5.8.12.111 (*941, p. 278; 949, p. 341; 991, p. 302). J. V. Chamberlin. Reference point beginning Feb. 22, 1944, top of concrete house foundation, 4 feet north of southwest corner, 25 feet northeast of well, 1.62 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 12.44; June 10, 13.45; Sept. 20, 14.51.

5.8.17.241 (*941, p. 278; 949, p. 341; 991, p. 302). Ray Brown. Reference point beginning Feb. 23, 1944, top of 2- by 2-inch stake nailed to post 12 feet south of well, 0.18 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 41.36; June 11, 41.26; Sept. 21, 41.91.

5.8.17.311 (*941, p. 278; 949, p. 341; 991, p. 302). Ray Brown. Reference point beginning Feb. 23, 1944, top of nut on lower bolt in northwest leg of tower over well, 1.01 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 27.47; June 11, 27.83; Sept. 21, 28.27.

5.8.17.323 (*941, p. 278; 949, p. 341; 991, p. 302). Ray Brown. Water levels, in feet below land-surface datum, 1944: Feb. 23, 27.13; June 11, 27.25; Sept. 21, 27.76.

5.8.17.334 (*941, p. 278; 949, p. 341; 991, p. 302). Reference point, beginning Feb. 23, 1944, square hole cut in rock embedded in concrete well curb, east side of well, 0.06 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 10.82; June 11, 11.05; Sept. 21, 12.10.

5.8.18.224 (*941, p. 278; 949, p. 341; 991, p. 302). S. W. Hodgson. Measurements discontinued after June 11, 1944. Water levels, in feet below land-surface datum, 1944: Feb. 23, 43.65; June 11, 43.90.

5.8.25.212 (*941, p. 278; 949, p. 341; 991, p. 302). Mrs. Gregory. Formerly owned by Mrs. Frances Backer. Reference point beginning Feb. 22, 1944, top of railroad spike in north side of northeast leg of windmill tower, 2.71 feet above land-surface datum. Former measuring point destroyed. Measuring point beginning June 10, 1944, top edge of automobile gasoline tank, south side, set in ground around casing, 2.35 feet above top of casing, and 0.98 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 23.50; June 10, 23.70; Sept. 20, 23.96.

5.8.25.222b (*941, p. 278; 949, p. 341; 991, p. 302). Mrs. Frances Backer. Reference point beginning Feb. 22, 1944, top of nail in washer on northwest corner of 8- by 14-inch timber at northwest corner of windmill tower, 0.75 foot above land-surface datum. Measuring point beginning Sept. 20, 1944, top south edge of 8-inch casing, 0.54 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 24.18; June 10, 24.52 (pumping); Sept. 20, 24.93.

5.8.30.121 (*941, p. 278; 949, p. 342; 991, p. 302). Reference point beginning Feb. 23, 1944, top of Geological Survey washer in base of tree, southeast side, 20 feet west of well, 0.19 foot below land-surface datum. Measuring point beginning Feb. 23, 1944, top edge of Geological Survey washer in 2- by 4-inch board on west side of well curb, 1.71 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 24.73; June 10, 24.87; Sept. 21, 24.97.

5.8.32.333 (*941, p. 278; 949, p. 342; 991, p. 302). Frank Meder. Measurements discontinued.

5.8.36.341 (*941, p. 279; 949, p. 342; 991, p. 302). Mrs. Iva Dena Moe. Water levels, in feet below land-surface datum, 1944: Feb. 22, 45.36; June 10, 45.38; Sept. 20, 45.43.

5.9.31.331 (*941, p. 279; 949, p. 342; 991, p. 302). G. L. McBeth. Water levels, in feet below land-surface datum, 1944: Feb. 22, 32.69; June 10, 32.77; Sept. 20, 32.85.

5.10.27.444 (*941, p. 279; 949, p. 342; 991, p. 302). Reference point beginning Feb. 23, 1944, top of inner concrete wall of stock tank 25 feet east of well, at iron rivets, 3.67 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 40.54; June 10, 40.56; Sept. 21, 40.53.

6.8.1.244 (*941, p. 279; 949, p. 342; 991, p. 302). Reference point beginning Feb. 22, 1944, top of angle iron anchor to southeast leg of windmill tower, 1.23 feet above land-surface datum. Measuring point raised to 1.03 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 20.95; June 8, 21.05; Sept. 20, 20.96.

6.8.3.221 (*941, p. 279; 949, p. 342; 991, p. 302). Ellison Timmins. Reference points beginning Feb. 24, 1944: (1) Top of Geological Survey washer in plank at northeast base of shed, 7 feet south of well, 0.22 foot below land-surface datum; (2) top of 2- by 2-inch stake on south side of fence post, 60 feet north of well, 0.10 foot above land-surface datum. Former measuring point destroyed. Measuring point beginning Sept. 20, 1944, top south edge of oil drum casing in well, 0.18 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 26.75; June 9, 26.65; Sept. 20, 26.79.

6.8.11.433 (*941, p. 279; 949, p. 342; 991, p. 303). Pablo Lucero. Reference point beginning Feb. 23, 1944, top of nail in Geological Survey washer in 2- by 2-inch stake at base of telephone pole 70 feet westerly from well, 1.36 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 6.05; June 11, 6.03; Sept. 21, 7.74.

6.8.12.133 (*941, p. 279; 949, p. 347; 991, p. 303). Aurileo Brito. Reference point beginning Feb. 24, 1944, top of 2- by 2-inch stake on east side of clothesline post, 8 feet southwest of well, level with land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 17.60; June 9, 17.62; Sept. 20, 18.54.

6.8.15.444 (*941, p. 279; 949, p. 342; 991, p. 303). Estancia Cemetery. Water levels, in feet below land-surface datum, 1944: Feb. 23, 30.26; June 11, 30.02; Sept. 21, 30.66.

6.8.16.222 (*941, p. 279; 949, p. 342; 991, p. 303). McGee Estate. Reference point beginning Feb. 23, 1944, top of projecting ledge on concrete foundation at southeast corner of garage, 18 feet northwest of well, 0.32 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 58.66; June 11, 58.66; Sept. 21, 58.70.

6.8.24.111 (*941, p. 279; 949, p. 342; *991, p. 303). Aurileo Brito. Reference point beginning Feb. 22, 1944, top of rock embedded in concrete foundation of stock tank on east side of well under overflow pipe at northwest side of tank, 0.04 foot below land-surface datum. Measuring point beginning Sept. 21, 1944, top surface of oil drum over well, 2.52 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 22, 8.87; June 10, 8.74; Sept. 21, 11.58.

6.8.27.134 (*941, p. 280; 949, p. 342; 991, p. 303). R. M. Spruill. Water levels, in feet below land-surface datum, 1944: Feb. 23, 20.08; June 10, 19.98; Sept. 21, 20.49.

6.8.30.434 (*941, p. 280; 949, p. 342; 991, p. 303). J. W. Langley. Water levels, in feet below land-surface datum, 1944: Feb. 23, 28.30; June 10, 35.30; Sept. 21, 35.71.

6.9.9.222 (*941, p. 280; 949, p. 342; 991, p. 303). Reference point beginning Feb. 24, 1944: (1) Top of belt in southeast leg of windmill tower, 1.38 feet above land-surface datum; (2) top edge of metal stock tank at seam, 4.5 feet south of well, 2.25 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 9.34; June 10, 19.88 (pumping recently); Sept. 20, 8.58.

6.10.25.344 (*941, p. 280; 949, p. 342; 991, p. 303). C. A. Blackwell. Water levels, in feet below land-surface datum, 1944: Feb. 23, 41.95; June 10, 41.89.

6.10.27.444 (*941, p. 280; 949, p. 342; 991, p. 303). Major Dean. Formerly owned by Fred Lick. Reference point beginning Feb. 23, 1944, center of diamond-shaped cut in west side of concrete base of steel stock tank, 14 feet east of well, 0.59 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 23, 20.40; June 10, 20.45; Sept. 21, 20.43.

7.7.12.342 (*941, p. 280; 949, p. 342; 991, p. 303). DeHart Estate. Reference point beginning Feb. 24, 1944, top of northwest corner of concrete foundation 45 feet south of well, near anchor bolt, 0.84 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 40.43; June 9, 40.82; Sept. 19, 40.49.

7.7.12.444 (*941, p. 280; 949, p. 342; 991, p. 303). C. B. Roland. Water levels, in feet below land-surface datum, 1944: Feb. 24, 42.68; June 9, 42.65; Sept. 19, 42.41.

7.8.1.231 (*941, p. 280; 949, p. 342; 991, p. 303). Myrtle A. Homan Estate. Reference point beginning Feb. 24, 1944, top of limestone boulder, 23 feet north of well, 0.46 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 26.27 (nearby well pumping); June 8, 26.56 (nearby well pumping); Sept. 19, 26.36.

7.8.1.423 (*941, p. 280; 949, p. 342; 991, p. 303). Floyd Stump. Water levels, in feet below land-surface datum, 1944: Feb. 24, 24.70; June 8, 24.95; Sept. 19, 24.72.

7.8.9.444 (*941, p. 280; 949, p. 343; 991, p. 303). Reference point beginning Feb. 24, 1944, top of 2- by 2-inch stake, 42 feet north of well, 0.16 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 59.09; June 9, 58.97; Sept. 19, 58.90.

7.8.10.221 (*941, p. 280; 949, p. 343; 991, p. 303). H. W. Rice. Reference points beginning Feb. 24, 1944: (1) Top of lower bolt in post on west side of window, 7 feet northwest of well, 0.76 foot above land-surface datum; (2) top of nail driven near the bottom of a 6- by 6-inch timber, 10 feet north of well, 0.15 foot above land-surface datum. Measuring point lowered Sept. 19, 1944, to 0.17 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 16.55; June 9, 16.60; Sept. 19, 16.45.

7.8.10.244 (*941, p. 280; 949, p. 343; *991, p. 303). Ted Maxfield. Reference point beginning Feb. 24, 1944, top surface of concrete stock tank 40 feet east of well, at southeast corner, 1.01 feet above land-surface datum. Former measuring point destroyed. Measuring point beginning June 9, 1944, top edge of Geological Survey washer nailed in east edge of west 2- by 17-inch timber lying flat on ground at center of well, 0.16 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 20.11 (pumping recently); June 9, 17.55; Sept. 19, 21.62 (pumping).

7.8.12.433 (*941, p. 280; 949, p. 343; 991, p. 303). W. A. Deatherage. Reference point beginning Feb. 24, 1944, top surface of concrete threshold to back door of house, under screen hinge, 20 feet southeast of well, 1.74 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 22.05; June 8, 22.17; Sept. 20, 22.20.

7.8.16.422 (*941, p. 281; 949, p. 343; 991, p. 304). B. F. Strotman. Water levels, in feet below land-surface datum, 1944: Feb. 24, 44.32; Sept. 20, 44.23.

7.8.23.311 (*941, p. 281; 949, p. 343; 991, p. 304). James P. Morgan. Reference points beginning Feb. 24, 1944: (1) Top of south side of concrete discharge apron just east and 1.5 feet south of discharge pipe, 0.20 foot above land-surface datum; (2) top of center bolt on south side of concrete engine base, 25 feet west of well, 1.79 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 17.94; June 9, 18.01; Sept. 20, 18.22.

7.8.23.324 (*941, p. 281; 949, p. 343; 991, p. 304). James P. Morgan. Reference point beginning Feb. 24, 1944, top of main part of concrete engine base, 25 feet west of well, at southeast corner of smaller elevated part of base, 0.79 foot above land-surface datum. Water level, in feet below land-surface datum, 1944: Feb. 24, 2.19.

7.8.24.433 (*941, p. 281; 949, p. 343; 991, p. 304). R. T. Floyd. Reference points beginning Feb. 24, 1944: (1) Top of 4- by 6-inch timber under pump column-pipe clamps, west side of well, 0.25 foot below land-surface datum; (2) top of nail in Geological Survey washer in leg of abandoned windmill tower, 10 feet southeast of well, 1.87 feet above land-surface datum. Measuring point beginning Sept. 20, 1944, top of casing, 0.60 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 24.65; June 9, 24.46; Sept. 20, 24.46.

7.8.25.411 (*941, p. 281; 949, p. 343; *991, p. 304). R. T. Floyd. Reference point beginning Feb. 24, 1944, top of 2- by 2-inch stake on south side of fence post, 20 feet north of well, 0.18 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 21.47; June 8, 21.50; Sept. 20, 21.59.

7.8.26.121 (*991, p. 304). Mrs. T. M. McCloskey. Equipped with water stage recorder. Reference point beginning Feb. 24, 1944, top of 2- by 2-inch stake on south side of fence post, 18 feet northeast of well, 0.07 foot below land-surface datum. Highest and lowest recorded water levels, in feet below land-surface datum, 1944: Apr. 16, 3.50; Sept. 24, 5.96.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.44	3.98	3.65	3.54	3.54	4.02	4.80	5.31	5.34	5.67	4.98	4.64
2	4.42	3.91	3.64	3.54	3.54	4.05	4.82	5.35	5.36	5.67	4.97	4.63
3	4.41*	3.86	3.64	3.55	3.55	4.03	4.84	5.30	5.40	5.65	4.96	4.60
4	4.41	3.84	3.63	3.54	3.56	4.11	4.87	5.42	5.44	5.63	4.94	4.59
5	4.41	3.80	3.62	3.53	3.56	4.14	4.89	5.46	5.47	5.62	4.92	4.59
6	4.40	3.77	3.62	3.53	3.57	4.15	4.90	5.50	5.50	5.61	4.90	4.58
7	4.36	3.74	3.63	3.53	3.58	4.17	4.92	5.52	5.53	5.61	4.89	4.57
8	4.36	3.73	3.62	3.52	3.59	4.18	4.94	5.55	5.56	5.59	4.89	4.56
9	4.35	3.72	3.62	3.51	3.60	4.20	4.96	5.59	5.59	5.58	4.86	4.55
10	4.35	3.73	3.61	3.51	3.62	4.26	4.98	5.61	5.63	5.57	4.85	4.54
11	4.34	3.74	3.60	3.52	3.63	4.27	5.00	5.63	5.67	5.55	4.83	4.54
12	4.34	3.75	3.59	3.52	3.64	4.29	5.03	5.64	5.70	5.53	4.82	4.53
13	4.34	3.74	3.59	3.51	3.66	4.31	5.06	5.65	5.73	5.52	4.81	4.52
14	4.34	3.74	3.58	3.51	3.67	4.33	5.08	5.67	5.76	5.50	4.81	4.51
15	4.34	3.74	3.58	3.51	3.68	4.36	5.11	5.69	5.79	5.48	4.80	4.50
16	4.34	3.73	3.58	3.50	3.69	4.38	5.14	5.73	5.82	5.44	4.79	4.48
17	4.33	3.73	3.57	3.51	3.71	4.41	5.16	5.77	5.84	5.40	4.78	4.46
18	4.32	3.72	3.57	3.52	3.73	4.44	5.19	5.66	5.85	5.34	4.75	4.46
19	4.32	3.71	3.57	3.52	3.75	4.47	5.18	5.37	5.87	5.29	4.75	4.44
20	4.31	3.71	3.56	3.51	3.77	4.50	5.16	5.25	5.89	5.25	4.75	4.42
21	4.29	3.70	3.56	3.51	3.79	4.52	5.11	5.22	5.90	5.23	4.74	4.42
22	4.27	3.70	3.57	3.52	3.82	4.55	5.09	5.21	5.92	5.20	4.74	4.42

7.8.26.121. Mrs. T. M. McCloskey--Continued.

Highest daily water level, in feet below land-surface datum, 1944
(From recorder charts)

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
23	4.21	3.69	3.57	3.52	3.84	4.58	5.09	5.21	5.94	5.18	4.71	4.41
24	4.13	3.67	3.56	3.52	3.87	4.61	5.09	5.23	5.96	5.15	4.69	4.39
25	4.11	3.66	3.55	3.52	3.89	4.64	5.10	5.25	5.91	5.13	4.69	4.39
26	4.10	3.66	3.55	3.52	3.92	4.66	5.12	5.27	5.84	5.11	4.69	4.38
27	4.10	3.65	3.55	3.53	3.94	4.68	5.15	5.29	5.79	5.08	4.68	4.37
28	4.10	3.65	3.55	3.53	3.95	4.71	5.18	5.30	5.74	5.06	4.67	4.35
29	4.08	3.65	3.55	3.53	3.96	4.75	5.22	5.30	5.70	5.05	4.66	4.33
30	4.07	....	3.55	3.53	3.98	4.78	5.25	5.31	5.68	5.03	4.65	4.32
31	4.03	....	3.54	....	4.00	....	5.28	5.33	....	5.01	....	4.32

7.8.27.221 (*941, p. 282; 949, p. 343; 991, p. 304). Wagner Estate. Reference points beginning Feb. 24, 1944: (1) Top of nail in Geological Survey washer at southeast corner of house, on porch floor, 15 feet west of well, 0.95 foot above land-surface datum; (2) top of pipe driven in ground at northeast corner of house, 2.70 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 19.45; June 9, 19.47; Sept. 20, 19.65.

7.8.33.123 (*941, p. 282; 949, p. 344; 991, p. 304). B. A. Kincheloe. Reference point beginning Feb. 24, 1944, top of nail in Geological Survey washer set in short cedar post in fence line 45 feet west of well, 0.65 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 30.60; June 9, 30.55; Sept. 20, 30.28.

7.8.33.424 (*941, p. 282; 949, p. 344; 991, p. 305). E. C. Hays Estate. Reference points beginning Feb. 24, 1944: (1) Top of bolt head in southwest leg of windmill tower, 0.72 foot above land-surface datum; (2) top of lone post 20 feet east of well, 3.11 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 52.84; June 9, 52.86; Sept. 20, 52.85.

7.8.35.111 (*941, p. 282; 949, p. 344; 991, p. 305). W. W. Dunn. Formerly owned by Homer Voss. Reference points beginning Feb. 24, 1944: (1) Top of concrete curb at southwest corner, on zero of year 1940 cut in concrete, 1.12 feet above land-surface datum; (2) top of casing, south side, 0.35 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 18.74; June 9, 18.75; Sept. 20, 18.57.

7.8.35.332 (*941, p. 282; 949, p. 344; 991, p. 305). W. W. Dunn. Formerly owned by Homer Voss. Reference point beginning Feb. 24, 1944, top of nail in Geological Survey washer in post 20 feet south of well, 0.53 foot above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 15.50; June 9, 15.54; Sept. 20, 15.64.

7.9.5.211 (*941, p. 282; 949, p. 344; 991, p. 305). Reference points, beginning Feb. 24, 1944: (1) Top of tee on pipe driven in ground 5 feet east of well, 0.51 foot above land-surface datum; (2) top of 2- by 2-inch stake at post 20 feet southeast of well, 0.07 foot below land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 24, 19.12; June 8, 19.08; Sept. 19, 19.22.

7.9.10.333 (*941, p. 282; 949, p. 344; 991, p. 305). Mrs. Minnie Farnsworth. Water levels, in feet below land-surface datum, 1944: June 9, 15.83 (pumping); Sept. 20, 15.55.

8.8.10.244 (*941, p. 282; 991, p. 305). Dennis Willie. Water levels, in feet below land-surface datum, 1944: Feb. 25, 65.43; June 8, 65.72 (pumping recently).

8.8.26.222 (*941, p. 282; 949, p. 344; 991, p. 305). Water levels, in feet below land-surface datum, 1944: Feb. 25, 6.79; June 8, 6.84; Sept. 19, 6.92.

8.9.8.111 (*941, p. 282; 949, p. 344; 991, p. 305). Reference points beginning Feb. 25, 1944: (1) Top of 8- by 8-inch timber at southwest corner of well at copper nail, 0.48 foot above land-surface datum; (2) top of post at southwest corner of well, 2.25 feet above land-surface datum. Water levels, in feet below land-surface datum, 1944: Feb. 25, 24.96; June 8, 24.94; Sept. 19, 24.99.

8.9.29.111 (*941, p. 282; 949, p. 344; 991, p. 305). Mrs. Harry Bigger. Water levels, in feet below land-surface datum, 1944: Feb. 25, 21.22; June 8, 21.81; Sept. 19, 21.40.

8.9.29.111a (*991, p. 305): Mrs. Harry Bigger. Water levels, in feet below land-surface datum, 1944: Feb. 25, 21.70; June 8, 21.74; Sept. 19, 21.61.

9.8.26.121 (*941, p. 282; 949, p. 344; 991, p. 305). Water levels, in feet below land-surface datum, 1944: Feb. 25, 20.88 (pumping recently); June 8, 20.71 (pumping recently); Sept. 19, 21.95.

9.9.32.131 (*941, p. 282; 949, p. 344; *991, p. 305). G. L. Dean. Water levels, in feet below land-surface datum, 1944: June 8, 5.34 (pumping); Sept. 19, 5.13.

9.9.32.131a. G. L. Dean. Used drilled well, equipped with windmill, diameter 10 inches, depth 72 feet. About 50 feet southeast of well 9.9.32.131. Measuring point, top of casing on west side, at land-surface datum. Reference point, top of stump of limb on cedar post forming southeast leg of windmill tower, 1.76 feet above land-surface datum. Water levels, in feet below land-surface datum: Oct. 1, 1943, 7.42; Feb. 25, 1944, 6.68; June 8, 1944, 6.58 (pumping recently).

