Water Levels and Artesian Pressures in Observation Wells in the United States 1954

Part 6. Southwestern States and Territory of Hawaii

Prepared under the direction of A. N. SAYRE, *Chief, Ground Water Branch*

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Arizona, California, Nevada, and New Mexico, with the Territory of Hawaii, and with other agencies, by personnel of the Water Resources Division under the direction of:

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Part 6. SOUTHWESTERN STATES

INTRODUCTION

By A. N. Sayre

The publication of records of water levels and artesian pressures annually in the United States was begun by the Geological Survey in 1935. Prior to 1940 the records for each year were published in a single volume--1935, 777; 1936, 817; 1937, 840; 1938, 845; 1939, 886. Since 1940, records have been published in six annual volumes, covering the northeastern, southeastern, north-central, south-central, northwestern, and southwestern sections of the country. Hawaii is included in the southwestern section. The following table gives the numbers of Water-Supply Papers from 1940 through 1954.

Year	North-eastern (1)	South-eastern (2)	North-central (3)	South-central (4)	North-western (5)	South-western (6)
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
1945	1023	1024	1025	1026	1027	1028
1946	1071	1072	1073	1074	1075	1076
1947	1096	1097	1098	1099	1100	1101
1948	1126	1127	1128	1129	1130	1131
1949	1156	1157	1158	1159	1160	1161
1950	1165	1166	1167	1168	1169	1170
1951	1191	1192	1193	1194	1195	1196
1952	1221	1222	1223	1224	1225	1226
1953	1265	1266	1267	1268	1269	1270
1954	1321	1322	1323	1324	1325	1326

The objectives of the observation-well program are to provide a day-to-day evaluation of available ground-water supplies, to facilitate the prediction of trends in ground-water levels that will indicate the probable status of important ground-water supplies in the future, to delineate present or potential areas of detrimentally high or low ground-water levels, to aid in the prediction of the base flow of streams, to determine the several forces that act on a ground-water body, and to demonstrate the interplay of those forces in the ground-water regimen, to furnish information for use in basic research, and to provide long-term continuous records of fluctuations of water levels in representative wells. These selected records serve as a framework to which many short-term records collected during an intensive investigation may be related.

Water levels in wells are seldom stationary but move up or down a fraction of an inch or many feet within a short time. Water-table wells may be influenced by direct recharge from precipitation, withdrawals from wells or springs, transpiration by vegetation, evaporation from the soil, and changes in atmospheric pressure. Artesian wells are influenced over large areas by changes in the rate of pumping from other wells, changes in atmospheric pressure, earthquakes, ocean tides, earth tides, and recharge from precipitation, although the recharge may not be noticeable immediately. When accurate comparisons of water levels are made it is desirable to apply corrections for these influences, several of which may be compensating or additive according to the conditions at those particular times.

Water-level measurements are given in feet with reference to land-surface datum or sea-level datum. Land-surface datum is a precise datum plane that is approximately at land surface at each well. Mean sea level (msl) is the datum plane on which the national network of precise levels is based. When some measurements in a table are above and others are below the plane of reference, a plus (+) or minus (-) sign is placed immediately before the first entry in each column. Readings between plus signs are above the plane of reference and those between minus signs are below the plane of reference.

For the most part, discussions of precipitation in this report are based on data furnished by the United States Weather Bureau.

Measurements of water levels and artesian pressures in wells were made under the direction of the district supervisors of the Ground Water Branch in the several States.

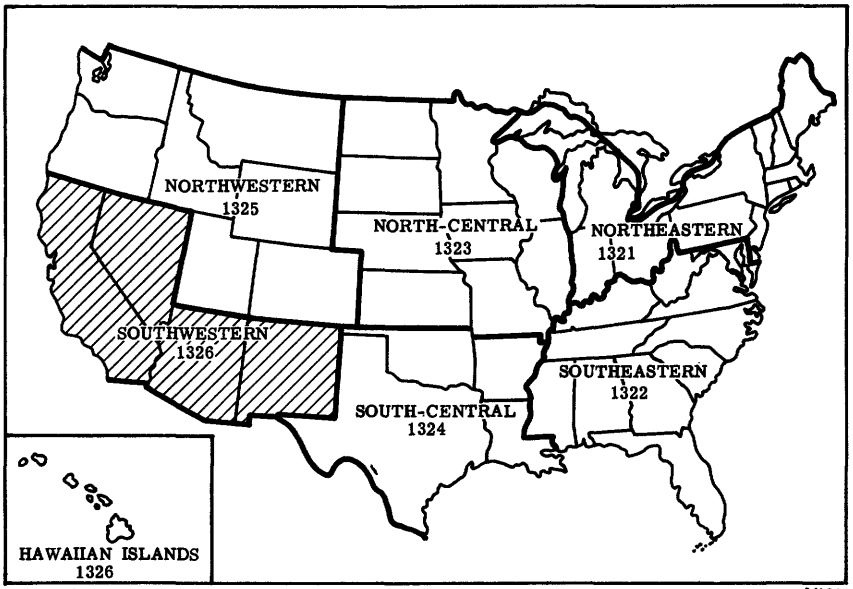


Figure 1.--Outline map of the United States showing areas included in each of the six water-supply papers on water levels and artesian pressures in observation wells in 1954. The shaded area indicates the States included in this volume.

Verda M. Dougherty was responsible for the compilation of the report and Rodney Hart edited the illustrations.

ARIZONA

By P. W. Johnson, N. D. White, and H. N. Wolcott

Scope of Water-Level Program

The collection of water-level and discharge measurements at wells and springs constitutes an integral part of ground-water investigations in Arizona. A substantial part of the financial cooperation with the Arizona State Land Department is for the collection of these basic data. The State cooperative program also includes continued investigations of the geology and ground-water resources in specific areas, such as those presently being conducted in the Palomas Plain and Harquahala Plains. The program of cataloging and analyzing drill cuttings from deep wells was continued in 1954 in cooperation with the State Land Department, the University of Arizona, and the Museum of Northern Arizona. A preliminary report on the investigation of springs along the Mogollon Rim was completed as part of a long-range project of evaluating the water resources in central Arizona. Work on the Navajo, Hopi, and Papago Indian Reservations was continued in financial cooperation with the Bureau of Indian Affairs. The program of periodic resampling of water from selected wells was continued during 1954 for the purpose of maintaining a record of the changes in the quality of ground water in the State.

During 1954, 15 wells in Arizona were measured monthly in connection with the nationwide Federal observation-well program. Water-level measurements were made in about 1,850 wells during the year, recording gages were maintained on 9 wells, and the rate of discharge in gallons per minute was measured in about 560 wells. About 6,000 irrigation wells were in use in the State during 1954. This estimate does not include wells equipped with pumps rated 5 horsepower or less. Figures 2-15 show the location of observation wells in Arizona.

This report includes tabulations of water-level measurements from a few selected wells to show typical fluctuations in the stage of the water table in the ground-water basins of the State in 1954. Graphs are included to show representative 1954 water-level fluctuations in relation to those of previous years. Water-level measurements not included in this report are available in the open files in the offices of the U. S. Geological Survey, Ground Water Branch, at Tucson and Phoenix.

The following reports on the ground-water resources of Arizona were released to the open file in 1954:

Preliminary report of investigations of springs in the Mogollon Rim region, Arizona, by J. H. Feth, with sections on base flow of streams by N. D. White and quality of water by J. D. Hem, mimeographed, 77 p., 5 pl., 24 figs.

Ground-water field trip, Tucson to Nogales, Ariz., by D. R. Coates and L. C. Halpenny, mimeographed, 20 p., 1 pl.

Pumpage and ground-water levels in Arizona in 1953, by L. C. Halpenny and others, mimeographed, 27 p., 11 figs.

Bidahochi formation of Arizona and New Mexico, by C. A. Repenning and J. H. Irwin: Am. Assoc. Petroleum Geologists Bull., v. 38, no. 8, p. 1821-1826.

Water resources of the Chuska Mountains area, Navajo Indian Reservation, Ariz. and N. Mex., by J. W. Harshbarger and C. A. Repenning: U. S. Geol. Survey Circ. 308, 16 p., 1 pl., 1 fig., 6 tables.

Geology and ground-water supplies of the Fort Wingate Indian School area, McKinley County, N. Mex., by J. T. Callahan and R. L. Cushman: U. S. Geol. Survey Circ. 360, 12 p.

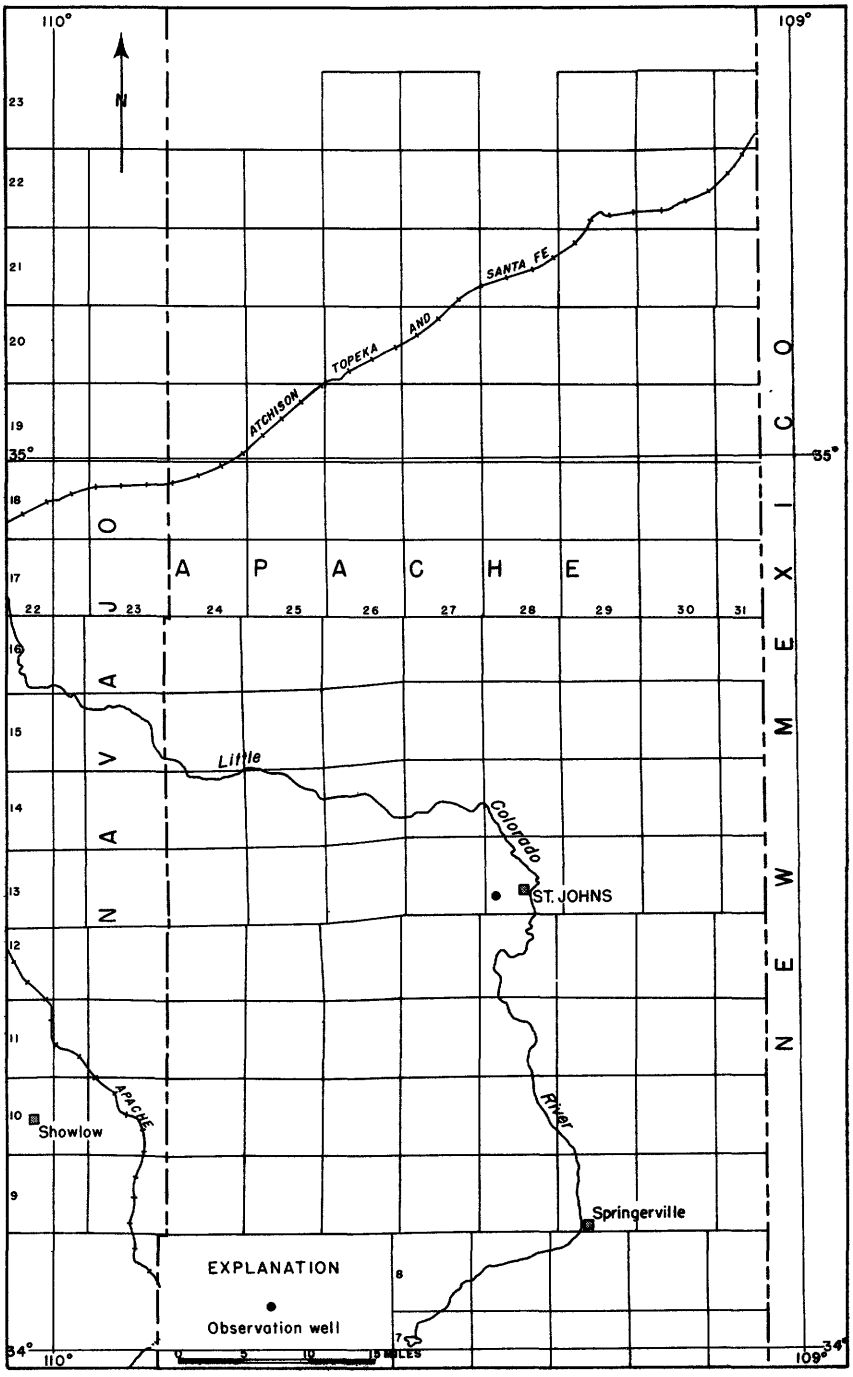


Figure 2.--Location of observation well in Apache County, Ariz., 1954.

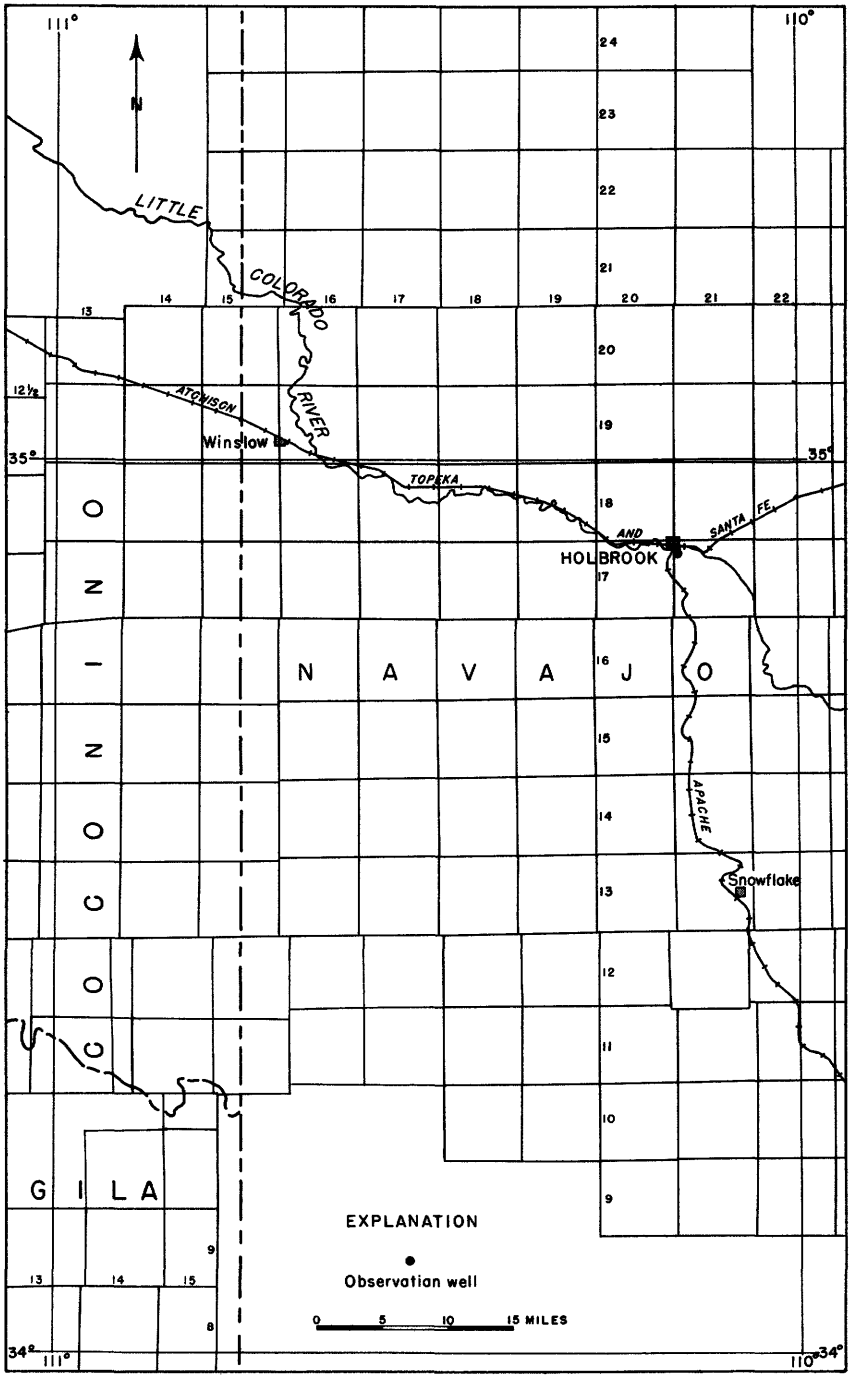


Figure 3. --Location of observation well in Navajo County, Ariz., 1954.

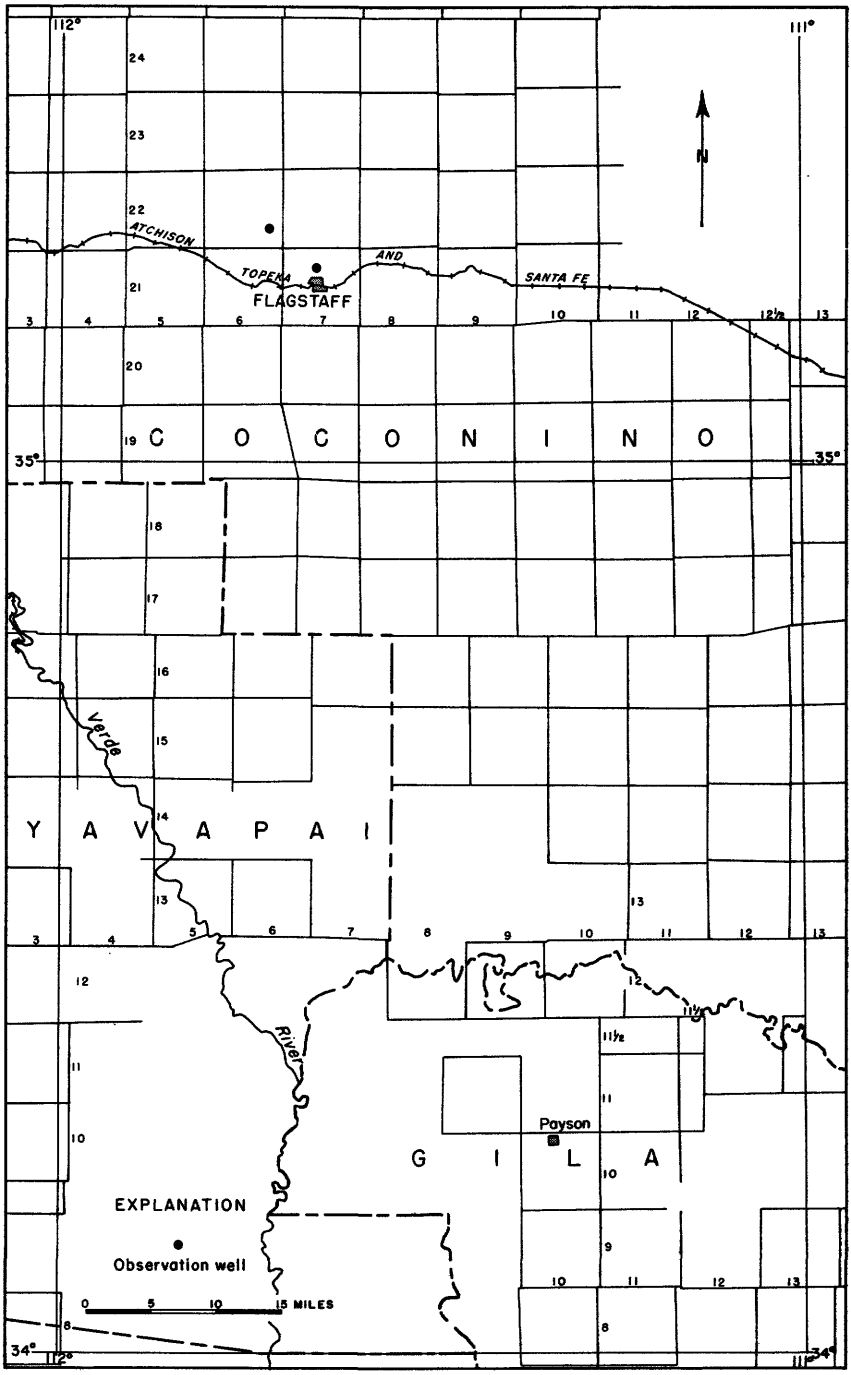


Figure 4. --Location of observation wells in Coconino County, Ariz., 1954.

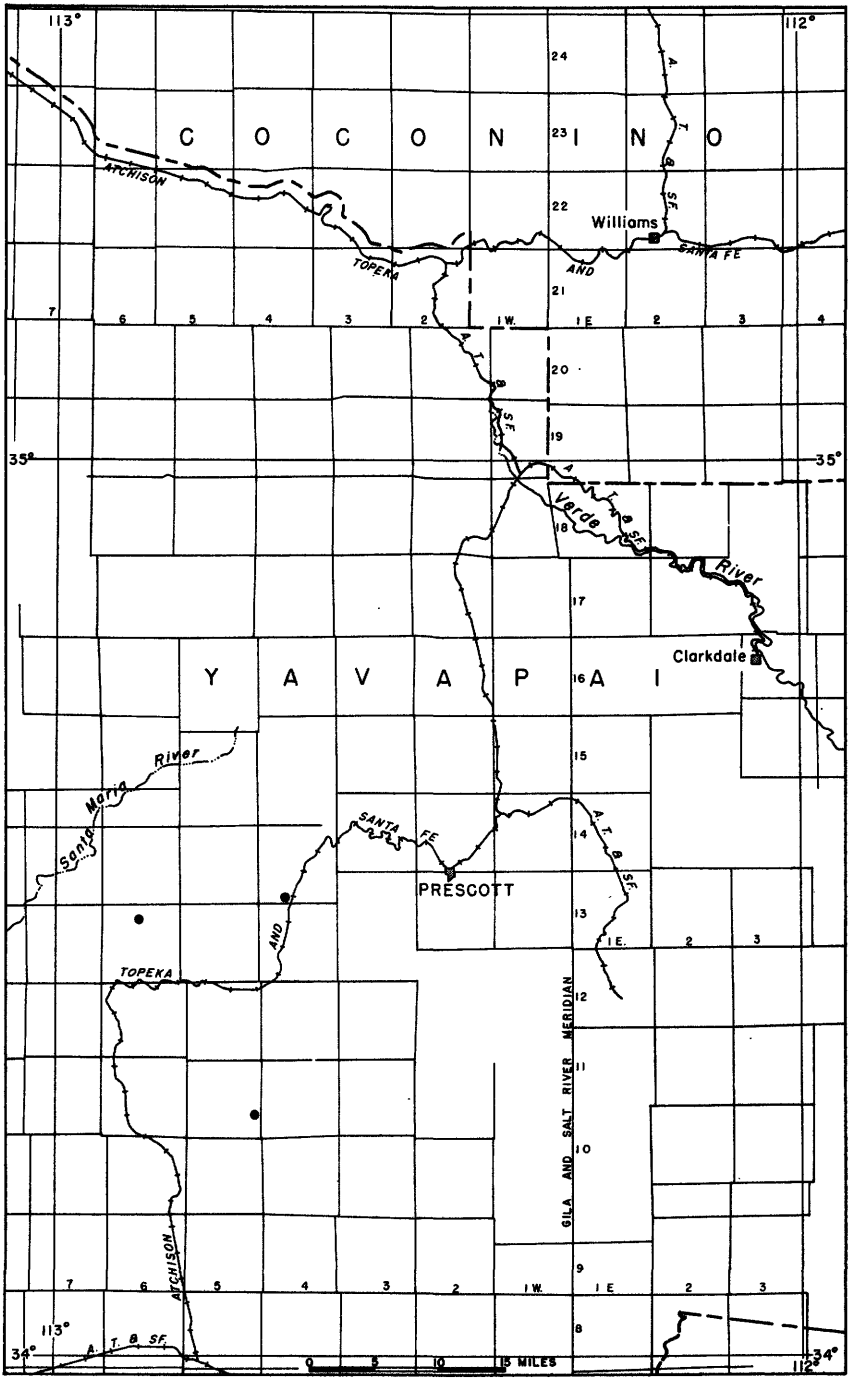


Figure 5. --Location of observation wells in Yavapai County, Ariz., 1954.

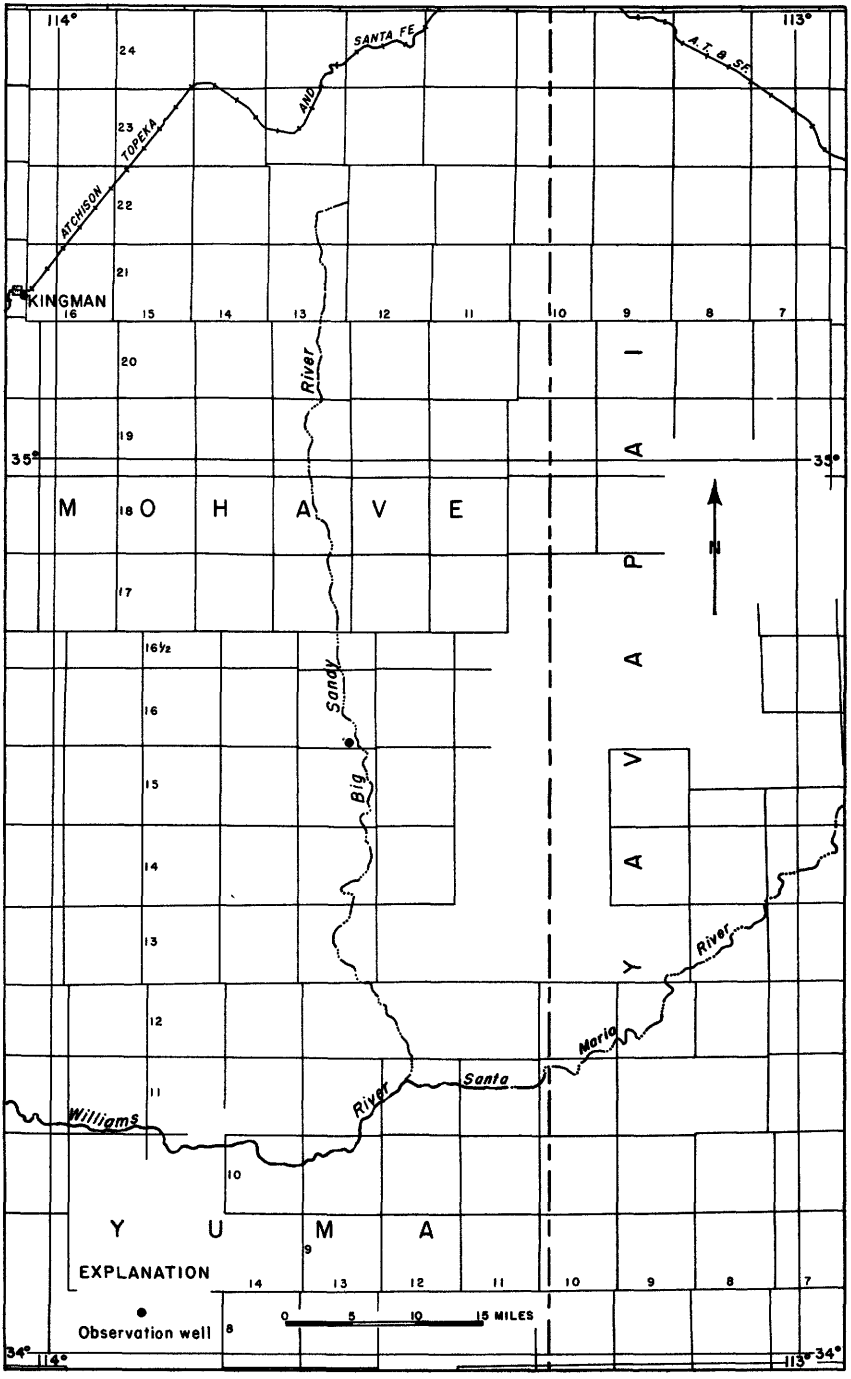


Figure 6. --Location of observation wells in Mohave County, Ariz., 1954.

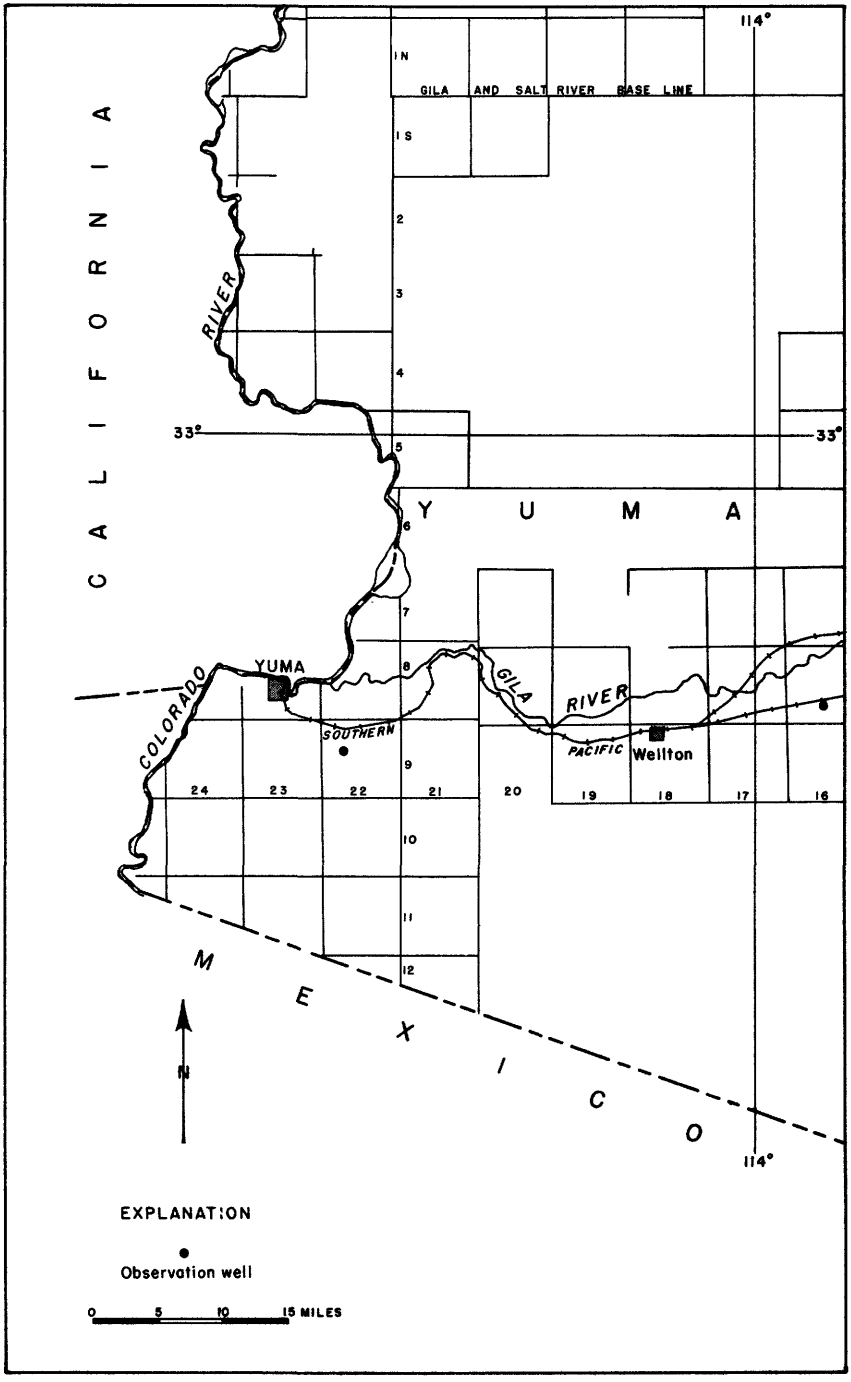


Figure 7.--Location of observation wells in Yuma County, Ariz., 1954.

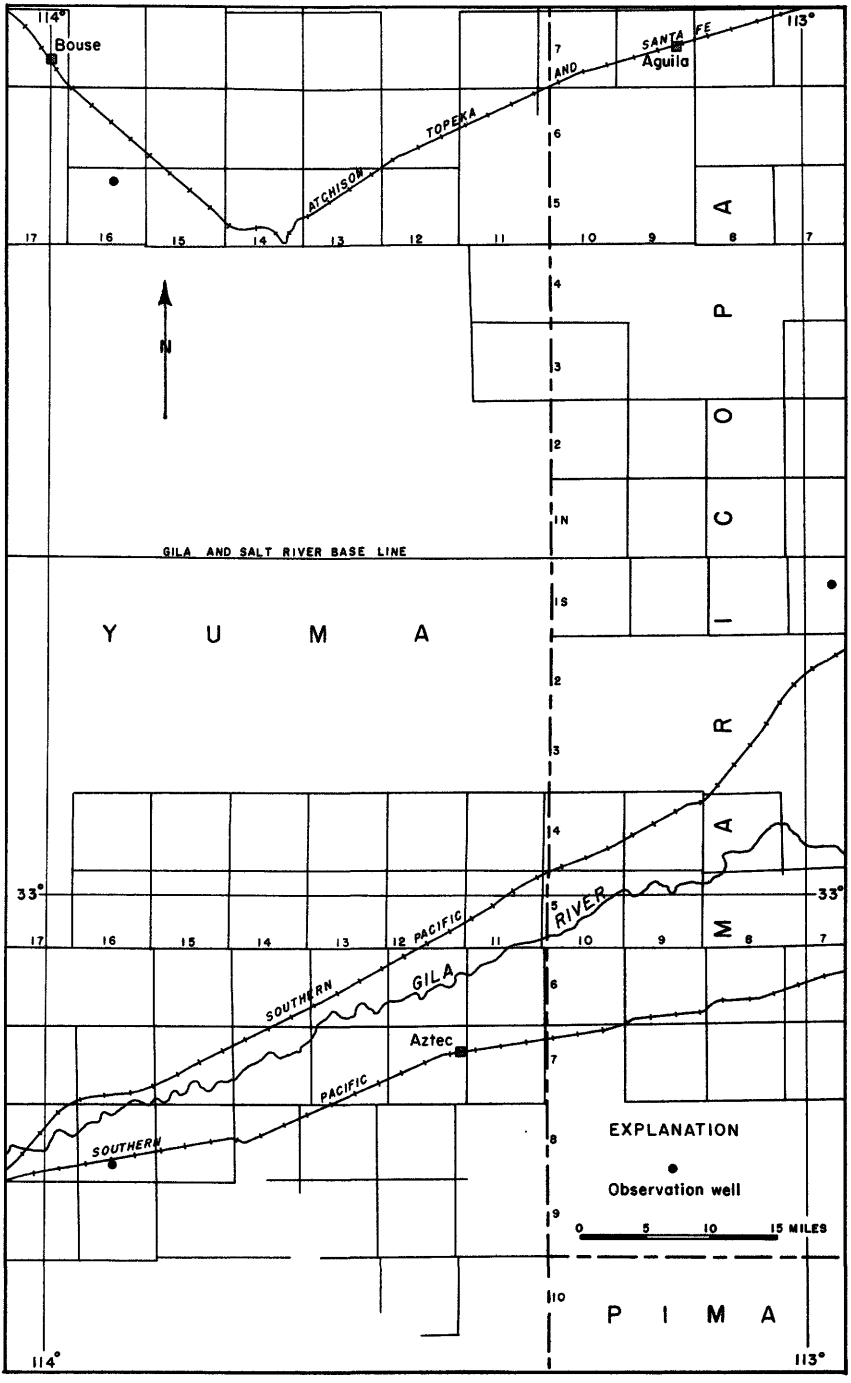


Figure 8. --Location of observation wells in Yuma and Maricopa Counties, Ariz., 1954.

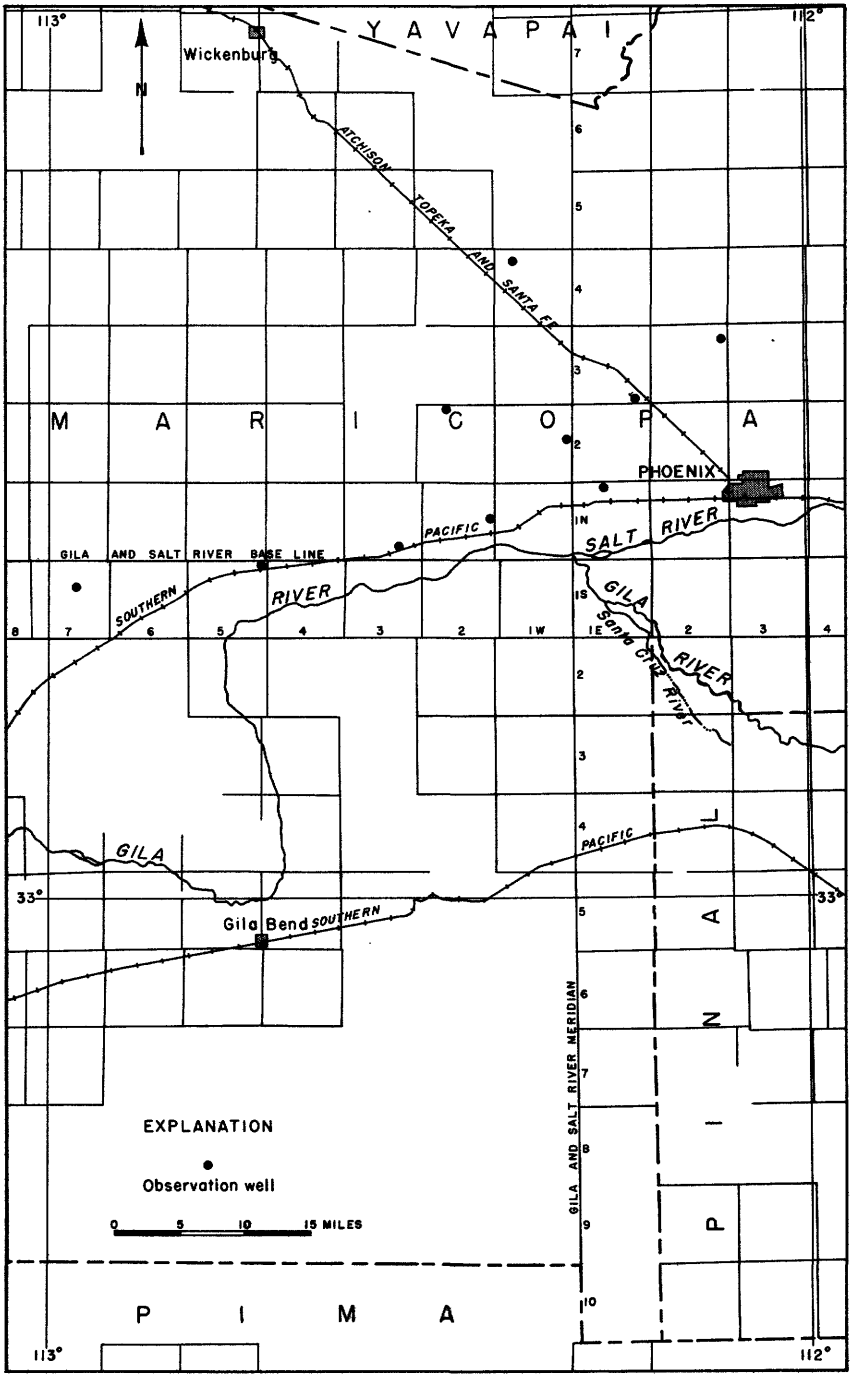


Figure 9.--Location of observation wells in Maricopa County, Ariz., 1954.

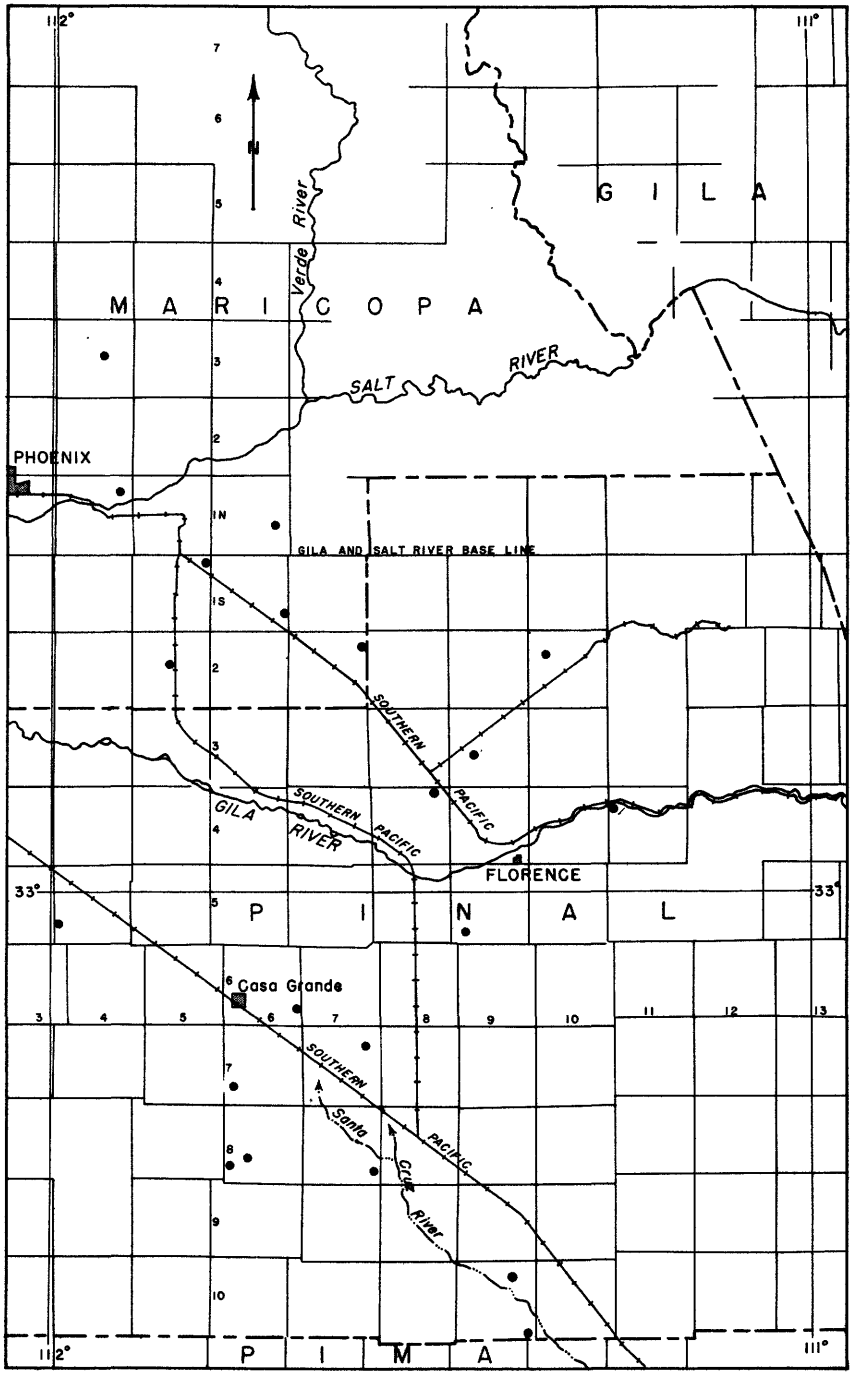


Figure 10. --Location of observation wells in Maricopa and Pinal Counties, Ariz., 1954.

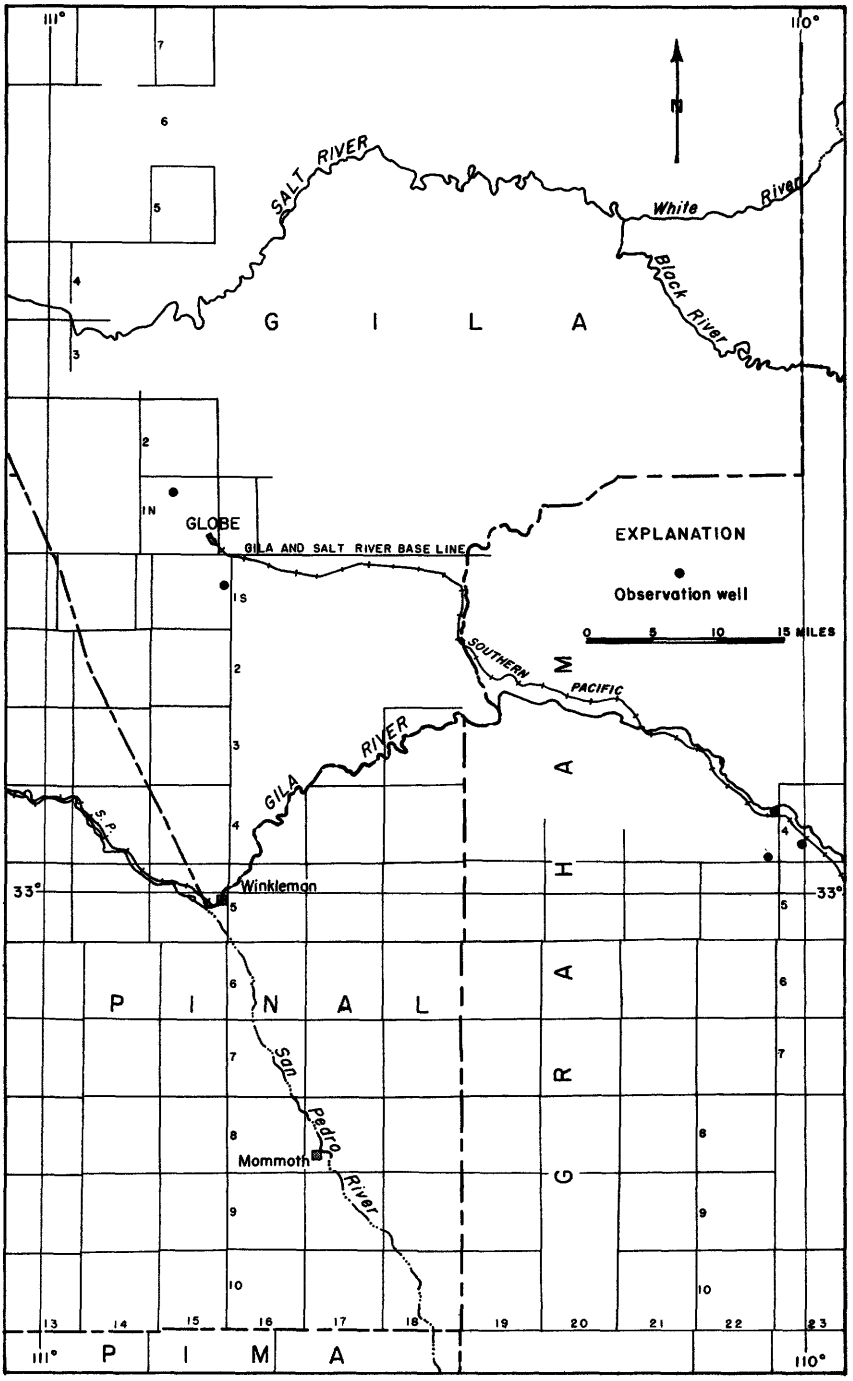


Figure 11. --Location of observation wells in Gila and Graham Counties, Ariz., 1954.

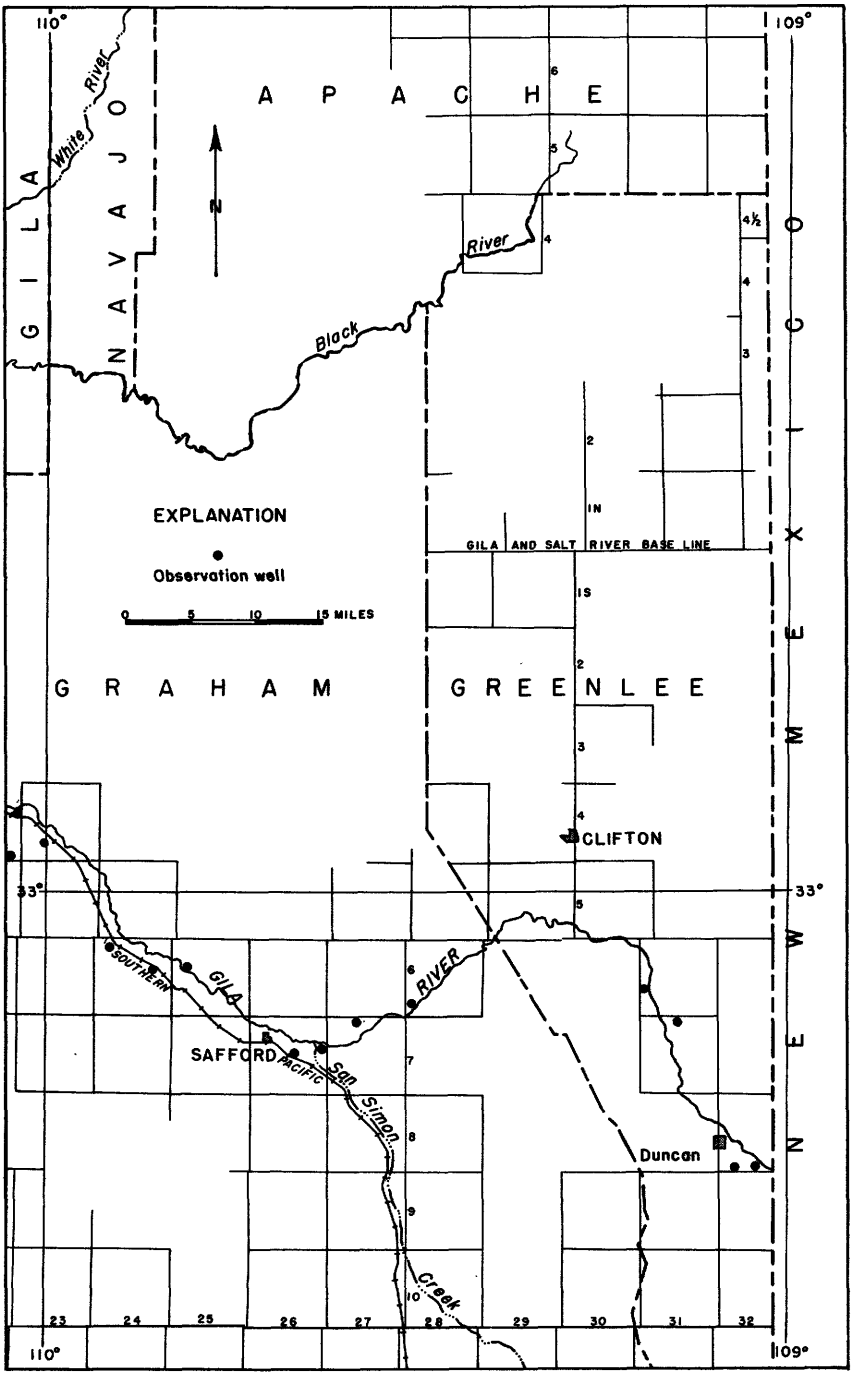


Figure 12. --Location of observation wells in Graham and Greenlee Counties, Ariz., 1954.

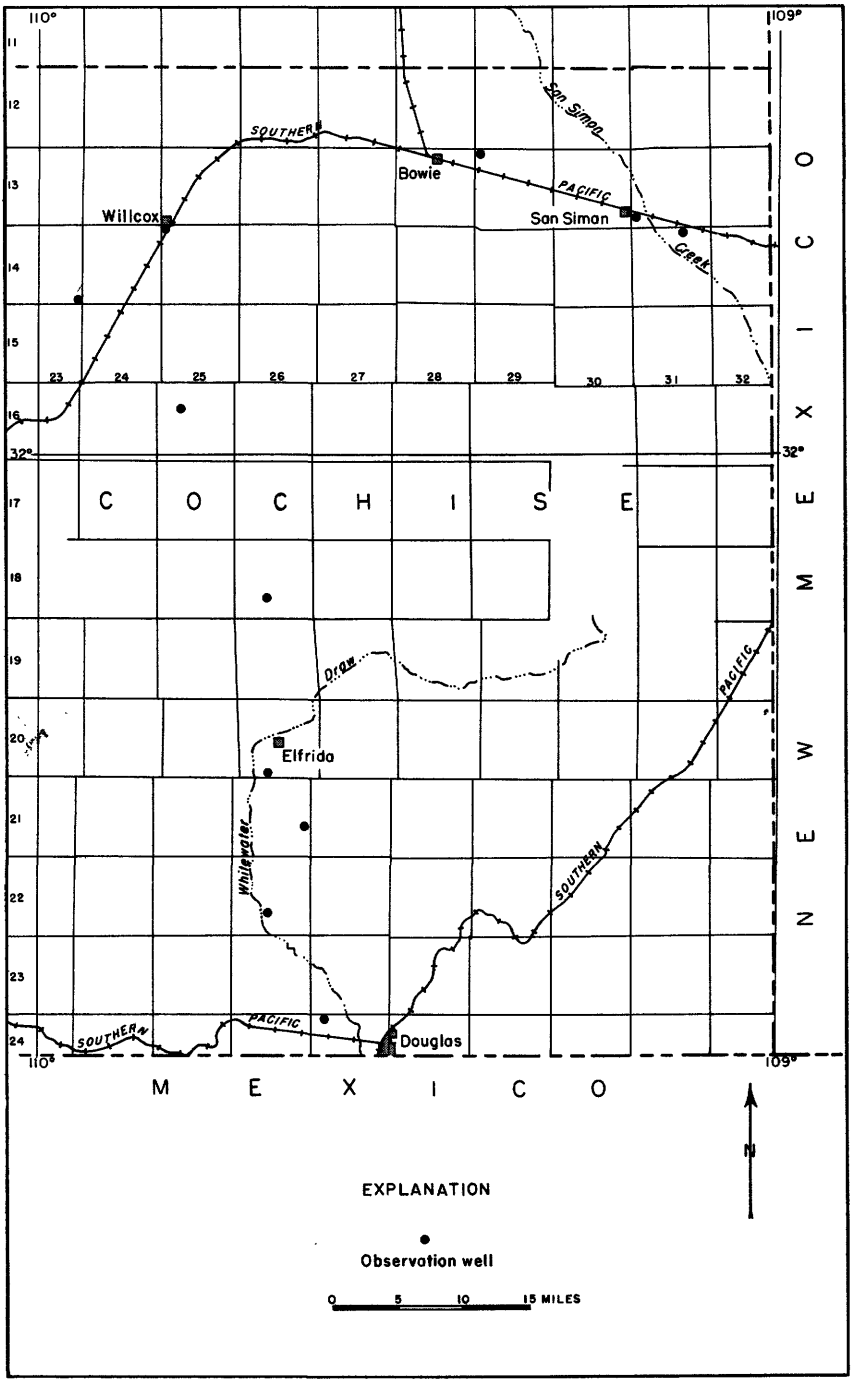


Figure 13. --Location of observation wells in Cochise County, Ariz., 1954.

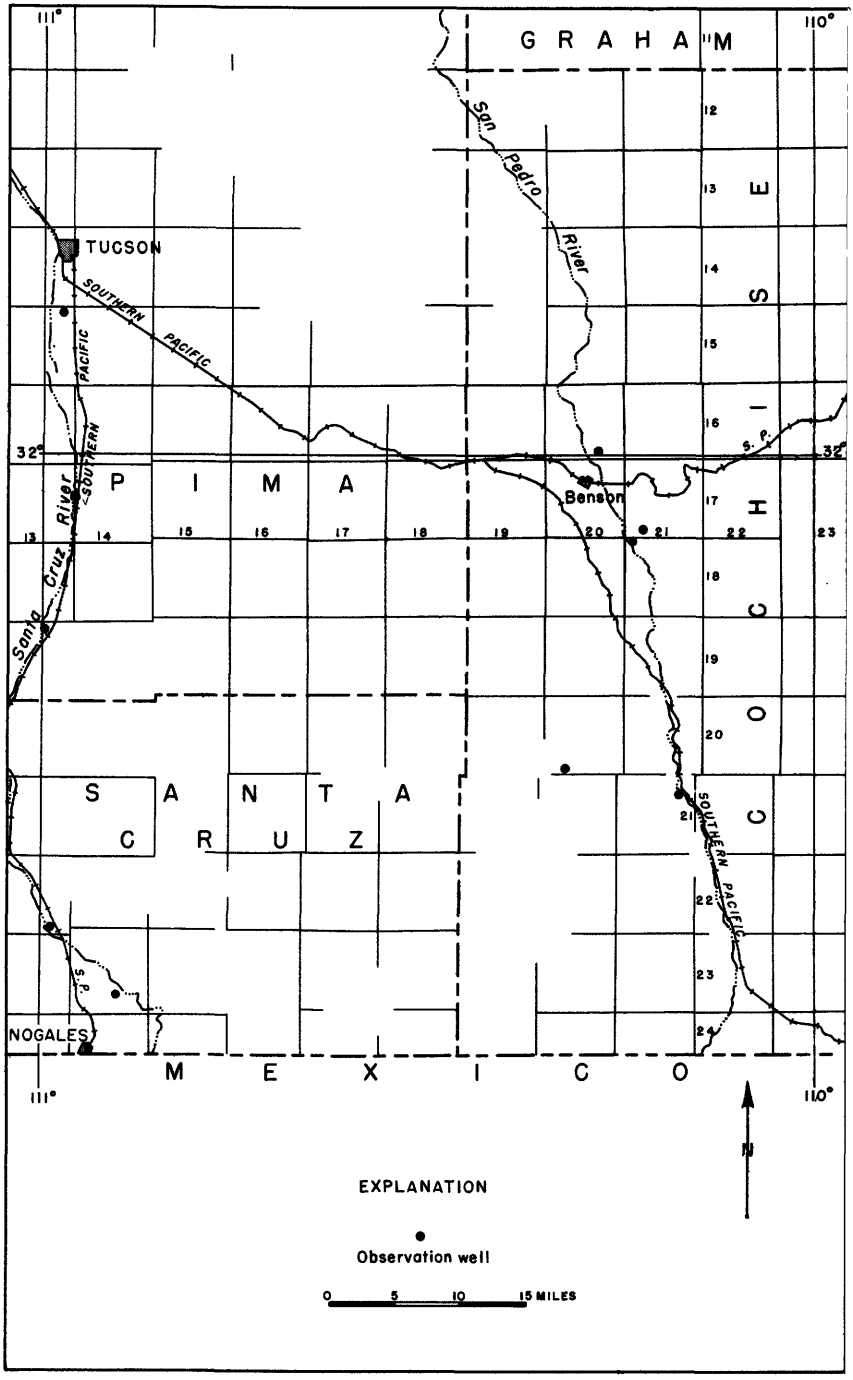


Figure 14. --Location of observation wells in Cochise, Pima, and Santa Cruz Counties, Ariz., 1954.

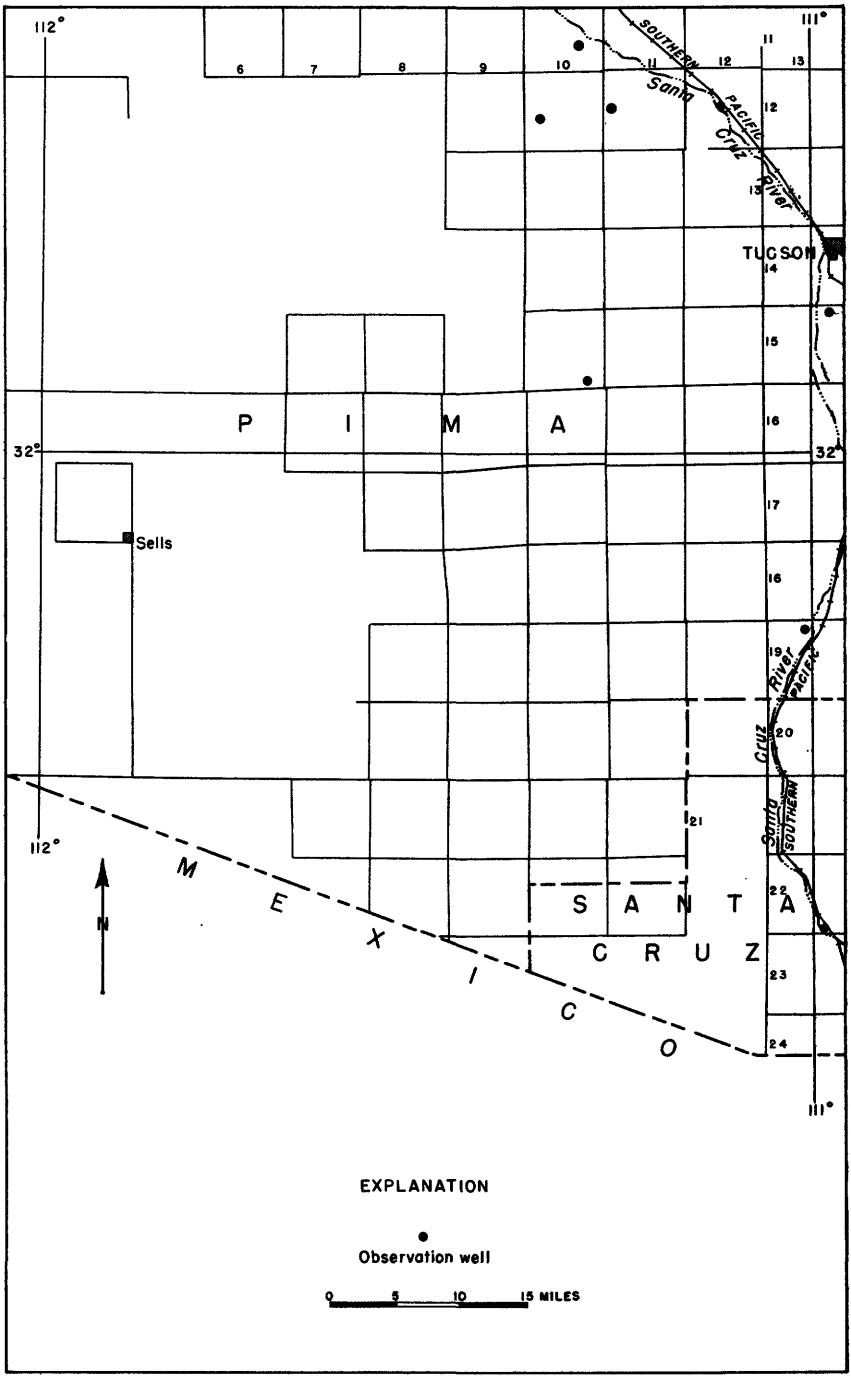


Figure 15. --Location of observation wells in Pima and Santa Cruz Counties, Ariz., 1954.

Memorandum on ground-water investigations in the Sells area, Papago Indian Reservation, Pima County, Ariz., by D. R. Coates, mimeographed, 6 p., 1 pl.

Geologic and ground-water reconnaissance of the Patagonia area, Arizona, by J. H. Feth, typed, 12 p., 1 fig.

Memorandum on ground-water conditions in parts of Tps. 10 and 11 S., Rs. 23 and 24 W., Yuma County, Ariz., by P. W. Johnson, typed, 5 p.

Piping and earthcracks - a discussion, by L. A. Heindl and J. H. Feth: Am. Geophys. Union Trans., v. 35, no. 2, p. 258-262.

Geology and ground-water resources of the Douglas basin, Arizona, by D. R. Coates and R. L. Cushman: U. S. Geol. Survey Water-Supply Paper 1354 (in course of publication).

A report on the geology and ground-water resources of the Gila Bend and Dendora areas has been drafted.

Precipitation

The following, written by R. A. Dightman, is quoted from the Annual Summary, 1954, Climatological Data, U. S. Weather Bureau:

> The year [1954] in Arizona as a whole averaged warmer and drier than normal. Although the summer monthly averages were not far from normal, unusually mild months in January, February, April, October, and November combined to produce a mild year in general. While precipitation averaged a little less than normal statewide, some areas did much better than usual, while some of the normally dry sections were even much drier than usual. A few stations had heavy amounts, while those in the southwest corner were extremely dry. There were a number of severe storms, some of which caused widespread damage.
>
> .... As is usual in the mountainous western states, precipitation varied widely between stations and divisions throughout the year. The State annual average was 11.98 inches, 0.57 inch below normal. By divisions, however, the pattern varied from an average total 19.36 inches, +0.68 inch, in East Central to 2.78 inches, -1.75, in the Southwest. The largest divisional average excess was +0.85 inch in the Southeast, where the average total was 14.02 inches. In the normally dry Southwest Division, 1954 precipitation was only 61 percent of the normal average 4.53 inches, but the East Central Division, normally the wettest area of the State, received 104 percent of the period mean total. In the Northeast Division the 13.45-inch average total was 1.50 inches short of normal. In Northwest, North Central, and South Central Divisions average totals were not far from normal.
>
> The driest single station was Yuma WB Airport, where the yearly total, 0.61 inch, was 2.78 inches below normal, and only 18 percent of the normal 3.39 inches. The Yuma City exposure measured a total of 0.90 inch for the year. Nearly all of the very dry stations for the year were in the Southwest Division, but that is not particularly unusual. Two stations with normals received over 5 inches less than the normal amounts: Aguila, 4.46 inches, -5.09, and Bright Angel Ranger Station, 19.34 inches, -5.91. The largest total was 40.17 inches at Mount Lemmon. The stations with highest totals were mostly in a general area beginning near Nogales on the Mexico Boundary to East Central and North Central Divisions. In this area lay all three stations where totals exceeded normal by more than 5 inches: San Carlos Reservoir, 18.87, +6.15; Oracle 4 SE, 24.44, +5.74; and Patagonia, 22.08, +5.11 inches. In general, it can be noted that 1954 precipitation was at least adequate over most of the State, with the important local exceptions noted above.
>
> .... Damaging storms during 1954 were mainly in the wind, hail, or heavy rain categories -- often accompanied by thunder and lightning. Flooding resulted in a few cases. As a class, hail damage was probably most widespread, but rain-caused floods resulted in concentrated severe damage in a few cases.
>
> .... While as a whole the year was generally favorable for agriculture, there were some important local exceptions in addition to the storms described above. In the Salt River valley, there was some freeze damage to citrus fruits early in January. Heavy frost around and in Oak Creek Canyon caused considerable blossom damage on March 13. Some crops in the Yuma area suffered about 50 percent loss from frost March 13-14, and on the same dates fruits were damaged by freezing in the Nogales area. Late season warmth and first frosts in growing areas being delayed until December permitted completion of fall harvests with a minimum of frost damage.

While ranges early in the year were mostly too dry in Northeast and Southeast Divisions, and stock water was short in some places, by April most grazing land had improved to fair or good condition except in the Southeast, where improvement was delayed until during the generous rains of July, August, and September. Ranges were dry again in May and June, but by September ranges were generally very good. By the end of the year, however, a need for moisture had developed. Cattle and sheep generally were in good condition throughout the year. In spite of some severe storms, frosts, floods, and dry spells, it was a favorable year for agriculture.

Total annual runoff figures for 1954 as measured by the Geological Survey include: Salt River near Roosevelt, 351,500 acre-feet; Tonto Creek near Roosevelt, 39,750 acre-feet; and Verde River above Horseshoe Dam, 294,500 acre-feet.

Pumpage

The following table contains records of pumpage in the major areas of ground-water development in the State for the 5-year period 1950-54. Areas in which pumpage records were not collected include: Upper San Pedro Valley, Lower San Pedro Valley, Cactus Flat-Artesia area, St. Johns area, Snowflake-Taylor area, Hunt area, Woodruff area, Joseph City area, Chino Valley, Williamson Valley, Skull Valley, Peeples Valley, Date Creek area, Big Sandy Valley, Valentine area, and Parker area. Pumpage for irrigation in these areas, based on partial data, is estimated to be less than 100,000 acre-feet in 1954. By adding this figure to those in the last column of the table, a total of about 4,500,000 acre-feet is obtained as the amount of water pumped in 1954 from the ground-water reservoirs in the State. This quantity is about 300,000 acre-feet less than the amount of ground water pumped in 1953 and about twice the amount of water diverted from surface-water supplies in 1954.

According to data provided by G. W. Barr of the University of Arizona, about 1,250,000 acres was in cultivation in the State in 1954. This represents a decrease in farmed land of about 50,000 acres from 1953. Dr. Barr's data also indicate that cash income from crops and livestock in Arizona amounted to about 380 million dollars during 1954, an increase of about 10 million dollars over 1953.

As the chief use of ground water in Arizona is for irrigation, the decrease in pumpage is believed to be due to the following factors: (1) In areas where ground water is pumped as a supplement to surface water, increased amounts of surface water were available in 1954; (2) there was less acreage in cultivation in 1954; and (3) heavier precipitation supplied water in some areas that otherwise would have been supplied by pumping of ground water.

Pumpage, in acre-feet, from wells in principal ground-water areas in Arizona

Area	1950	1951	1952	1953	1954
Cochise County:					
San Simon Basin d/	(b)	(b)	15,000	25,000	32,000
Willcox Basin	35,000	38,000	39,000	75,000	70,000
Douglas Basin	35,000	38,000	42,000	45,000	42,000
Graham County:					
Safford Valley	90,000	125,000	70,000	120,000	90,000
Greenlee County:					
Duncan Valley c/	23,000	33,000	17,000	30,000	27,000
Maricopa County:					
Salt River valley area d/	1,852,000	1,910,000	2,000,000	2,300,000	2,300,000
Waterman Wash area	(e)	(e)	(e)	28,000	30,000
Harquahala Plains area	(e)	(e)	(e)	20,000	33,000
Gila Bend area	59,000	110,000	120,000	145,000	139,000
Dendora area	6,000		6,000	5,000	7,000
Pima County:					
Part of Santa Cruz Basin	180,000	240,000	250,000	380,000	300,000
Pinal County:					
Part of Santa Cruz Basin and Gila River Basin	1,000,000	1,030,000	950,000	1,400,000	1,200,000
Santa Cruz County:					
Part of Santa Cruz Basin	21,000	30,000	27,000	27,000	20,000
Yuma County:					
Palomas Plain area	9,000	15,000	26,000	47,000	30,000
Wellton-Mohawk area	46,000	50,000	40,000	16,000	9,000
South Gila Valley	56,000	62,000	60,000	60,000	60,000
Northern Yuma County f/	(b)	(b)	(b)	28,000	26,000

a/ Includes Bowie area.
b/ Not determined.
c/ Does not include Virden Valley, N. Mex.
d/ Includes Queen Creek area, Maricopa and Pinal Counties.
e/ For 1950-52, inclusive, was included in Salt River valley area.
f/ Ranegras Plain and McMullen Valley.

Interpretation of Water-Level Fluctuations

The discussions that follow include statements about water-level fluctuations in each of the 14 counties of Arizona, listed alphabetically. The detail provided in each discussion is determined by the complexity of the water-level changes and by the number of ground-water areas into which each county is divided.

Apache County. --Water levels in Apache County showed variable changes in 1954, ranging from a rise of about 3 feet in a well in the Petrified Forest National Park to a decline of about 5 feet in a well near St. Johns. As most of the water levels in this area are comparatively shallow, they are affected by local climatic variations and thus far have shown no discernible trend either upward or downward. Precipitation at Springerville was 11.89 inches in 1954, about 92 percent of normal.

Cochise County. --Water-level fluctuations in the four main areas of development in Cochise County are discussed separately, as follows: (1) Upper San Pedro Valley, (2) San Simon basin, (3) Willcox basin, and (4) Douglas basin.

Generally, water levels in wells in the Upper San Pedro Valley showed a slight rise. Well (D-21-21)11aad and (D-20-20)32cdb (fig. 16), representative of the Charleston-Fort Huachuca area, showed a slight rise in water level during 1954. Water levels in wells (D-16-20)34acd and (D-17-21)32bad (fig. 16), in the Pomerene-Benson-St. David area, showed about a foot of decline. Precipitation at Fairbank amounted to 11.97 inches, slightly greater than normal.

Pumpage of ground water in the San Simon basin in 1954 amounted to about 32,000 acre-feet, an increase of about 7,000 acre-feet over 1953. Development in the basin centers around the towns of San Simon and Bowie. In the San Simon area, most of the wells are under artesian pressure, but only a few wells flow. All have to be pumped to provide sufficient water for irrigation. Declines in water level of as much as 3 feet were measured in the center of the cultivated area, as shown in the hydrograph of well (D-14-31)3ddd (fig. 16). Pressure heads ranged from slightly above the surface to about 70 feet below the surface. Precipitation at San Simon was 10.93 inches in 1954, about 26 percent greater than normal. In the Bowie area, water levels declined from 6 to 20 feet in and near the cultivated area. Well (D-13-29)6ccc (fig. 16), representative of the area, showed a decline in water level of 17 feet. Depths to water ranged from about 40 feet on the eastern edge of the cultivated area to about 280 feet on the western edge. Precipitation at Bowie was 10.73 inches in 1954, about 16 percent greater than normal.

The two main areas of development in the Willcox basin are the Stewart area, northwest of Willcox, and the Kansas Settlement area, southeast of Willcox. In the Willcox basin, about 70,000 acre-feet of water was pumped in 1954, a slight decrease from the amount pumped in 1953. In the Stewart area, the average decline in water level amounted to about 3 feet, the maximum declines being as much as 6 feet. Depths to water in the area ranged from about 20 to more than 100 feet. In the Kansas Settlement area, water levels declined an average of 4 feet. In the center of the cultivated area, maximum declines of 7 and 8 feet were measured. Depths to the water table ranged from about 30 to about 200 feet. The water levels in wells (D-14-23)-36baa and (D-14-25)6cac (fig. 17) are representative of wells outside the cultivated area in the Willcox basin. Neither showed any appreciable decline during 1954. Precipitation at Willcox amounted to 11.57 inches in 1954, about 98 percent of normal.

Pumpage in the Douglas basin amounted to about 42,000 acre-feet in 1954, a decrease of about 3,000 acre-feet from the amount pumped in 1953. Changes in water levels during the year ranged from a rise of about 1 foot in wells outside the cultivated area to a decline of about 5 feet south of McNeal in the center of the cultivated area. The average decline for the basin as a whole was slightly more than 2 feet (fig. 17). The range in depth to water was from about 35 to more than 100 feet. Precipitation at Douglas was 11.76 inches in 1954, about 96 percent of normal.

Coconino County. --In Coconino County, changes in water levels in both the shallow and the deep wells were, for the most part, less than a foot, indicating little change in the ground-water storage during 1954. Precipitation at Flagstaff in 1954 amounted to 19.55 inches, about 6 percent above normal. The excess was largely due to storms that occurred in March, July, and September.

Gila County. --In the upper Pinal Creek area of Gila County, water levels fluctuated widely, owing to withdrawals of ground water and to recharge from greater-than-normal amounts of runoff in Pinal Creek. During 1954, some wells showed rises in water level of as much as 5 feet; others showed declines of as much as 3 feet. Precipitation at Globe was 18.37 inches, 21 percent greater than normal.

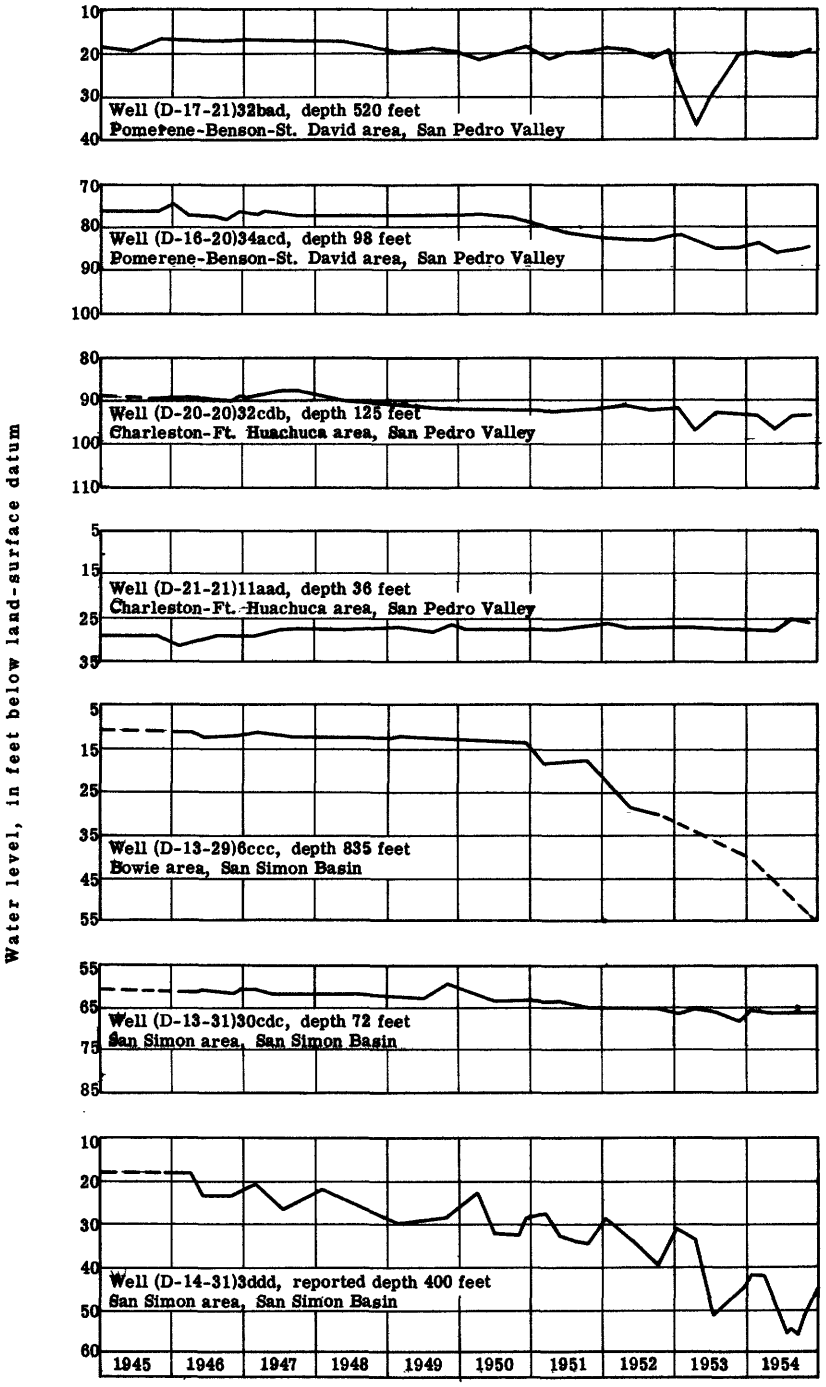


Figure 16. --Water levels in wells in San Pedro Valley and San Simon Basin, Cochise County, Ariz., 1945-54.

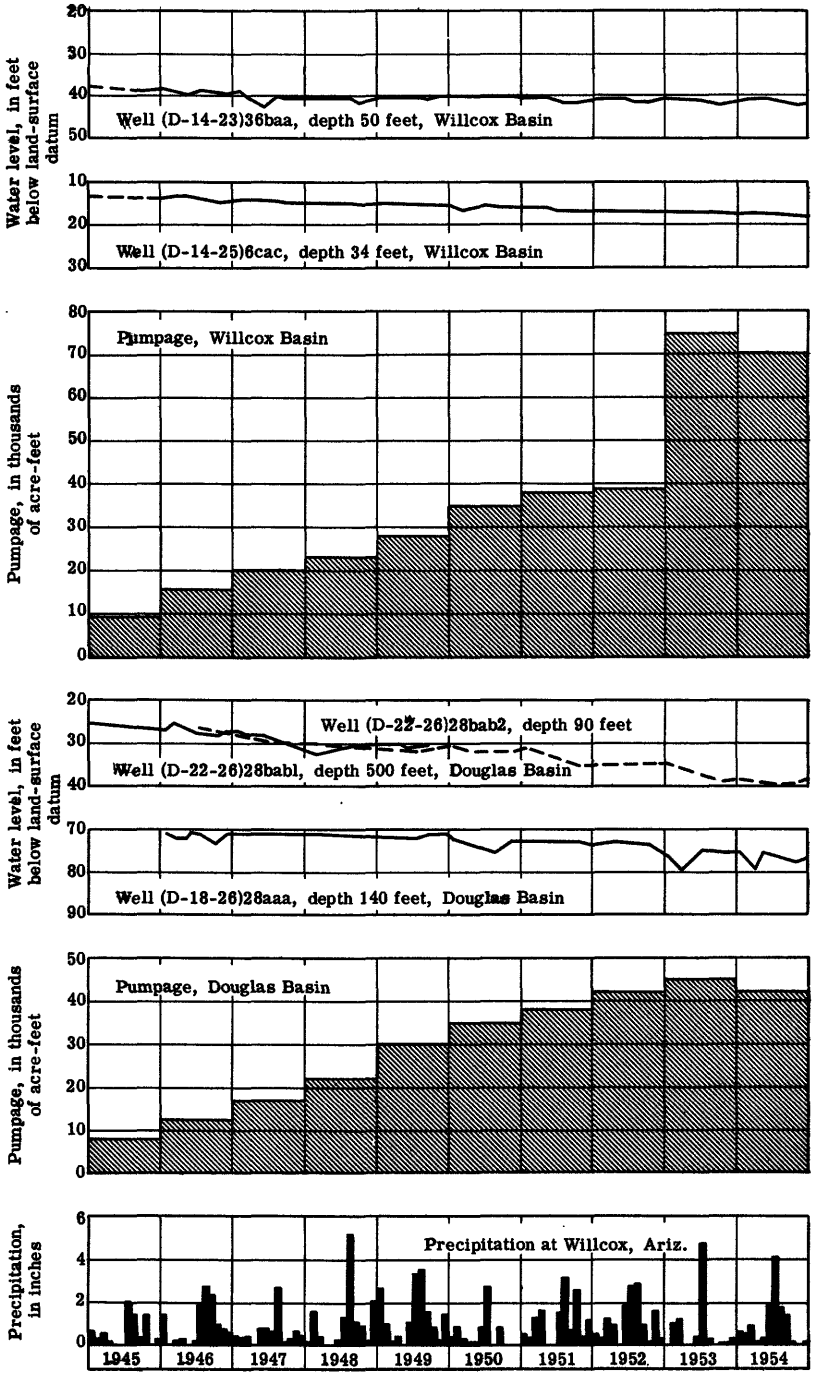


Figure 17.--Water levels in wells, pumpage in Willcox and Douglas Basins, and precipitation at Willcox, Cochise County, Ariz.

Graham County. --Generally, the water levels in the Safford Valley of Graham County showed a slight rise during 1954. Water levels in the San Jose-Safford, Safford-Pima, and Pima-Cork areas showed a rise of about 1 foot. In the Cork-Geronimo and Pima-Eden areas, the water levels declined about 2 feet. The hydrograph for well (D-6-28)31aac (fig. 18), east of the San Jose-Safford area, shows that the water levels dropped slightly more than a foot during 1954. The water levels in wells (D-7-26)22bac and (D-6-24)5acc (fig. 18), in the San Jose-Safford and Pima-Cork areas, respectively, rose about 1 foot during 1954. Pumpage of ground water in 1954 was about 90, 000 acre-feet, 30, 000 acre-feet less than in 1953. This decrease can be attributed partially to the increased amount of surface water available for irrigation in 1954, about 80, 000 acre-feet, or about twice as much as in 1953. Precipitation at Safford amounted to 8. 82 inches in 1954, slightly greater than normal. In Aravaipa Valley of Graham County, fluctuations in water levels ranged from little or no decline to small local rises.

Greenlee County. --In the Duncan Valley of Greenlee County, both rises and declines in water levels were measured during 1954. In the area between the Arizona-New Mexico State line and Sheldon, the water table rose about 1 foot during the year. In the area from Sheldon to York, water levels showed a decline of about half a foot. Figure 19 shows hydrographs of three wells typical of the area. About 27, 000 acre-feet of ground water was pumped during 1954. Surface water diverted for irrigation during 1954 amounted to about 13, 000 acre-feet, or about 5, 500 acre-feet more than in 1953. Precipitation at Duncan was 8. 77 inches in 1954, about 90 percent of normal.

Maricopa County. --Water levels in Maricopa County continued to decline during 1954. Figure 20 shows the cumulative net changes of average water levels in various parts of the Salt River valley. In figure 21, the cumulative changes of the average water level of the entire Salt River valley are shown, in addition to the irrigation pumpage by years since 1933.

The average decline in the Queen Creek-Higley-Gilbert area in 1954 amounted to almost 6 feet. Although the eastern end of the Queen Creek area lies in Pinal County, it is an integral part of the Queen Creek-Higley-Gilbert area and is therefore included in this section of the report. The greater declines occurred in wells in parts of the area where surface water was not available for supplemental use. Declines of as little as 2 feet occurred in wells in areas where surface water was available. In the Tempe-Mesa-Chandler area, water-level declines averaged about 5 feet for 1954. This downward trend of the water level has continued at about the same rate since 1947. The average decline in the Phoenix-Glendale-Tolleson area amounted to about 6 feet. The Deer Valley part of the area continued to show the largest declines. In the Litchfield-Beardsley-Marinette area, the average decline was 8 feet--slightly less than in 1953, but still at a rate about the same as the annual average since 1946. Average water-table declines in the Liberty-Buckeye-Hassayampa area amounted to about 1 foot. This average decline is smaller than in other parts of the Salt River valley because the water levels in this area are affected by recharge from irrigation water applied in upstream areas.

Pumpage in the Salt River valley during 1954 amounted to about 2, 300, 000 acre-feet (fig. 21). This figure includes the Queen Creek area but does not include pumpage in Waterman Wash or the Harquahala Plains. The pumpage in those two areas was about 30, 000 acre-feet and about 33, 000 acre-feet, respectively, an increase over 1953. Rainfall at Phoenix during 1954 amounted to 4. 31 inches, about 60 percent of normal.

In the Gila Bend area, average water-table declines ranged from about 2 feet northwest and west of Gila Bend to about 8 feet north of Gila Bend in the Rainbow Valley area. Water from some of the wells in the vicinity of Rainbow Valley was pumped into canals and transported on the surface to irrigate land west of Gila Bend. Pumpage in the Gila Bend area in 1954 amounted to about 139, 000 acre-feet, a decrease of about 6, 000 acre-feet from 1953. Rainfall at Gila Bend was 3. 75 inches in 1954, about 68 percent of normal. In the Dendora area, the average water-table decline was less than 1 foot. Pumpage amounted to about 7, 000 acre-feet, an increase of about 2, 000 acre-feet over 1953.

Mohave County. --There was little change in ground-water storage along the Big Sandy River near Wikieup during 1954. Water levels in some wells along the Big Sandy River were slightly higher than in 1953; others showed small declines. The overall average was a rise of less than half a foot. Precipitation at Wikieup amounted to 10. 87 inches, about 5 percent greater than normal.

In the Kingman area, no definite trend was observed and the average change in water levels amounted to a rise of less than half a foot. Precipitation at Kingman during 1954 was 10. 97 inches, almost 9 percent above normal.

Navajo County. --Water levels in wells in Navajo County generally were slightly higher in 1954 than in 1953, but no consistent long-term trend has thus far been observed. Most of the wells measured in this county derive water from the Coconino sandstone and from shallow alluvium along the Little Colorado River. Precipitation at Holbrook in 1954 was 11. 27 inches, almost 40 percent greater than normal.

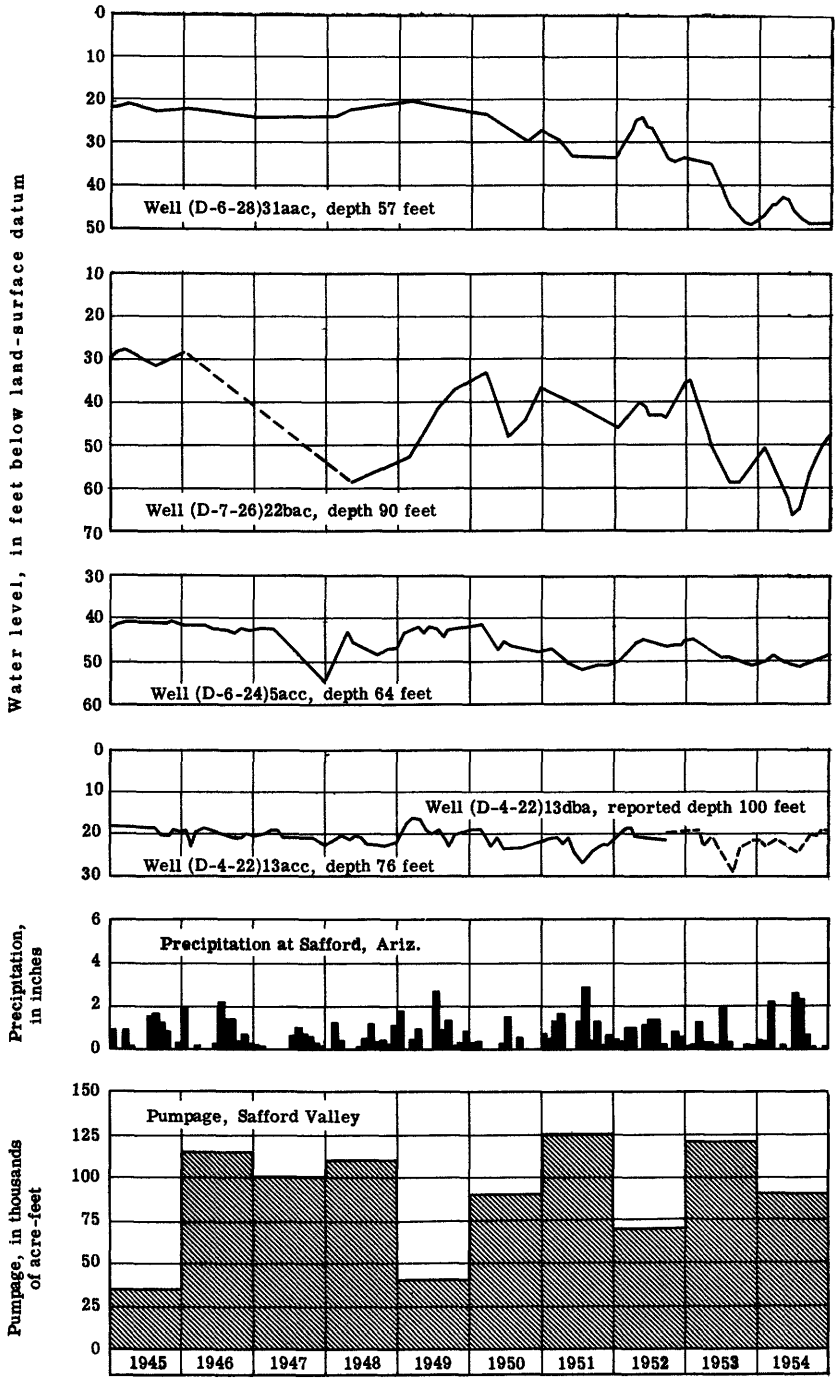


Figure 18.--Water levels in wells, precipitation at Safford, and pumpage in Safford Valley, Graham County, Ariz., 1945-54.

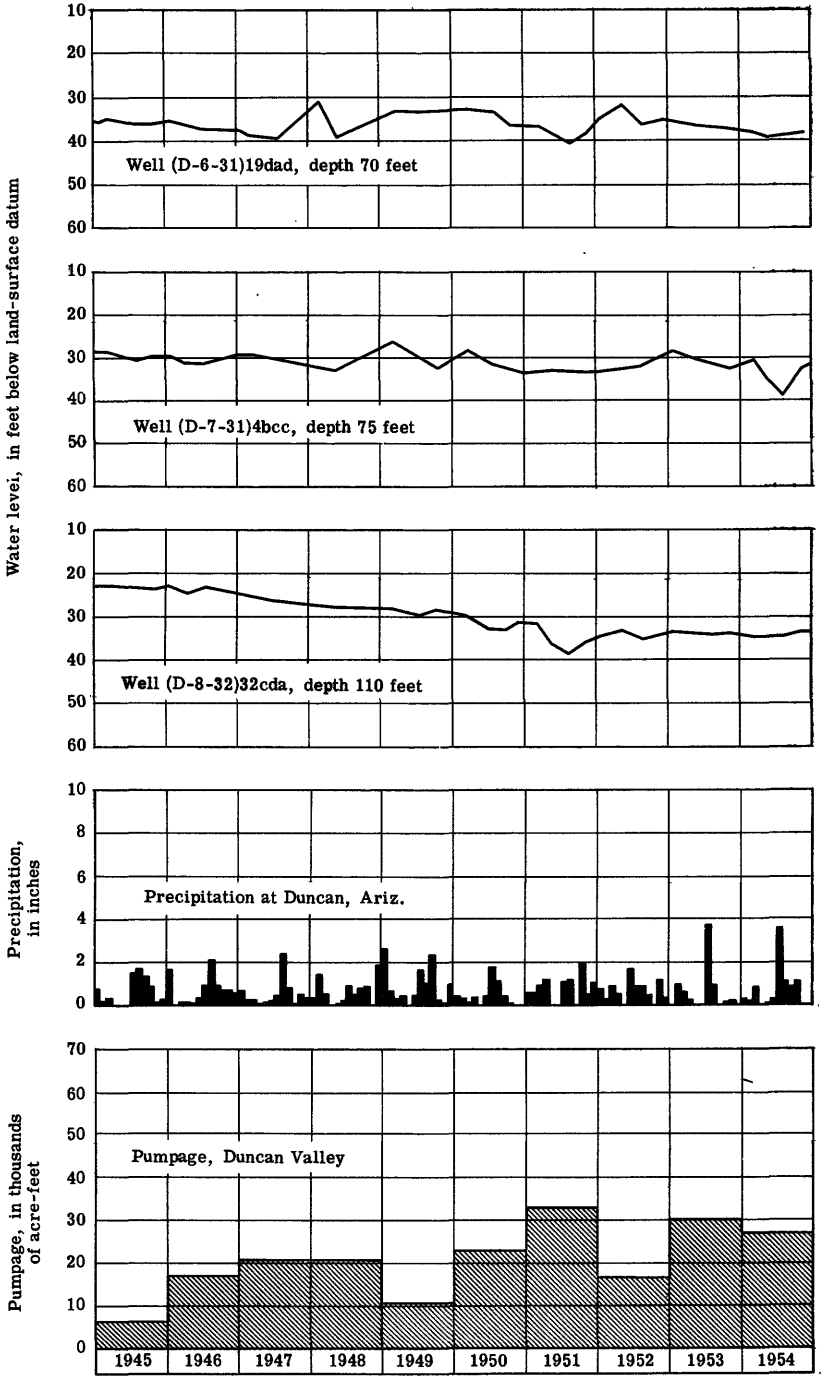


Figure 19. --Water levels in wells, precipitation at Duncan, and pumpage in Duncan Valley, Greenlee County, Ariz., 1945-54.

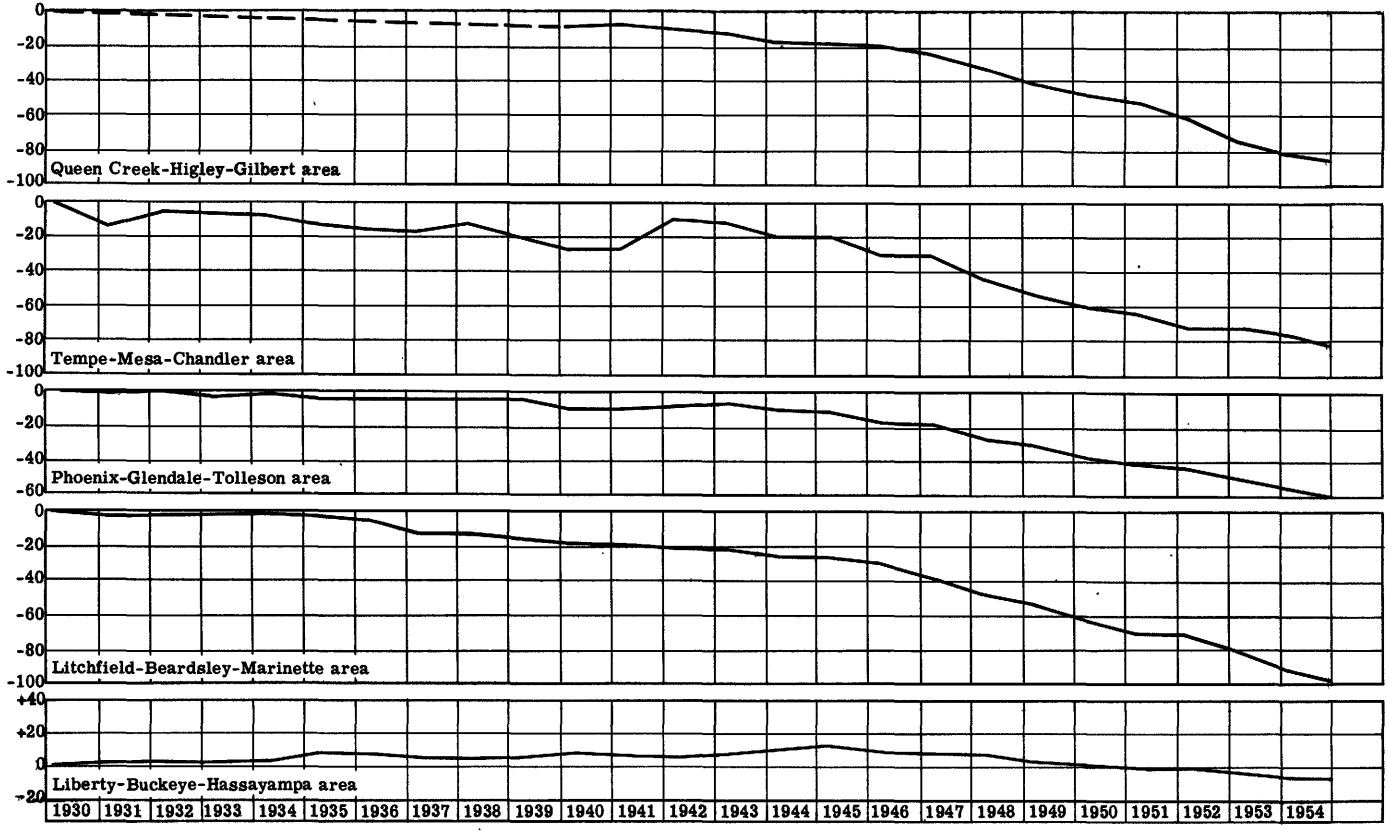


Figure 20.--Cumulative net changes of average water level in various parts of Salt River valley, Maricopa County, Ariz., 1930-54.

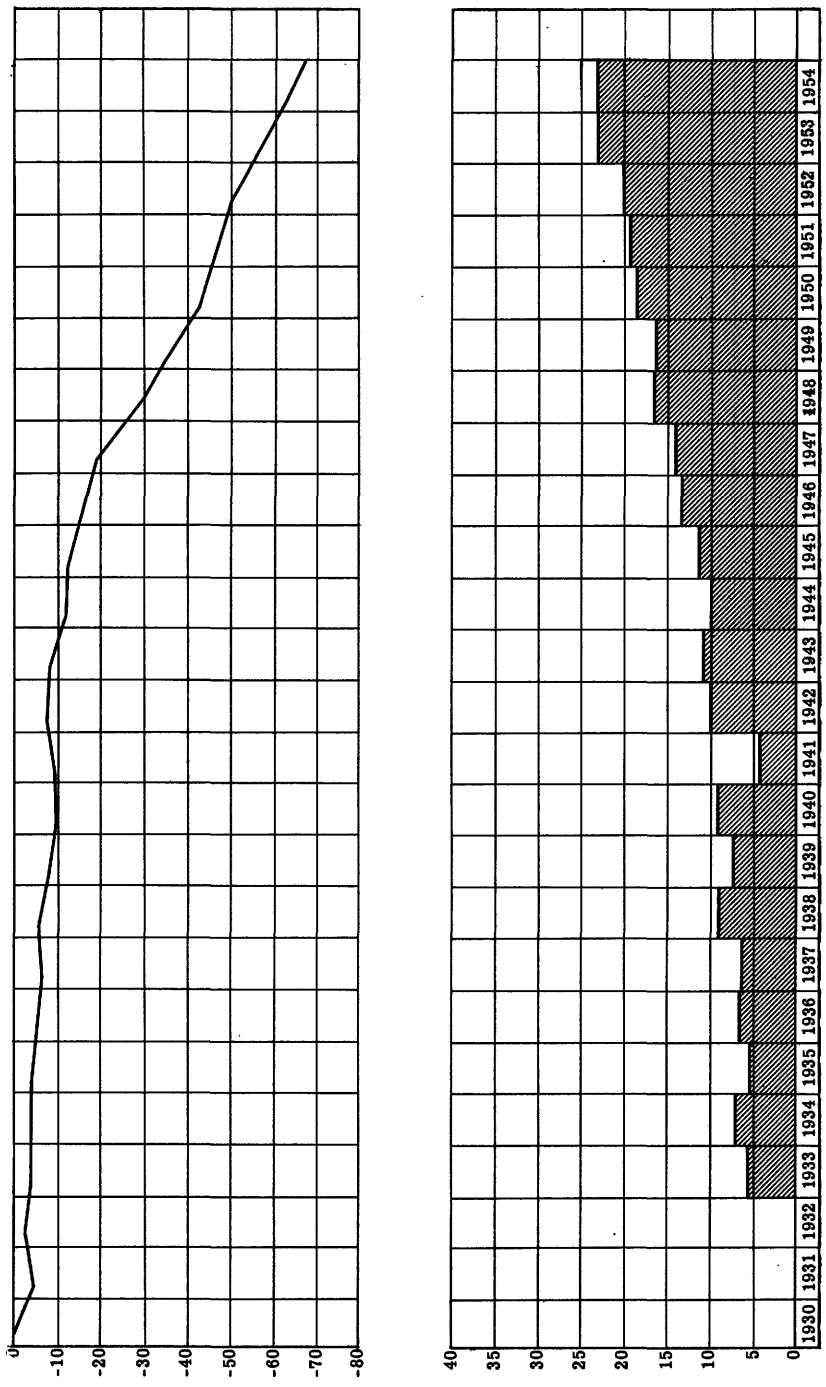


Figure 21.--Cumulative net changes of average water level and pumpage for irrigation in Salt River valley, Maricopa County, Ariz.

Pima County.--Water-level fluctuations in Pima County are discussed by areas,as follows: (1) Avra-Marana area, (2) Tucson-Cortaro area, (3) Tucson area, (4) Tucson-Continental area, and (5) Rillito-Tanque Verde-Pantano area.

In the Avra-Marana area, water levels in wells showed an average decline of nearly 6 feet during 1954. Maximum declines of as much as 10 feet were measured in areas of heavy pumping. In the downstream part of the area, near the Pima-Pinal County line, the average decline was about 5 feet. Well (D-15-10)35aaa (fig. 22), typical of the extreme southern part of the area, showed a slight rise in water level during the year. The range in depth to water in the area was from 170 to more than 300 feet.

Fluctuations in water levels in the Tucson-Cortaro area varied considerably during 1954. Over the whole area, maximum changes in water levels ranged from a rise of about 5 feet to a decline of about 5 feet. Water levels in wells along the Santa Cruz River, from the Rillito Narrows to the mouth of Rillito Creek, showed an average rise of about 1 foot. Well (D-12-12)-16bad (fig. 22), representative of the area along the river near Cortaro, showed a rise of 3 feet during 1954. In the area just north of Tucson, the average decline in water levels amounted to about 3 feet. The range in depth to water in the area was from 70 to 100 feet.

In the Tucson area, the amount of decline in water levels varied greatly during 1954. Water levels in the city of Tucson "Southside" well field showed an average decline of about 1 foot during 1954. Well (D-15-13)2cca (fig. 22) showed a net rise of about 1 foot. In the municipal well field in northeast Tucson, the average decline was nearly 4 feet. These averages were obtained from water-level data supplied by the city of Tucson. Depth to water in the area ranged from about 45 feet in wells near the Santa Cruz River to about 160 feet east of the city limits.

In the Tucson-Continental area, the change in water levels in wells during 1954 ranged from a decline of 5 feet to a rise of about 8 feet. Well (D-17-14)18cab (fig. 22), midway between Tucson and Continental, showed little or no decline during 1954. In the area from Continental to the Pima-Santa Cruz County line, changes in water levels ranged from a local decline of 5 feet just south of Continental to a general rise of 4 feet near the county line. Depth to water in the Tucson-Continental area ranged from about 40 feet in wells near the river south of Tucson to more than 100 feet in wells near Continental.

Fluctuations of water levels in wells along Rillito Creek ranged from a decline of about 2 feet to a rise of about 8 feet. Along Tanque Verde Creek, changes in water levels ranged from a decline of about 1 foot to a rise of about 5 feet. Wells along Pantano Wash showed changes in water levels ranging from a decline of about 5 feet to a rise of about 6 feet. Depths to water in wells in this area range from less than 20 feet along Rillito and Tanque Verde Creeks to over 250 feet near the mountains.

Ground water pumped in Pima County during 1954 amounted to about 300,000 acre-feet, or about 80,000 acre-feet less than the amount pumped in 1953. Precipitation at the University of Arizona, Tucson, was 11.31 inches in 1954, 9 percent greater than normal.

Pinal County.--For the most part, water levels in the lower Santa Cruz area of Pinal County showed less decline in 1954 than in 1953. Pumpage in Pinal County in 1954 was about 1,200,000 acre-feet, about 200,000 acre-feet less than in 1953. The cumulative net declines, shown graphically in figure 23 for the three major irrigated areas in Pinal County, are based on water-level measurements in several hundred wells. Water-level fluctuations in these three areas are discussed separately as follows: (1) Casa Grande-Florence area, (2) Maricopa-Stanfield area, and (3) Eloy area.

In the Casa Grande-Florence area, the average decline in the water levels in 1954 was about 6 feet. Declines of more than 15 feet were measured in the heavily pumped sections. In the area between Casa Grande and Coolidge, declines in water levels ranged from 5 to 15 feet. Between Coolidge and Florence, the average decline in water level amounted to about 5 feet. From Florence to the Ashurst-Hayden Dam, water levels generally declined less than 5 feet. In the vicinity of Sacaton on the Gila River Indian Reservation, water levels dropped an average of about 5 feet. The decline of the water table indicates that most of the water was withdrawn from storage. The volume of sediments unwatered during 1954 is estimated to be about 1,100,000 acre-feet. The depth to water in the Casa Grande-Florence area ranged from about 25 feet near the Ashurst-Hayden Dam to about 165 feet south of Coolidge near the canal boundary. Pumpage of ground water in the area amounted to about 380,000 acre-feet during 1954. Precipitation at Casa Grande was 6.74 inches, about 86 percent of normal.

In the Maricopa-Stanfield area, the average decline in water level was about 11 feet in 1954. South of State Highway 84, water levels declined as much as 20 feet in the heavily pumped areas. From State Highway 84 to the southern boundary of the Maricopa Indian Reservation, the decline in water level ranged from 10 to 15 feet during 1954. West of the Maricopa Indian Reservation boundary and north of State Highway 84, net declines of more than 30 feet were measured. In the vicinity of the town of Maricopa, the average decline was slightly less than 5 feet. The volume of sediments unwatered is estimated to be about 2,300,000 acre-feet. The amount of water pumped

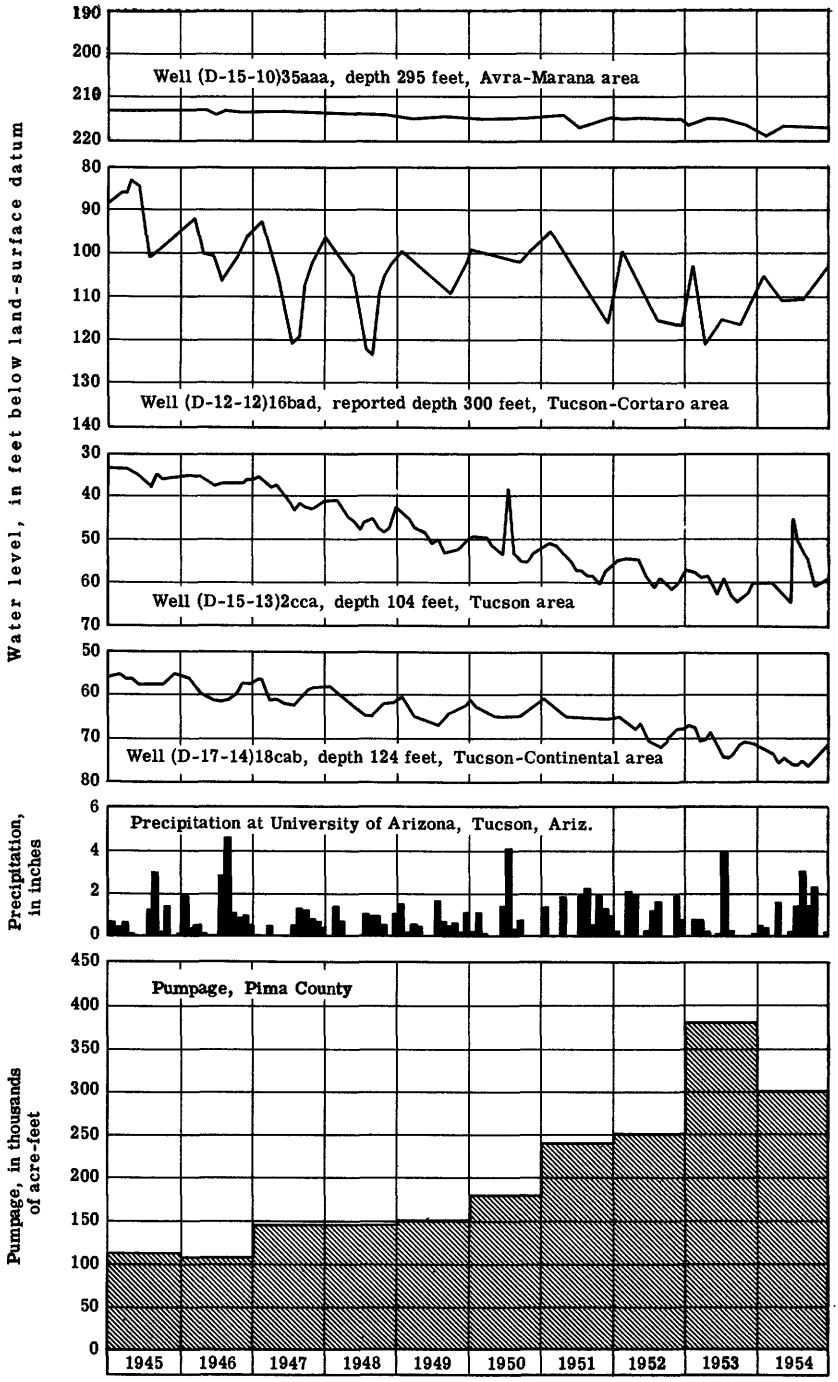


Figure 22.--Water levels in wells in Avra-Marana, Tucson-Cortaro, Tucson, and Tucson-Continental areas, precipitation at Tucson, and pumpage in Pima County, Ariz., 1945-54.

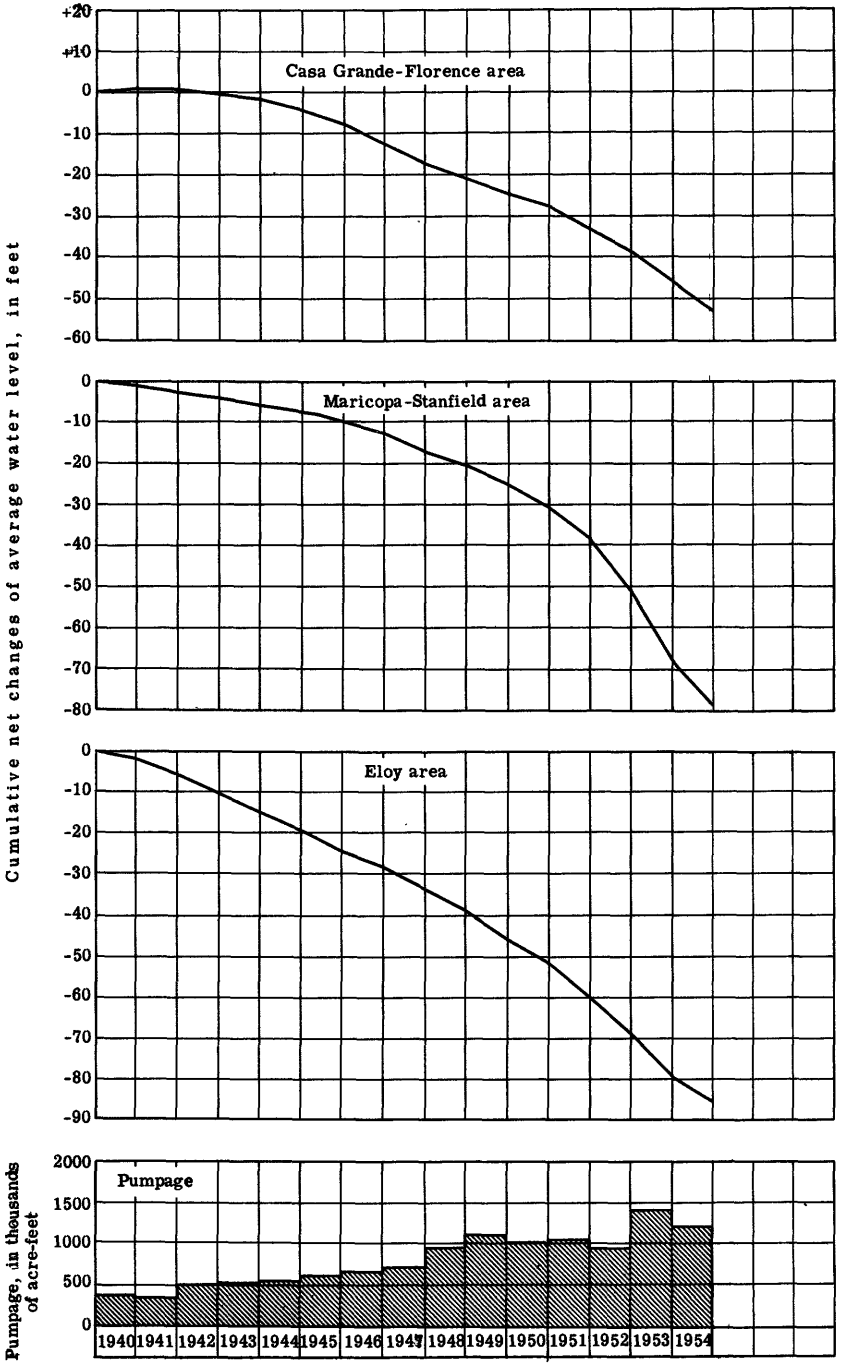


Figure 23.--Cumulative net changes of average water level and pumpage in parts of Santa Cruz Basin within Pinal County, Ariz., 1940-54.

during the year in the Maricopa-Stanfield area was about 420,000 acre-feet. The depth to water ranged from 50 feet in the area north of the town of Maricopa to more than 350 feet in the southwestern part of the Maricopa-Stanfield area.

The average lowering of the water table in the Eloy area in 1954 was slightly less than 7 feet. Between the town of Eloy and the Florence-Casa Grande Canal, declines ranging from 5 to 12 feet were measured. The amount of ground water pumped in the Eloy area during 1954 was about 400,000 acre-feet, and the total volume of sediments unwatered was about 1,500,000 acre-feet. The depth to water ranged from about 100 feet in the northwestern part of the area to about 250 feet south of the town of Eloy. Precipitation at Eloy amounted to 9.77 inches in 1954.

Santa Cruz County.--Ground-water levels in the Santa Cruz River valley of Santa Cruz County generally showed rises during 1954. This is attributed to the greater-than-normal precipitation providing water that otherwise would have been supplied by the pumping of ground water and to the greater-than-normal flow in the Santa Cruz River that increased recharge to the ground-water reservoir. The total discharge of the Santa Cruz River at the gaging station near Nogales for the month of August 1954 was the greatest for any month since 1940. Monthly discharges at this gaging station since 1945 are shown on a graph in figure 24.

In the area from the Pima-Santa Cruz County line to Tubac, the change in water level was from zero to a rise of about 6 feet. In the heavily pumped area between Tubac and Calabasas, water-level fluctuations ranged from zero to a rise of more than 15 feet in well (D-22-13)35dcd (fig. 24). Between Calabasas and the International Boundary, rises in the water level ranged from less than 1 foot to more than 15 feet. The average depth to water was between 25 and 30 feet along the river. Pumpage of ground water in Santa Cruz County in 1954 amounted to about 20,000 acre-feet. Precipitation at Nogales was 18.35 inches in 1954, 15 percent greater than normal.

Yavapai County.--Water-level measurements in wells in Yavapai County generally showed slight declines in 1954. The average decline in Peeples Valley was about 1 foot and in Chino Valley about 2 feet. In a few wells, slight rises were observed, but these probably were due to local conditions of a seasonal nature. In Skull Valley, the average decline from 1953 levels amounted to about 1 foot. Precipitation at Prescott in 1954 amounted to 16.91 inches, about 85 percent of normal.

Yuma County.--Northern Yuma County includes two major agricultural areas, the Ranegras Plain and McMullen Valley. Water levels in most wells in both areas showed very little change in 1954; the average decline amounted to less than half a foot. Well (B-5-16)10ddd (fig. 25) showed little or no decline. A decline of more than 20 feet was measured near Nordis ranch, in the narrows about 6 miles south of Salome, where the water is pumped into a canal and transported several miles southward to irrigate land in the northwest end of Harquahala Plains. Pumpage in northern Yuma County during 1954 amounted to about 26,000 acre-feet. Precipitation at Salome in 1954 was 5.71 inches, about 74 percent of normal.

In the Wellton-Mohawk area of southern Yuma County, the water table continued to rise as a result of the use of surface water from the Colorado River. In well (C-8-16)28bda (fig. 25), the rise in 1954 amounted to 2 feet, about average for the area. As more surface water became available during 1954, pumpage for irrigation decreased. About 9,000 acre-feet of water was pumped in 1954 as compared with about 16,000 acre-feet pumped in 1953 and about 40,000 acre-feet pumped in 1952. The effects of recharge from irrigation with surface water are reflected in the rising level of the water table in the area. Precipitation at Wellton in 1954 was 1.67 inches, less than 38 percent of normal.

Water levels in wells in the south Gila Valley and Yuma Mesa areas showed a continuing rise in 1954. The average rise amounted to about 3 feet, as shown in well (C-9-22)17ddd (fig. 25). Pumpage in this area in 1954 amounted to about 60,000 acre-feet, almost the same as in 1953, although more surface water was available for irrigation. Precipitation at Yuma in 1954 was 0.90 inch, slightly less than 25 percent of normal.

Water levels in the Palomas Plain area showed an average decline of slightly more than 1 foot during 1954. Part of this area lies within Maricopa County, but most of the developed acreage is in Yuma County. Pumpage in the Palomas Plain area in 1954 was about 30,000 acre-feet. There is no weather station in this area. However, it is probable that the precipitation was somewhat less than the 3.75 inches recorded at Gila Bend, about 40 miles east.

Acknowledgments

Many irrigation districts, power companies, and individuals cooperated in furnishing the information contained in this report. The following organizations were particularly helpful in furnishing data on which figures for pumpage were based: Arizona Public Service Co.; Buckeye Irrigation District; Bu-Gas Distributors; Citizens Utility Co.; City of Douglas; City of Nogales; City of Tucson; Cortaro Farms; Duncan Utilities Co.; Eloy Light and Power Co.; Gila Water

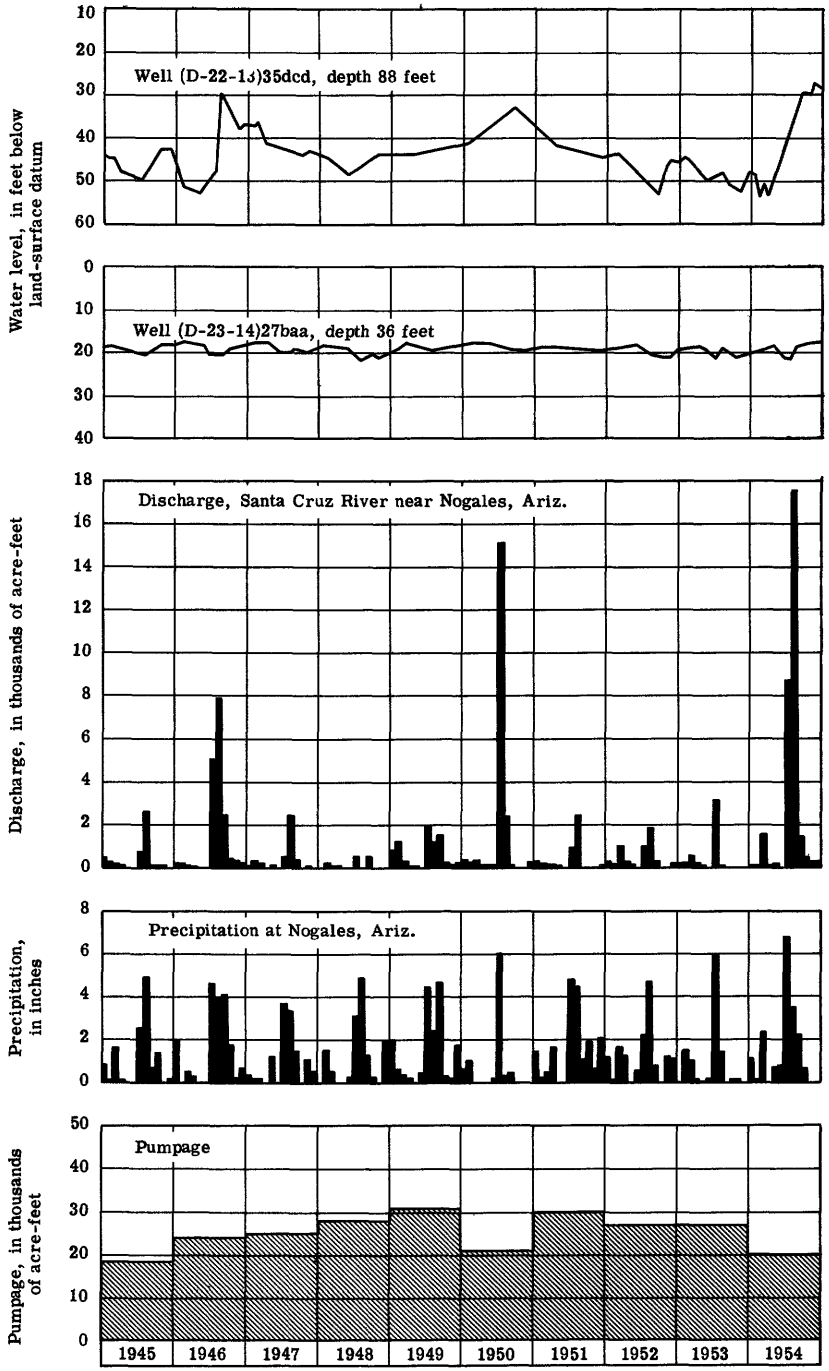


Figure 24.--Water levels in wells in Santa Crnz Valley, discharge of Santa Cruz River near Nogales, precipitation at Nogales, and pumpage in Santa Cruz County, Ariz., 1945-54.

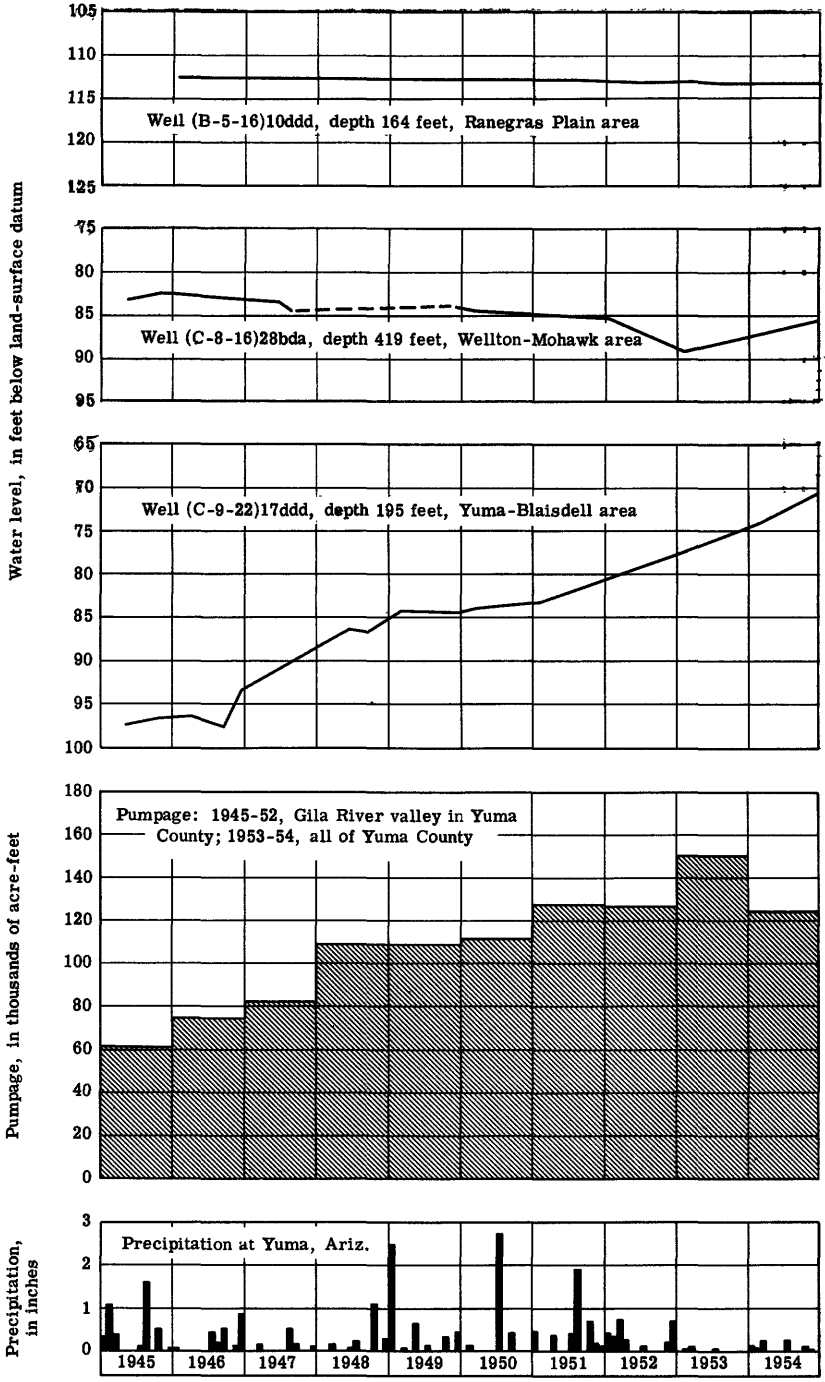
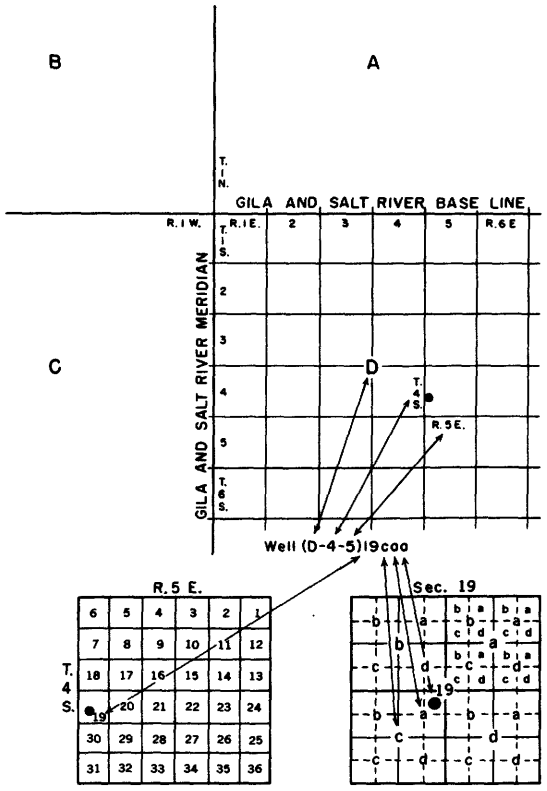


Figure 25. --Water levels in wells in Ranegras Plain, Wellton-Mohawk, and Yuma-Blaisdell areas, pumpage in Lower Gila Valley, and precipitation at Yuma, Yuma County, Ariz.

Commissioner; Goodyear Farms; Magma Natural Gas Co.; Maricopa County Municipal Water Conservation District; Mohawk Municipal Water Conservation District; Natural Gas Service Co.; Roosevelt Irrigation District; Roosevelt Water Conservation District; Rural Electrification Administration; Safford Municipal Utilities; Salt River Valley Water Users' Association; San Carlos Irrigation District; Trico Electric Cooperative; Tucson Gas Electric Light and Power Co.; U. S. Bureau of Indian Affairs; and U. S. Bureau of Reclamation.

Well-Numbering System

Wells are numbered in accordance with the Bureau of Land Management system of land subdivision. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters--a, b, c, and d--after the section number indicate the well location within the section: the first letter denotes the 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. The letters are assigned in a counterclockwise direction beginning in the northeast quarter. If the location is known within a 10-acre tract, three lowercase letters are shown in the well number. Where there is more than one well in the smallest significant tract, consecutive numbers beginning with 1 are added as suffixes. The land survey of Arizona is based on the Gila and Salt River base line and meridian which divide the State into four quadrants. These quadrants are designated by the capital letters A, B, C, and D. All lands north and east of the base point are in A quadrant, those north and west are in B quadrant, and so on through C and D quadrants. For example, well number (D-4-5)19 designates the well as being in sec. 19, T. 4 S., R. 5 E., in the southeast quadrant.



Well Descriptions and Water-Level Measurements

(Water levels are in feet below land-surface datum unless otherwise indicated.)

Apache County

(A-13-28)29ca. E. L. Johns. Drilled domestic water-table well in gravel, diameter 12 inches, depth 50 feet. Highest water level 8.43 below lsd, Aug. 7, 1950; lowest 24.35 below lsd, June 11, 1947. Records available: 1944-54. Oct. 11, 21.82.

Cochise County

(D-13-29)6ccc. A. R. Spikes. Drilled stock and irrigation artesian well in sand and gravel, diameter 6 inches, reported depth 835 feet. Land-surface datum is about 3,675 feet above msl. Highest water level 9.49 below lsd, May 2, 1941; lowest 87.36 below lsd, Aug. 18, 1954. Records available: 1941-42, 1944, 1946-47, 1949-52, 1954. Jan. 28, 40.67; Aug. 18, 87.36.

(D-13-31)30cdc. Elmer Franklin. Drilled domestic water-table well in sand and gravel, diameter 4 inches, depth 72 feet. Land-surface datum is about 3,610 feet above msl. Highest water level 58.70 below lsd, Nov. 2, 1949; lowest 66.82 below lsd, Dec. 16, 1953. Records available: 1940-42, 1944, 1946-54. Jan. 28, 64.06; Mar. 29, 64.10; Apr. 30, 64.24; Aug. 18, 64.60.

(D-14-23)36baa. Fay Proctor. Drilled domestic and stock water-table well in sand and gravel, diameter 6 inches, depth 50 feet. Land-surface datum is about 4,210 feet above msl. Highest water level 36.05 below lsd, May 13, 1942; lowest 42.93 below lsd, June 11, 1947. Records available: 1942, 1944-54. Jan. 26, 41.36; Mar. 29, 40.92; May 25, 41.07; Aug. 9, 41.98; Nov. 3, 42.20.

(D-14-25)6cac. E. T. Dunlap. Drilled domestic water-table well in sand and gravel, diameter 6 inches, depth 34 feet. Land-surface datum is about 4,166 feet above msl. Highest water level 12.00 below lsd, May 14, 1942; lowest 17.94 below lsd, Nov. 3, 1954. Records available: 1942, 1944-54. Jan. 26, 17.50; Mar. 29, 17.48; May 25, 17.58; Aug. 9, 17.76; Nov. 3, 17.94.

(D-14-31)3ddd. A. G. Pierce. Drilled unused artesian well in sand and clay, diameter 8 inches, reported depth 400 feet. Land-surface datum is about 3,690 feet above msl. Highest water level 17.20 below lsd, Apr. 24, 1942; lowest 55.58 below lsd, July 22, 1954. Records available: 1941-42, 1946-54.

Daily highest water level from recorder graph

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	42.04	June 27	52.77	Nov. 9	49.75	Dec. 6	47.51
Mar. 29	41.94	28	52.80	10	49.68	7	47.44
Apr. 30	46.79	29	52.82	11	49.62	8	47.39
June 3	50.62	30	52.86	12	49.51	9	47.30
4	50.55	July 1	52.90	13	49.44	10	47.21
5	50.69	2	52.98	14	49.37	11	47.18
6	50.82	3	53.09	15	49.30	12	47.11
7	50.91	4	53.20	16	49.23	13	47.01
8	51.01	5	53.35	17	49.18	14	46.94
9	51.18	6	53.49	18	49.07	15	46.88
10	51.36	22	55.58	19	48.97	16	46.86
11	51.54	Aug. 19	54.45	20	48.87	17	46.81
12	51.67	20	54.45	21	48.79	18	46.77
13	51.78	21	54.49	22	48.71	19	46.71
14	51.90	22	54.53	23	48.61	20	46.63
15	52.03	Sept. 17	55.45	24	48.51	21	46.54
16	52.13	18	55.46	25	48.41	22	46.46
17	52.22	Oct. 12	53.04	26	48.32	23	46.40
18	52.30	13	52.92	27	48.21	24	46.32
19	52.34	14	52.85	28	48.12	25	46.25
20	52.38	21	51.78	29	48.03	26	46.19
21	52.45	22	51.62	30	47.99	27	46.14
22	52.53	Nov. 4	50.21	Dec. 1	47.91	28	46.09
23	52.65	5	50.12	2	47.83	29	46.00
24	52.66	6	50.02	3	47.74	30	45.95
25	52.72	7	49.93	4	47.68	31	45.89
26	52.75	8	49.85	5	47.60		

(D-16-20)34acd. L. A. Scott. Drilled domestic and stock water-table well in sand and gravel, diameter 6 inches, depth 98 feet. Highest water level 70.42 below lsd, June 12, 1941; lowest 85.57 below lsd, May 28, 1954. Records available: 1941-42, 1944-54. Feb. 23, 83.58; May 28, 85.57; Aug. 25, 85.15; Nov. 19, 84.20.

(D-16-25)16add. W. D. Wear. Drilled stock water-table well in sand and gravel, diameter 6 inches, depth 65 feet. Land-surface datum is about 4,190 feet above msl. Highest water level 33.99 below lsd, June 7, 1944; lowest 42.27 below lsd, Jan. 19, 1953. Records available: 1942, 1944-54. Jan. 29, 39.15; Apr. 1, 37.39; May 26, 37.86; Aug. 10, 39.54; Nov. 3, 39.77, pumping.

(D-17-21)32bad. Boquillas Cattle Co. Drilled domestic and stock artesian well in sand and gravel, diameter 6 inches, reported depth 520 feet, cased to 500. Highest water level 16.92 below lsd, Dec. 9, 1946; lowest 21.51 below lsd, Apr. 6, 1950. Records available: 1944-54. Feb. 24, 19.93; May 28, 20.14; Aug. 26, 20.55; Nov. 22, 19.80.

(D-18-21)6aab. Walter Haymore. Drilled domestic water-table well in sand and gravel, diameter 4 inches, depth 60 feet. Highest water level 25.62 below lsd, Mar. 30, 1946; lowest 39.68 below lsd, May 28, 1954. Records available: 1944-54. Feb. 24, 35.25; May 28, 39.68; Aug. 26, 34.20; Nov. 22, 35.24.

(D-18-26)28aaa. Frank Geers. Drilled stock water-table well in sand and gravel, diameter 6 inches, depth 140 feet. Land-surface datum is 4,267.8 feet above msl. Highest water level 70.65 below lsd, Dec. 21, 1949; lowest 77.71 below lsd, Nov. 4, 1954. Records available: 1946-54. Jan. 22, 75.23; Apr. 1, 78.87, pumping; May 25, 75.84; Aug. 12, 76.40; Nov. 4, 77.71.

(D-20-20)32cdb. Lon Hunt. Drilled unused water-table well in sand and gravel, diameter 6 inches, depth 125 feet. Highest water level 86.17 below lsd, Apr. 2, 1941; lowest 96.60 below lsd, May 24, 1954. Records available: 1941-43, 1945-54. Feb. 24, 93.42; May 24, 96.60; Aug. 26, 93.27; Nov. 22, 93.70.

(D-20-26)33add. Frank Sproul. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 64 feet, perforations 24-64. Land-surface datum is 4,124.2 feet above msl. Highest water level 22.46 below lsd, May 27, 1942; lowest 56.46 below lsd, Jan. 19, 1954. Records available: 1942, 1944-54. Jan. 19, 56.46.

(D-21-21)11aad. J. L. Parker. Dug unused water-table well in sand and gravel, diameter 4 feet, depth 36 feet. Highest water level 25.24 below lsd, Aug. 26, 1954; lowest 30.69 below lsd, Apr. 9, 1941. Records available: 1941, 1944-54. Feb. 24, 27.58; May 24, 28.09; Ang. 26, 25.24; Nov. 22, 26.17.

(D-21-26)24baa. McNeal Cemetery. Drilled domestic water-table well in sand and gravel, diameter 8 inches, depth 196 feet. Land-surface datum is 4,195.8 feet above msl. Highest water level 112.00 below lsd, Jan. 31, 1946; lowest 127.04 below lsd, Aug. 17, 1954. Records available: 1946-54. Jan. 18, 125.10; Apr. 1, 125.42, pumping; May 25, 129.82, pumping; Aug. 17, 127.04; Nov. 3, 129.48, pumping.

(D-22-26)28bab2. J. E. Brophy. Drilled irrigation water-table well in sand and gravel, diameter 8 inches, depth 90 feet. Highest water level 26.42 below lsd, July 25, 1946; lowest 39.45 below lsd, Nov. 3, 1954. Records available: 1946-47, 1949-51, 1953-54. Jan. 22, 38.44; Aug. 17, 39.44; Nov. 3, 39.45.

(D-24-27)5bdb. Fred Price. Dug stock water-table well in sand and gravel, diameter 8 feet, depth 82 feet. Land-surface datum is about 3,996 feet above msl. Highest water level 54.30 below lsd, May 26, 1942; lowest 62.29 below lsd, Nov. 3, 1954. Records available; 1942, 1944-54. Jan. 18, 61.76; Aug. 17, 61.55; Nov. 3, 62.29.

Coconino County

(A-21-7)9ddc. Pinewood Dairy. Dug stock water-table well in gravel, diameter 4 feet, depth 25 feet. Highest water level 11.93 below lsd, June 5, 1945; lowest 19.34 below lsd, Oct. 15, 1948. Records available: 1944-51, 1953-54. Oct. 8, 13.95.

(A-22-6)26aaa. City of Flagstaff. Drilled unused water-table well in Coconino sandstone, diameter 16 inches, reported depth 1,021 feet. Highest water level 129.68 below lsd, Sept. 28, 1945; lowest 131.13 below lsd, July 5, 1952. Records available: 1944-54. Oct. 8, 131.00.

Gila County

(A-1-15)9aad. Kenneth Hoopes. Drilled industrial water-table well in sand and gravel, diameter 12 inches, depth 160 feet. Highest water level 39.25 below lsd, Apr. 9, 1952; lowest 90.40 below lsd, Oct. 3, 1950. Records available: 1945-54. Mar. 8, 74.48; May 11, 68.20, nearby well pumped recently.

(D-1-15)13bad. Schniffen. Drilled unused water-table well in sand and gravel, diameter 6 inches, depth 105 feet. Highest water level 3.50 below lsd, May 5, 1949; lowest 38.87 below lsd, Apr. 11, 1951. Records available: 1946-54. Mar. 8, 36.47; May 11, 7.03; Aug. 18, 14.44; Dec. 8, 17.65.

Graham County

(D-4-22)13acc. Aubrey Rabb. Drilled irrigation water-table well in sand and gravel, diameter 10 inches, depth 76 feet. Land-surface datum is 2,641.0 feet above msl. Highest water level 14.31 below lsd, Mar. 18, 1941; lowest 27.63 below lsd, July 30, 1951. Records available: 1939-52. Measurement discontinued.

(D-4-22)13dba. Aubrey Rabb. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, reported depth 100 feet. Highest water level 19.08 below lsd, Mar. 2, 1953; lowest 28.98 below lsd, Aug. 31, 1953. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 2, 1953	19.24	Sept. 29, 1953	23.39	Feb. 2, 1954	22.45	Sept. 28, 1954	20.55
Mar. 2	19.08	Nov. 3	22.38	Mar. 2	21.98	Oct. 26	20.46
30	22.42	Dec. 1	21.96	30	21.48	Nov. 30	19.71
May 4	20.26	29	21.83	July 27	24.83	Dec. 28	19.70
Aug. 31	28.98						

(D-4-22)35ddd. Hat Hinton. Drilled stock water-table well in sand and gravel, diameter 6 inches, depth 75 feet. Land-surface datum is 2,859.5 feet above msl. Highest water level 17.08 below lsd, Feb. 11, 1943; lowest 39.36 below lsd, Mar. 29, 1940. Records available: 1939-44, 1946-54. Feb. 9, 37.62, pumped recently; Apr. 13, 39.40, pumped recently; July 6, 36.80, pumped recently; Oct. 12, 33.95.

(D-4-23)29adc. Silas Jarvis. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 83 feet, cased to 83, perforations 53-73. Land-surface datum is 2,705.7 feet above msl. Highest water level 46.10 below lsd, Mar. 18, 1941; lowest 63.23 below lsd, Feb. 15, 1948. Records available: 1940-54.

Feb. 2	56.78	June 29	61.03	Sept. 28	57.90	Nov. 30	55.50
Mar. 2	56.39	July 27	61.37	Oct. 26	57.07	Dec. 28	55.54
30	56.00	Aug. 31	59.12				

(D-6-24)5acc. Eldon Palmer. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 64 feet. Land-surface datum is 2,779.6 feet above msl. Highest water level 38.93 below lsd, May 29, 1941; lowest 54.67 below lsd, Dec. 28, 1947. Records available: 1940-54.

Feb. 2	50.15	May 4	50.42	July 27	51.75	Oct. 26	50.02
Mar. 2	50.25	25	50.44	Aug. 31	50.90	Nov. 30	49.74
30	49.66	June 29	51.20	Sept. 28	50.52	Dec. 28	49.68

(D-6-24)13cbb. W. J. Preston. Drilled domestic water-table well in sand and gravel, diameter 5 inches, depth 48 feet. Land-surface datum is 2,828.8 feet above msl. Highest water level 29.15 below lsd, May 28, 1942; lowest 45.79 below lsd, Jan. 22, 1952. Records available: 1939-40, 1942-54.

Feb. 2	43.76	May 4	42.77	July 27	43.30	Oct. 26	42.72
Mar. 2	43.68	25	42.52	Aug. 31	42.98	Nov. 30	41.87
30	43.40	June 29	42.65	Sept. 28	43.01	Dec. 28	41.71

(D-6-25)17ddd. Vance Marshall. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 46 feet. Land-surface datum is 2,821.6 feet above msl. Highest water level 10.77 below lsd, May 26, 1941; lowest 22.24 below lsd, July 27, 1954. Records available: 1939-46, 1948-50, 1952-54.

Feb. 1	20.24	May 4	20.35	Sept. 28	20.20	Nov. 30	20.53
Mar. 2	21.18	July 27	22.24	Oct. 26	20.01	Dec. 28	20.46
30	22.22	Aug. 31	20.22				

(D-6-28)31aac. J. W. Earven. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 57 feet. Highest water level 17.14 below lsd, Apr. 16, 1941; lowest 49.16 below lsd, Nov. 2, 1953. Records available: 1940-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 1	46.39	May 3	42.98	July 26	47.80	Sept. 27	48.85
Mar. 1	44.55	24	43.30	Aug. 30	48.42	Dec. 27	48.60
29	44.54	June 28	45.22				

(D-7-26)13dcd. E. M. Claridge. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 80 feet, cased to 80, perforations 35-70. Land-surface datum is about 2,962 feet above msl. Highest water level 11.73 below lsd, May 25, 1942; lowest 58.62 below lsd, June 28, 1954. Records available: 1940-54. Measurement discontinued.

Feb. 1	38.84	May 3	47.86	Aug. 30	52.04	Oct. 25	44.16
Mar. 1	43.38	24	51.87	Sept. 27	48.70	Nov. 29	40.35
29	46.28	June 28	58.62				

(D-7-26)22bac. Lee Johns. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 90 feet, cased to 90. Land-surface datum is 2,950.3 feet above msl. Highest water level 20.27 below lsd, May 25, 1942; lowest 66.36 below lsd, June 28, 1954. Records available: 1940-54.

Feb. 1	51.68	June 28	66.36	Sept. 27	57.36	Nov. 29	50.82
May 24	63.08	July 26	65.40	Oct. 25	53.91	Dec. 27	49.42

(D-7-27)4dad. Zelma Clonts. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 81 feet, cased to 81, perforations 10-60. Land-surface datum is about 3,012 feet above msl. Highest water level 9.32 below lsd, Apr. 16, 1941; lowest 37.95 below lsd, Sept. 27, 1954. Records available: 1940-50, 1952-54. Feb. 1, 30.20; May 3, 32.59; Aug. 30, 37.40; Sept. 27, 37.95; Oct. 25, 33.80; Nov. 29, 31.70; Dec. 27, 32.64.

Greenlee County

(D-6-31)19dad. D. W. Rapier. Drilled domestic water-table well in sand and gravel, diameter 12 inches, depth 70 feet. Highest water level 30.76 below lsd, May 5, 1941; lowest 40.66 below lsd, Aug. 27, 1951. Records available: 1939-54.

Dec. 6, 1939	33.92	May 5, 1941	30.76	July 4, 1946	37.30	Mar. 7, 1951	36.72
Jan. 31, 1940	33.62	June 2	31.18	Dec. 30	37.72	Aug. 27	40.66
Mar. 1	32.60	July 10	32.70	Mar. 12, 1947	38.98	Nov. 5	39.03
June 4	33.21	Mar. 11, 1942	32.33	July 23	39.67	Jan. 23, 1952	35.14
July 1	33.40	Nov. 11	34.78	Feb. 13, 1948	31.00	May 6	b32.10
Aug. 8	34.20	Sept. 29, 1943	35.56	May 19	39.00	Aug. 27	36.33
Sept. 5	34.89	Dec. 27	35.00	Mar. 1, 1949	33.03	Dec. 2	35.82
30	34.57	Mar. 13, 1944	35.02	July 14	c33.86	Jan. 27, 1953	35.49
Oct. 29	34.18	Feb. 1, 1945	35.83	Oct. 27	33.15	May 7	36.26
Dec. 2	34.33	Mar. 15	35.36	Mar. 16, 1950	32.39	Nov. 12	37.60
Jan. 8, 1941	32.85	Aug. 8	36.12	July 16	33.44	Mar. 10, 1954	38.22
31	32.08	Nov. 5	36.10	Oct. 10	36.50	May 19	39.50
Feb. 27	31.48	Jan. 20, 1946	35.82	Dec. 28	36.47	Nov. 9	38.59
Apr. 15	31.18						

b Pumped recently.
c Nearby well being pumped.

(D-7-31)4bcc. Barney & Frazier. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 75 feet. Land-surface datum is 3,544.4 feet above msl. Highest water level 24.25 below lsd, May 5, 1941; lowest 38.85 below lsd, Aug. 11, 1954. Records available: 1939-43, 1945-54. Mar. 10, 30.59; May 19, 34.90; Aug. 11, 38.85; Nov. 9, 32.74.

(D-8-32)32cda. Lavar Merrill. Drilled domestic water-table well in sand and gravel, diameter 4 inches, depth 110 feet. Land-surface datum is 3.716.0 feet above msl. Highest water level 22.68 below lsd, Mar. 15, 1945; lowest 38.56 below lsd, Aug. 27, 1951. Records available: 1939-54. Mar. 10, 34.39; May 19, 34.63; Aug. 11, 34.14; Nov. 9, 33.84.

(D-8-32)34cdd. Floyd McDaniels. Drilled irrigation water-table well in sand and gravel, diameter 18 inches, depth 70 feet. Land-surface datum is about 3,687 feet above msl. Highest water level 6.60 below lsd, Mar. 1, 1949; lowest 28.18 below lsd, Nov. 12, 1953. Records available: 1939-43, 1945-53. Measurement discontinued.

Maricopa County

(A-1-1)4aaa. Isabell-Hartner Ranches. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 158 feet. Land-surface datum is about 1,025 feet above msl. Highest water level 54.93 below lsd, Jan. 14, 1946; lowest 98.32 below lsd, Nov. 5, 1951. Records available: 1946-52. Measurement discontinued.

(A-1-1)4aaa2. Isabell-Hartner Ranches. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 514 feet, cased to 365, perforations 150-355. Highest water level 111.12 below lsd, Feb. 2, 1953; lowest 131.14 below lsd, Nov. 18, 1954. Records available: 1953-54. Feb. 2, 1953, 111.12; Oct. 28, 118.68; Feb. 19, 1954, 113.89; May 12, 181.10, nearby well being pumped; Aug. 4, 182.68, nearby well being pumped; Nov. 18, 131.14.

(A-1-4)11bcb. J. B. House. Drilled domestic water-table well in sand and gravel, diameter 6 inches, depth 201 feet. Highest water level 36.75 below lsd, Feb. 21, 1946; lowest 107.55 below lsd, Nov. 17, 1954. Records available: 1946-54. Feb. 25, 92.48; May 12, 104.85; Nov. 17, 107.55.

(A-1-6)23daa. Logan Stillwell. Drilled domestic water-table well in sand and gravel, diameter 10 inches, depth 408 feet. Land-surface datum is 1,375.7 feet above msl. Highest water level 229.20 below lsd, Mar. 19, 1946; lowest 349.65 below lsd, Nov. 17, 1954. Records available: 1946, 1948-54. Feb. 24, 328.55; May 11, 338.95; Nov. 17, 349.65.

(A-3-1)35baa. Otis Cook. Drilled domestic water-table well in sand and gravel, diameter 6 inches, depth 217 feet. Highest water level 54.47 below lsd, Mar. 20, 1946; lowest 122.93 below lsd, Aug. 4, 1954. Records available: 1946-54. Feb. 19, 114.30; May 13, 116.38; Aug. 4, 122.93; Nov. 18, 118.71.

(A-3-2)12caa. John M. Jacobs. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 417 feet, deepened to 809, perforations 179-390. Land-surface datum is 1,309.7 feet above msl. Highest water level 253.96 below lsd, Feb. 21, 1949; lowest 339.26 below lsd, Nov. 18, 1954. Records available: 1948-54. Feb. 16, 321.02; May 13, 331.87; Nov. 18, 339.26.

(A-3-4)15ddd. David and Leona Gooze. Drilled unused water-table well in sand and gravel, diameter 6 inches, depth 193 feet, uncased. Highest water level 165.82 below lsd, Mar. 24, 1946; lowest 171.46 below lsd, Oct. 21, 1952. Records available: 1946-54. Feb. 2, 168.24; May 14, 168.50; Nov. 17, 168.74.

(B-1-2)13acd. Roosevelt Irrigation District. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 155 feet, perforations 40-130. Land-surface datum is 958.9 feet above msl. Highest water level 39.0 below lsd, Apr. 30, 1928; lowest 73.25 below lsd, Mar. 27, 1950. Records available: 1928-31, 1934-41, 1944-45, 1947-54. Feb. 16, 71.94; May 13, 71.59; Aug. 4, 73.19; Nov. 18, 71.67.

(B-1-3)34bbb. Roosevelt Irrigation District. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 200 feet, perforations 74-176. Land-surface datum is 916.7 feet above msl. Highest water level 54.2 below lsd, June 1, 1944; lowest 76.32 below lsd, Nov. 3, 1952. Records available: 1928-54. Feb. 16, 68.20; May 13, 71.11; Aug. 4, 72.15; Nov. 18, 68.66.

(B-2-1)13cba2. R. E. McMurchy. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 135 feet. Highest water level 104.87 below lsd, Feb. 25, 1953; lowest 113.68 below lsd, May 13, 1954. Records available: 1952-54. Jan. 27, 111.80; May 13, 113.68. Measurement discontinued.

(B-2-2)4dcb. Maricopa County Municipal Water Conservation District No. 1. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 500 feet, perforations 204-484. Highest water level 183.7 below lsd, May 17, 1940; lowest 248.43 below lsd, Feb. 5, 1954. Records available: 1940-42, 1946-54. Feb. 5, 248.43.

(B-4-1)8daa. Maricopa County Municipal Water Conservation District No. 1. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 500 feet, perforations 182-484. Land-surface datum is about 1,335 feet above msl. Highest water level 180.0 below lsd, Nov. 28, 1938; lowest 245.77 below lsd, Aug. 4, 1954. Records available: 1938, 1940-42, 1944, 1946-54. Feb. 4, 239.19; May 13, 242.74; Aug. 4, 245.77; Nov. 18, 245.64.

(C-1-5)1aab. Charles Yokum. Drilled stock water-table well in sand and gravel, diameter 6 inches, depth 185 feet. Highest water level 62.77 below lsd, Oct. 25, 1946; lowest 82.34 below lsd, May 13, 1954. Records available: 1946-54. Feb. 16, 78.24; May 13, 82.34; Aug. 4, 82.11; Nov. 18, 77.60.

(C-1-7)15bbb. Lee C. Underdown. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 650 feet, perforations 164-254. Highest water level 178.22 below lsd, Mar. 4, 1949; lowest 184.38 below lsd, Nov. 18, 1954. Records available: 1949-54. Mar. 29, 181.84; Nov. 18, 184.38.

(D-1-5)1bbb. Salt River Valley Water Users' Association. Drilled domestic water-table well in sand and gravel, diameter 16 inches, depth 180 feet. Land-surface datum is 1,222.2 feet above msl. Highest water level 67.20 below lsd, Dec. 10, 1945; lowest 158.50 below lsd, Nov. 17, 1954. Records available: 1945-54. Feb. 24, 139.40; May 12, 147.96; Aug. 8, 149.51; Nov. 17, 158.50.

(D-1-6)25aaa. Roosevelt Water Conservation District. Drilled domestic water-table well in sand and gravel, diameter 18 inches, depth 223 feet. Land-surface datum is 1,324.1 feet above msl. Highest water level 92.76 below lsd, May 26, 1941; lowest 147.12 below lsd, Nov. 17, 1954. Records available: 1939-54. Jan. 27, 141.90; May 12, 145.25; Aug. 9, 146.86; Nov. 17, 147.12.

(D-2-5)15bbb. L. S. Breckler. Drilled domestic water-table well in sand and gravel, diameter 6 inches, depth 200 feet. Land-surface datum is 1,214.0 feet above msl. Highest water level 40.2 below lsd, Mar. 23, 1945; lowest 105.30 below lsd, Nov. 17, 1954. Records available: 1945-54. Jan. 29, 100.25; May 12, 109.10, nearby well being pumped; Aug. 11, 107.62, nearby well being pumped; Nov. 17, 105.30.

(D-2-7)12ddd. L. M. Mecham. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 600 feet, perforations 250-585. Highest water level 177.00 below lsd, Feb. 28, 1948; lowest 247.10 below lsd, Nov. 17, 1954. Records available: 1948-54. Feb. 2, 243.00; Nov. 17, 247.10.

Mohave County

(B-16-13)34dd. Dr. A. E. Carter. Dug domestic and stock water-table well in sand and gravel, diameter 4 feet, depth 20 feet. Highest water level 13.04 below lsd, Oct. 4, 1954; lowest 18.50 below lsd, Aug. 3, 1951. Records available: 1945-54. Oct. 4, 13.04.

(B-21-17)24cd. E. A. Kier. Drilled domestic water-table well in sand and gravel, diameter 6 inches, depth 120 feet. Highest water level 101.46 below lsd, Aug. 14, 1944; lowest 112.49 below lsd, Sept. 19, 1952. Records available: 1944-54. Oct. 5, 109.75.

Navajo County

(A-17-21)7bb. Arizona State Highway Department. Drilled unused water-table well in Coconino sandstone, diameter 10 inches, depth 110 feet. Land-surface datum is 5,110.5 feet above msl. Highest water level 39.51 below lsd, June 3, 1948; lowest 44.13 below lsd, July 2, 1952. Records available: 1944-54. Oct. 9, 40.45.

Pima County

(D-11-10)22add. Tom Greenfield. Drilled domestic and irrigation water-table well in sand and gravel, diameter 20 inches, reported depth 600 feet, cased to 600, perforations 145-582. Land-surface datum is 1,914.6 feet above msl. Highest water level 140.66 below lsd, Feb. 28, 1940; lowest 186.44 below lsd, May 6, 1954. Records available: 1940, 1942, 1945-48, 1950-54. May 6, 186.44; Nov. 3, 182.80.

(D-12-10)20ddc. B. Wong. Drilled domestic water-table well in sand and gravel, diameter 7 inches, depth 222 feet. Land-surface datum is 2,021.4 feet above msl. Highest water level 184.79 below lsd, Apr. 15, 1940; lowest 222.87 below lsd, Aug. 26, 1954. Records available: 1940, 1942, 1944-54. Feb. 11, 204.79; May 6, 222.00; Aug. 26, 222.87.

(D-12-11)18ddd. J. E. Glover. Drilled domestic and stock water-table well in sand and gravel, diameter 10 inches, depth 218 feet. Highest water level 189.37 below lsd, June 13, 1941; lowest 214.92 below lsd, May 6, 1954. Records available: 1940-42, 1944-47, 1949-54. Feb. 10, 213.24; May 6, 214.92; Aug. 26, 214.70.

(D-12-12)16bad. Cortaro Water Users' Association. Drilled unused water-table well in sand and gravel, diameter 24 to 18 inches, reported depth 300 feet, cased to 292, perforations 75-285. Highest water level 74.71 below lsd, Feb. 20, 1940; lowest 123.33 below lsd, Aug. 25, 1948. Records available: 1939-54. Feb. 10, 105.61; May 5, 111.08; Aug. 26, 110.63.

(D-15-10)35aaa. State of Arizona. Drilled unused water-table well in sand and gravel, diameter 6 inches, depth 295 feet. Highest water level 212.17 below lsd, Oct. 7, 1948; lowest 219.24 below lsd, Feb. 10, 1954. Records available: 1940-42, 1944, 1946-54. Feb. 10, 219.24; May 7, 216.80; Aug. 3, 217.09; Nov. 23, 217.40.

(D-15-13)2cca. City of Tucson. Dug and drilled unused water-table well in sand and gravel, diameter 12 inches, depth 104 feet. Highest water level 31.70 below lsd, July 29, 1942; lowest 64.97 below lsd, June 22, 1954. Records available: 1942-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	60.08	Apr. 26	61.67	July 28	47.90	Oct. 25	60.97
Feb. 2	60.24	May 25	62.88	29	50.52	Nov. 23	60.64
23	59.86	June 22	64.97	Aug. 26	52.41	Dec. 23	59.51
Mar. 25	60.30	July 27	44.47	Sept. 27	55.54		

(D-17-14)18cab. Arizona State Highway Department. Dug observation water-table well in sand and gravel, diameter 36 to 12 inches, depth 124 feet. Highest water level 52.16 below lsd, Jan. 2, 1940; lowest 76.30 below lsd, Sept. 17, 1954. Records available: 1939-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	71.74	.....	73.36	74.34	76.03	74.92	.....	.....	.....	75.68	74.28	73.04
2	71.59	.....	73.44	74.40	75.91	74.60	.....	.....	.....	75.64	74.24	72.97
3	71.68	72.58	73.49	74.50	75.72	75.04	.....	.....	.....	75.59	74.21	72.90
4	71.60	72.57	73.53	74.60	75.62	.....	.....	.....	.....	75.53	74.15	72.92
5	71.59	72.57	73.57	74.67	75.50	.....	.....	.....	.....	75.48	74.10	72.85
6	71.63	72.58	73.50	74.73	75.38	.....	.....	.....	.....	75.44	74.05	72.80
7	71.63	72.59	73.51	74.82	75.30	.....	.....	.....	.....	75.41	74.03	72.78
8	71.66	72.58	73.45	74.92	75.27	.....	.....	.....	.....	75.35	73.98	72.74
9	71.74	72.57	73.41	75.01	75.23	.....	.....	.....	.....	75.29	73.91	72.68
10	71.77	72.62	73.35	75.13	75.19	.....	.....	.....	.....	75.25	73.90	72.63
11	71.85	72.64	73.33	75.20	75.14	.....	.....	.....	.....	75.23	73.86	72.67
12	71.99	72.63	73.32	75.25	75.10	.....	.....	.....	.....	75.17	73.77	72.59
13	72.18	72.64	73.28	75.32	75.06	.....	.....	.....	.....	75.13	73.76	72.52
14	72.26	72.67	73.26	75.41	75.03	.....	.....	.....	.....	75.09	73.71	72.50
15	72.34	72.77	73.29	75.52	75.00	.....	.....	.....	.....	75.04	73.67	72.46
16	72.29	72.71	73.44	75.54	74.97	.....	.....	.....	.....	74.98	73.64	72.48
17	72.30	72.75	73.56	75.57	74.90	.....	.....	.....	76.30	74.95	73.62	72.42
18	72.29	72.78	73.59	75.64	74.80	.....	.....	.....	.....	74.90	73.53	72.36
19	72.31	72.81	73.59	75.71	74.73	.....	.....	.....	.....	74.83	73.48	72.33
20	72.36	72.80	73.64	75.75	74.66	.....	.....	75.59	.....	74.82	73.45	72.27
21	72.33	72.83	73.63	75.80	74.65	.....	.....	.....	76.15	74.75	73.44	72.24
22	72.31	72.89	73.65	75.81	74.65	.....	.....	.....	.....	74.70	73.39	72.19
23	72.35	72.99	73.72	75.94	74.65	75.97	76.12	.....	.....	74.64	73.35	72.16
24	72.36	73.05	73.82	76.00	74.64	.....	.....	.....	75.97	74.63	73.31	72.10
25	72.33	73.16	73.82	76.07	74.68	.....	.....	.....	75.44	74.58	73.25	72.06
26	72.36	73.21	73.89	76.12	74.70	.....	.....	.....	75.89	74.54	73.22	72.03
27	72.37	73.33	73.88	76.11	74.73	.....	.....	.....	75.84	74.50	73.16	72.05
28	.....	73.27	73.93	76.14	74.74	.....	.....	.....	75.80	74.45	73.13	71.98
29	.....		74.00	76.05	74.80	.....	.....	.....	75.77	74.41	73.08	71.89
30	.....		74.12	75.94	74.86	.....	.....	.....	75.72	74.36	73.11	71.93
31	.....		74.22		74.88		.....	.....		74.29		71.83

(D-19-13)3baa. Owner's No. W1. Farmers Investment Co. Dug and drilled irrigation water-table well in sand and gravel, diameter 96 to 10 inches, depth 246 feet, cased to 246, perforations 42-224. Highest water level 47.44 below lsd, Oct. 3, 1939; lowest 83.02 below lsd, Oct. 25, 1954. Records available: 1939-54. July 23, 74.75; Oct. 25, 83.02; Nov. 8, 69.20.

Pinal County

(D-2-10)8ccc. E. M. Little. Drilled unused water-table well in sand and gravel, diameter 8 inches, depth 437 feet. Highest water level 396.82 below lsd, Jan. 22, 1946; lowest 411.72 below lsd, Feb. 28, 1941. Records available: 1939-54. Feb. 10, 403.91; May 11, 404.12; Aug. 6, 404.92; Nov. 17, 405.25.

(D-3-9)20aaa. Elmer C. Von Glahn. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 600 feet, perforations 285-585. Highest water level 222.70 below lsd, Feb. 17, 1949; lowest 268.30 below lsd, Nov. 12, 1952. Records available: 1942, 1948-52. No measurement made in 1954.

(D-4-8)2ccc. Arizona Ranches, Inc. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 237 feet. Land-surface datum is 1,530.5 feet above msl. Highest water level 157.96 below lsd, June 12, 1941; lowest 224.33 below lsd, Nov. 17, 1954. Records available: 1941-54. Feb. 26, 218.00; May 11, 219.92; Aug. 9, 221.97; Nov. 17, 224.33.

(D-4-11)7cca. Bureau of Indian Affairs well 7. Drilled unused water-table well in sand and gravel, diameter 20 inches, reported depth 162 feet, cased to 80. Land-surface datum is 1,560.4 feet above msl. Highest water level 15.30 below lsd, June 29, 1943; lowest 44.14 below lsd, Nov. 24, 1948. Records available: 1942-54. Feb. 17, 34.92; May 4, 29.93; Aug. 19, 26.70; Nov. 16, 26.10.

(D-5-4)30cbb. Harrison & Harris. Drilled domestic water-table well in sand and gravel, diameter 14 inches, depth 188 feet. Land-surface datum is 1,242.7 feet above msl. Highest water level 81.05 below lsd, Mar. 13, 1942; lowest 169.20 below lsd, May 5, 1954. Records available: 1942-54. Feb. 18, 163.87; May 5, 169.20. Measurement discontinued.

(D-5-9)29ada. Bureau of Indian Affairs well 76. Drilled unused water-table well in sand and gravel, diameter 16 inches, reported depth 616 feet, perforations 134-440. Land-surface datum is 1,520.0 feet above msl. Highest water level 114.24 below lsd, Feb. 16, 1944; lowest 178.71 below lsd, Aug. 19, 1954. Records available: 1942-54. Feb. 17, 172.66; Aug. 19, 178.71; Nov. 16, 165.92.

(D-6-6)25ddd. H. L. Early. Drilled irrigation water-table well in sand and gravel, diameter 16 inches, depth 171 feet. Land-surface datum is 1,438.3 feet above msl. Highest water level 39.00 below lsd, Apr. 18, 1940; lowest 110.06 below lsd, Feb. 15, 1954. Records available: 1940-52, 1954. Feb. 15, 110.06.

(D-7-6)30add. A. R. Chapman. Dug and drilled unused water-table well in sand and gravel, diameter 20 inches, depth 100 feet. Land-surface datum is 1,443.6 feet above msl. Highest water level 52.64 below lsd, Mar. 12, 1942; lowest 87.80 below lsd, Sept. 11, 1951. Records available: 1942-52. Measurement discontinued.

(D-7-7)11cdd. E. C. Grasty. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 460 feet, perforations 100-430. Land-surface datum is 1,498.2 feet above msl. Highest water level 85.93 below lsd, Mar. 11, 1942; lowest 178.69 below lsd, Feb. 15, 1954. Records available: 1942-54. Feb. 15, 178.69.

(D-8-6)29acc. Leon Zagouies. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 282 feet, perforations 75-208. Land-surface datum is 1,501.2 feet above msl. Highest water level 63.89 below lsd, Sept. 12, 1941; lowest 121.40 below lsd, Sept. 1, 1953. Records available: 1941-53. Measurement discontinued.

(D-8-6)30dad. Chiu Chuischu Ranch. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 296 feet, perforations 69-200. Highest water level 108.59 below lsd, July 28, 1948; lowest 158.70 below lsd, May 6, 1954. Records available: 1948-52, 1954. July 28, 1948, 108.59; Feb. 8, 1949, 109.89; Feb. 10, 1950, 110.82; Feb. 21, 1951, 108.79; Feb. 14, 1952, 118.03; May 6, 1954, 158.70; Nov. 18, 151.40.

(D-8-7)25ddd. R. E. Hamilton. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 997 feet. Land-surface datum is 1.614.8 feet above msl. Highest water level 124.47 below lsd, Mar. 24, 1941; lowest 281.10 below lsd, Aug. 4, 1954. Records available: 1940-52, 1954. Aug. 4, 281.10.

(D-10-9)10dba. H. H. Cake. Drilled domestic water-table well in sand and gravel, diameter 8 inches, depth 188 feet. Land-surface datum is about 1,798 feet above msl. Highest water level 143.36 below lsd, July 3, 1941; lowest 170.28 below lsd, Feb. 21, 1952. Records available: 1941-52. Measurement discontinued.

(D-10-9)36ddd1. King Investment Co. Drilled domestic water-table well in sand and gravel, depth 230 feet, diameter 8 inches. Highest water level 134.40 below lsd, Oct. 12, 1939; lowest 164.30 below lsd, Feb. 8, 1954. Records available: 1939, 1941-44, 1949-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12, 1939	134.40	July 18, 1944	138.00	Dec. 28, 1951	150.72	Apr. 22, 1953	158.36
Dec. 1, 1941	134.76	Mar. 24, 1949	147.00	Feb. 20, 1952	149.25	July 22	158.97
Mar. 5, 1942	134.87	Aug. 31	144.62	May 14	152.04	Oct. 21	161.24
Aug. 24	134.50	Nov. 17	143.45	Sept. 10	156.34	Feb. 8, 1954	164.30
Dec. 21	135.88	Feb. 7, 1950c	143.77	Dec. 9	153.12	May 6	c164.66
Nov. 4, 1943	138.40	Sept. 26	146.32	Feb. 2, 1953	152.70	Nov. 3	c171.87
Jan. 15, 1944	136.83	Feb. 28, 1951	144.44				

c Nearby well being pumped.

Santa Cruz County

(D-22-13)35dcd. T. T. Pendleton. Drilled irrigation water-table well in sand and gravel, diameter 20 inches, depth 88 feet. Highest water level 16.01 below lsd, Oct. 25, 1939; lowest 53.71 below lsd, Feb. 9, 1954. Records available: 1939-54. Jan. 6, 48.38; Feb. 9, 53.71; Mar. 3, 50.41; Mar. 30, 52.96; Sept. 17, 29.12; Oct. 25, 29.48; Nov. 8, 27.10.

(D-23-14)27baa. Ramon Michelena. Dug unused water-table well in sand and gravel, diameter 5 feet, depth 36 feet, concrete casing to 9, open hole 9-36. Highest water level 16.78 below lsd, Mar. 26, 1941; lowest 21.80 below lsd, July 28, 1948. Records available: 1939-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	19.87	Apr. 27	18.50	July 23	21.30	Oct. 25	17.99
Feb. 8	19.90	May 17	18.99	Aug. 25	18.25	Nov. 8	18.00
Mar. 3	19.28	June 23	21.06	Sept. 17	18.24		

Yavapai County

(B-11-5)25dab. Mr. Towne. Drilled unused water-table well in sand and gravel, diameter 8 inches, depth 212 feet. Highest water level 23.60 below lsd, July 16, 1952; lowest 40.80 below lsd, Aug. 4, 1951. Records available: 1946, 1948-49, 1951-54. Oct. 6, 29.04.

(B-13-6)9dd. J. W. Ropeter. Dug irrigation water-table well in sand and gravel, diameter 6 feet, depth 22 feet. Well deepened. Highest water level 13.98 below lsd, Jan. 17, 1945; lowest 17.97 below lsd, Aug. 4, 1951. Records available: 1945-49, 1951-54. Oct. 6, 23.45, pumping.

(B-14-4)33ab. C. C. McLain. Drilled unused water-table well in sand and gravel, diameter 16 inches, depth 73 feet. Well deepened to 85 feet. Highest water level 11.03 below lsd, Apr. 14, 1945; lowest 18.20 below lsd, Oct. 6, 1954. Records available: 1944-49, 1951-54. Oct. 6, 18.20.

Yuma County

(B-5-16)10ddd. Crowder Cattle Co. Drilled unused water-table well in sand and gravel, diameter 16 inches, depth 164 feet. Highest water level 112.60 below lsd, Feb. 21, 1946; lowest 113.44 below lsd, Apr. 1, 1954. Records available: 1946, 1948-54. Apr. 1, 113.44.

(C-8-16)28bda. Bob Anderson. Drilled domestic well in sand and gravel, diameter 16 inches, depth 419 feet. Highest water level 82.62 below lsd, Dec. 19, 1945; lowest 86.98 below lsd, Mar. 3, 1954. Records available: 1945-47, 1949-54. Mar. 3, 86.98.

(C-9-22)17ddd. Archie J. Griffin. Drilled unused water-table well in sand and gravel, diameter 16 inches, depth 195 feet. Land-surface datum is 210.5 feet above msl. Highest water level 74.05 below lsd, Mar. 3, 1954; lowest 97.63 below lsd, Sept. 5, 1946. Records available: 1945-54. Mar. 3, 74.05.

CALIFORNIA

By L. C. Dutcher, K. S. Muir, and P. R. Wood

Scope of Water-Level Program

This report shows the progress made in 1954 in the measurement of water levels in California in cooperation or collaboration with several other Federal, State, and local agencies. Also, it reviews the general scope of certain other water-level programs in the State in which the Geological Survey did not participate, but concerning which general information is available.

The following table indicates the distribution of observation wells by counties. As the table shows, the report covers water-level measurements during 1954 in 380 observation wells in 8 of the 58 counties in the State. San Joaquin County is in the central part; the others are in the southern part of the State, south of the Tehachapi Mountains. The water-level measurements cover all the principal ground-water areas in San Diego and Santa Barbara Counties. Only scattered basins or areas are covered in the other counties.

Distribution of observation wells in California in 1954
(for which water-level records are given in this report)

County	Number of observation wells	Number of wells with recording gages
Kern County:		
Antelope Valley, part	1	0
Los Angeles County:		
Antelope Valley, part	45	0
San Gabriel River basin	1	1
Coastal plain	6	0
Orange County:		
Coastal plain	19	0
Riverside County:		
San Jacinto Valley	3	0
San Bernardino County:		
Mojave River basin	56	0
Santa Ana River basin	12	0
San Diego County:		
San Luis Rey River basin	10	0
San Dieguito River basin	7	0
San Diego River basin	7	0
Sweetwater River basin	2	0
Otay River basin	2	0
Tia Juana River basin	4	0
San Joaquin County:		
Mokelumne River basin	24	0
Santa Barbara County:		
Carpinteria Basin	18	1
Goleta Basin	21	0
Santa Ynez Valley	79	5
San Antonio Valley	4	0
Santa Maria Valley area	44	0
Cuyama Valley	15	0
	380	7

In addition to this program in which the Geological Survey participated, systematic measurements of water levels in wells were made by numerous agencies in widely scattered and extensive parts of California. In the southern part of the State, the California Department of Public Works, Division of Water Resources, continued to assemble records of water levels in wells from various agencies for the South Coastal Basin and in Antelope and San Jacinto Valleys. Records for 1951 were published in the Division's Bulletin 39-T, which continues the series beginning with Bulletin 39, published in 1932. The California Division of Water Resources also continued to assemble records

of water levels in wells from various agencies for the North Coastal, San Francisco Bay, Central Coastal, Central Valley, Lahontan, and Colorado Desert regions. Records of ground-water conditions in these areas were published in the Division's annual bulletin, "Water conditions in California, April 1, 1954." The programs of water-level measurements by the several agencies are listed in the following tables.

Programs of water-level measurements by public agencies in the South Coastal Basin in 1954

Subarea and agency	Wells measured and frequency of measurements			
	Semi-annually	Quarterly	Monthly	More frequently
Coastal plain, Los Angeles County:				
San Gabriel Valley Protective Association			75	
City of Long Beach			21	41
Los Angeles County Flood Control District	a438		b186	
California Division of Water Resources (West Coastal Basin)	120			
Coastal plain, Orange County:				
Orange County Flood Control District		47	390	48
San Fernando Valley:				
Los Angeles Division of Water and Power	147		97	22
Los Angeles County Flood Control District	62		c55	
Soil Conservation Service (Western part of valley)			27	
Raymond Basin:				
California Division of Water Resources	110			
San Gabriel Valley:				
Los Angeles County Flood Control District	d130		e129	
San Gabriel Valley Protective Association			79	
Upper Santa Ana Valley:				
Chino Basin				
San Bernardino County Flood Control District	263		28	97
San Bernardino Valley				
San Bernardino Valley Water Conservation District		f152		
San Bernardino Water Department		117	28	
San Jacinto Valley:				
Riverside Flood Control and Conservation District	g103		58	
California Division of Water Resources	g100			
Elsinore area, Riverside County:				
California Division of Water Resources	g110			
Santa Margarita River valley:				
California Division of Water Resources	g500			
Ventura County coastal area:				
California Division of Water Resources				
Big Sycamore Canyon	4			
Sequit Canyon	2			
Ramera Canyon	8			
Malibu Canyon	1			
Las Flores Canyon	2			
Topanga Canyon	3			
San Luis Rey Valley, San Diego County:				
California Division of Water Resources			20	

a Includes 63 shallow test holes.
b Includes 59 shallow test holes.
c Includes 13 shallow test holes.
d Includes 14 shallow test holes.
e Includes 23 shallow test holes.
f Includes 16 shallow test holes.
g Annual measurements.

Programs of water-level measurements by public agencies in the southern California desert areas in 1954

Subarea and agency	Wells measured and frequency of measurements		
	Semi-annually	Quarterly	Monthly
Tehachapi Valley, Kern County:			
Soil Conservation Service			45
Mojave River basin, San Bernardino County:			
San Bernardino County Flood Control District	186		
Morongo Valley, San Bernardino County:			
San Bernardino County Flood Control District	11		
Yucca-Twentynine Palms area, San Bernardino County:			
San Bernardino County Flood Control District	97		
Lucerne Valley, San Bernardino County:			
San Bernardino County Flood Control District	23		
U. S. Geological Survey	23		
Borrego Valley, San Diego County:			
U. S. Geological Survey	14		
Coachella Valley, Riverside County:			
Coachella Valley County Water District		56	
Ocotillo Valley, San Diego County:			
U. S. Geological Survey	3		
Coyote Valley, San Bernardino County:			
U. S. Geological Survey	6		
Cronise Valleys, San Bernardino County:			
U. S. Geological Survey	4		
Soda Lake Valley, San Bernardino County:			
U. S. Geological Survey	5		
Silver Lake Valley, San Bernardino County:			
U. S. Geological Survey	1		
California Division of Water Resources	1		
Superior Valley, San Bernardino County:			
U. S. Geological Survey	4		
Cuddeback Valley, San Bernardino County:			
U. S. Geological Survey	4		
Indian Wells Valley, Kern County:			
U. S. Geological Survey			2
Harper Valley, San Bernardino County:			
U. S. Geological Survey	11		
Fremont Valley, Kern County:			
Chaffee Basin			
U. S. Geological Survey	3		
Koehn Lake area			
U. S. Geological Survey	12		
Antelope Valley, Los Angeles and Kern Counties:			
Lancaster, Neenach, Buttes, and Rock Creek Basins			
California Division of Water Resources	65		
Los Angeles County Flood Control District	32		
Willow Springs area, Kern County:			
U. S. Geological Survey	5		
North Muroc Basin, Kern County:			
U. S. Geological Survey	3		
Johnson Valley, San Bernardino County:			
U. S. Geological Survey	2		
Pahrump Valley, Inyo County:			
California Division of Water Resources	7		
Upper Kingston Valley, San Bernardino County:			
California Division of Water Resources	3		
Ivanpah Valley, San Bernardino County:			
California Division of Water Resources	8		
Mesquite Valley, San Bernardino County:			
California Division of Water Resources	7		
Kelso Valley, San Bernardino County:			
California Division of Water Resources	1		

Programs of water-level measurements by public agencies in the southern California desert areas in 1954--Continued

Subarea and agency	Wells measured and frequency of measurements		
	Semi-annually	Quarterly	Monthly
Lanfair Valley, San Bernardino County:			
California Division of Water Resources	5		
Fenner Valley, San Bernardino County:			
California Division of Water Resources	5		
Vidal Valley, San Bernardino and Riverside Counties:			
California Division of Water Resources	1		
Chuckwalla Valley, Riverside County:			
California Division of Water Resources	2		
Vallecito-Carrizo Valley, San Diego and Imperial Counties:			
California Division of Water Resources	2		

Precipitation

A weather summary for California for the calendar year 1954 is quoted from the annual report of climatological data issued by the U. S. Weather Bureau:

> The average total precipitation for 1954 was near normal in California, a welcome change from the deficient average California precipitation total for 1953. Precipitation totaled slightly above normal for the year in the North Coast and Sacramento Drainage Divisions, near normal in the San Joaquin Drainage Division, and about 84-90 percent of normal in the other four divisions. The U. S. Geological Survey Water Resources Review Annual Summary for the Water Year ending September 30, 1954, showed excessive streamflow in northern California and streamflow generally 75-85 percent of normal in central and southern California. Temperatures averaged slightly above normal for the year with the weather of 1954 generally considered favorable for agriculture.
>
> Above-normal precipitation fell in January in all except the Northeast Interior and Central Coast Drainage Divisions with a midmonth storm bringing heavy rains in the north coastal areas and almost the entire snow pack in the Sierra Nevada. February precipitation averaged about 75 percent of normal with almost all of the precipitation falling in the period from the 11th through the 18th. March snowfall was much above normal in the Sierra Nevada and southern mountain areas but in April the snowfall was generally light. It was the third driest May in the State since records began in 1897, only about 15 percent of the average State precipitation being recorded. June precipitation was above normal with much above-normal snowfall in the Sierra Nevada. Although July precipitation averaged slightly above normal for the State, less than half of the normal precipitation was received in the northern divisions of the State; much above-normal precipitation occurred in the southeastern interior and some south coastal districts with some stations reporting the greatest monthly and daily June amounts on record. About twice the State average precipitation was received in August with one of the heaviest and most widespread August storms of record occurring in northern California during the last week. September precipitation was generally deficient in all areas with the driest area in the San Joaquin and Central Coastal Drainages; precipitation in the Central Coast averaged only 5 percent of normal, and in the San Joaquin only a trace of rain was received. Less than half of the average precipitation fell in northern California during October and practically no precipitation occurred in the southern half of the State. November precipitation was generally above normal in northern California and below normal in southern California.

Where there is a marked seasonal range in precipitation, such as prevails throughout California, ground-water storage generally is greatest and natural ground-water levels are highest during or somewhat after the height of the wet season. During the following dry season the unconfined ground-water storage is depleted by natural discharge, and water levels recede in wells. This depletion continues 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 midautumn. For this 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 following table shows the monthly distribution of statewide average precipitation in California for the 58-year period ending with 1954. The very marked seasonal range in precipitation is apparent. Of the 23.96 inches total for the 12 months, about 80 percent fell during the 5 months November-March, and less than 4 percent fell during the 4 summer months June-September.

Statewide average monthly and yearly precipitation, 1897-1954

Month	Inches	Percent of yearly total	Month	Inches	Percent of yearly total
October	1.28	5.4	April	1.70	7.1
November	2.49	10.4	May	.92	3.8
December	3.97	16.6	June	.33	1.4
January	4.72	19.7	July	.08	.3
February	4.27	17.8	August	.11	.5
March	3.70	15.4	September	.39	1.6
Total	20.43	85.3		3.53	14.7
The year				23.96	100.0

The following table shows the precipitation during the water year ending September 30, 1954, at 15 representative stations in the State, expressed both in inches and in percentage of the average for the 60 years ending September 30, 1950. The 15-station average was 89 percent of the 60-year average, and the median of the group was 86 percent of the 60-year average. The regional distribution of rainfall over the State is well illustrated by this table. For the central and southern coast ranges, the rainfall was 2 to 29 percent below average, except at Cuyamaca where it was 6 percent above average. For the remainder of the State, the rainfall was not more than 22 percent below average, 3 stations reporting a greater-than-average precipitation.

Precipitation in the year ending September 30, 1954, and percent of 60-year average at 15 representative stations

Province	Station and county	Precipitation, 1953-1954	
		Inches	Percent of 60-year average [a]
Northern Coast Ranges	Eureka, Humboldt	43.53	113
Coastal Ranges of central and southern California	San Francisco, San Francisco	14.43	71
	San Luis Obispo, San Luis Obispo	19.77	93
	Santa Barbara, Santa Barbara	15.45	86
	Los Angeles, Los Angeles	11.99	83
	San Bernardino, San Bernardino	16.30	98
	San Diego, San Diego	9.13	90
	Cuyamaca, San Diego	40.79	106
Great Valley (California Trough)	Red Bluff, Tehama	18.23	79
	Stockton, San Joaquin	10.54	76
	Fresno, Fresno	8.89	95
Sierra Nevada	Nevada City, Nevada	51.11	103
	West Point, Calaveras	31.38	80
Great Basin (Southwestern Bolson province)	Indio, Riverside	2.62	78
	Needles, San Bernardino	3.75	83

[a] Average for years ending Sept. 30, 1891 to 1950.

Runoff

The runoff in the northern and central California streams during the water year ending September 30, 1954, ranged from considerably above normal to as much as 21 percent below normal. Representative of the runoff in the northern and central parts of the State is the year's total for Trinity River at Lewiston in the north coastal drainage, which was 165 percent of normal; for the North Fork of the American River at North Fork Dam, 83 percent; and for Kings River at Piedra in the southern Sierra drainage, 89 percent. Runoff in the southern part of the State was far below normal, as indicated at the following gaging stations: Santa Ana River near Mentone, where it was 72 percent of the 58-year mean, and the Arroyo Seco near Pasadena, where it was reported equal to 45 percent of a 40-year mean. The runoff measured at the gaging station on the Santa Ana River was affected by regulation at Big Bear Lake.

Interpretation of Water-Level Fluctuations

San Diego County.--The observation-well program in the 6 principal coastal valleys of San Diego County was reviewed and expanded to include 13 new wells. Changes in pumping regimen and location and the drought since 1944 made the addition of new observation wells necessary to determine accurately the ground-water conditions in each valley. The records for only 19 wells were reported in 1953.

Wells in the coastal valleys of San Diego County for which measurements are reported for the first time

San Luis Rey River basin	10/1W-8P1	10/3W-16F1	11/4W-2D1
San Dieguito River basin	13/2W-1J1	13/3W-33M1	14/3W-7C1
		13/3W-33C1	
San Diego River basin	16/2W-19D1	16/3W-21R1	
Tia Juana River basin	19/2W-1N1	19/2W-4A6	
Sweetwater River basin	17/2W-35E1		
Otay River basin	18/1W-19D1		

The rainfall in San Diego County during 1954 was about average. The water levels in most observation wells, however, had a net decline from the year-end levels in 1953 to those in 1954; in many the 1954 levels were the lowest of record.

In the San Luis Rey River valley, water levels from November 1953 to November 1954 in 9 wells declined an average of 2.2 feet. The levels in 4 of the wells (10/3W-30K1, 11/4W-9F1, 11/4W-18L3, 11/5W-13N1) were the lowest of record for the period 1940-54. Inland from the coast for about 5 miles, the "static" water levels locally were 2 to 30 feet below sea level and nowhere were more than 30 feet above. Within 3 miles of the coast, salt-water intrusion has rendered useless several public-supply and irrigation wells.

In San Pasqual Valley in the upstream part of San Dieguito River basin, water levels from November 1953 to November 1954 in 3 of the wells declined an average of 0.64 foot. In November, the level in well 12/1W-31H2 reached the lowest of record for the period 1929-54. The levels in the other two wells were below the average for the same period. Measurements in three wells in the coastal part of San Dieguito River basin are listed for the first time. Between the coast and 5 miles inland, water levels were below sea level during part of 1954, according to measurements in wells 13/3W-33M1 and 14/3W-7C1. Irrigation wells, which supply water to alfalfa and row crops, had pumping levels below sea level. It is reported that wells 2 to 3 miles inland from the coast have been rendered useless as a source of supply by sea-water intrusion.

In the upstream part of San Diego River basin, water levels from November 1953 to November 1954 in 4 wells declined an average of 7.8 feet. The records for two wells, 16/2W-19D1 and 16/3W-21R1, are reported for the first time. The levels in wells 15/1W-24D7, -28B1, 15/1E-10L1 and -17H6 reached the lowest of record. Three candidate wells are being measured, and the records will be published in future years. In Mission Valley, which is the coastal part of San Diego River basin, the water level from November 1953 to November 1954 in well 16/3W-23K3 declined 0.67 foot and was within 1 foot of the record low for the period 1937-54. The "static" water levels in 1954 ranged from 7 feet above sea level near Mission Bay to 433 feet above sea level about 22 miles inland.

In the coastal part of Tia Juana River basin, water levels from November 1953 to November 1954 in wells 18/2W-33L1 and -34J1 declined an average of nearly 2 feet. The levels in both reached the lowest of record for the period 1927-54. The levels in wells 19/2W-1N1 and -4A6, for which measurements are included for the first time, showed declines of only 1 foot or less for the period December 1953 to November 1954. In the last half of 1954, the levels in wells 18/2W-33L1 and 19/2W-4A6, which are 2 and 2.5 miles, respectively, from the ocean, were slightly below sea level. In well 18/2W-34J1, which is 3.4 miles from the ocean, the levels were between 8 and 15 feet above sea level.

In Sweetwater River basin, the water level from November 1953 to November 1954 in well 17/1W-19Q2, which is about 6 miles from San Diego Bay, rose 2.09 feet and was about 77 feet above sea level. The level in well 17/2W-35E1, which is about 2.5 miles from the coast, rose 3.93 feet from December 1953 to November 1954.

In Otay River basin, the water level from November 1953 to November 1954 in well 18/2W-22F1, about 2 miles from San Diego Bay, declined 3.0 feet and was slightly below sea level from August to December. The water level in well 18/1W-19D1, about 4.5 miles from the coast, declined about 0.1 foot from December 1953 to November 1954. Water-level measurements in this well are reported for the first time. Within 1.5 miles of the bay, wells less than 50 feet deep obtain water of usable quality for public supply; deeper wells tap poor quality water that cannot be used for this purpose.

Coastal plain in Los Angeles and Orange Counties. --In the coastal plain in Los Angeles and Orange Counties for 1954, a program of water-level measurements was not undertaken by the Geological Survey. However, extensive programs for periodic measurements were continued by several local agencies--in Orange County chiefly by the Orange County Flood Control District and in Los Angeles County by the Los Angeles County Flood Control District, the San Gabriel Valley Protective Association, the city of Long Beach, and the California Division of Water Resources. Records are included in this report for 2 wells in the main coastal basin in Los Angeles County, for 14 wells in the main coastal basin in Orange County, for 4 wells in the west (coastal) basin in Los Angeles County, and for 5 wells southwest of the Newport-Inglewood uplift in Orange County. Of the 28 wells for which records for 1953 were included in Water-Supply Paper 1270,

all but those for wells 2S/12-13A1, 5S/11-29C4, and 6S/10-1E1, which were destroyed during the year, appear in this report. Of these wells, records for 20 have been furnished by local agencies. Five of the wells in Orange County are "permanent" observation wells which were measured by the Geological Survey three times during the year.

Records published by the U. S. Weather Bureau for 3 rainfall stations on the coastal plain of Los Angeles and Orange Counties--Los Angeles at the north edge, Long Beach near the southwest edge, and Santa Ana near the southeast edge--indicate that rainfall on this area in the calendar year 1954 was nearly normal or about 99 percent of the 60-year average. Because it spans the rainy season, use of the water year gives a more consistent approach to the relation of rainfall to runoff and to ground-water replenishment. However, because water-level records are tabulated in the annual reports on a calendar year basis, the following tables summarize rainfall records not only for the 1953-54 water year but also for the 1954 calendar year.

Precipitation, in inches, for three stations on the coastal plain in Los Angeles and Orange Counties

Date	Station					
	Los Angeles		Long Beach		Santa Ana	
	Current	Departure	Current	Departure	Current	Departure
October 1953	T	-0.50	0.00	-0.47	0.00	-0.65
November	1.11	+.08	1.33	+.37	1.01	-.07
December	.08	-3.03	.02	-2.67	.13	-2.79
January 1954	4.60	+2.22	5.43	+3.43	4.35	+2.22
February	2.98	-.39	3.21	+.25	2.72	-.30
March	2.99	+.63	3.15	+1.27	2.98	+.54
April	.13	-1.04	.15	-.72	T	-.94
May	.02	-.24	T	-.23	.00	-.38
June	.08	+.01	.01	+.01	.02	-.02
July	T	.00	.01	+.01	.01	.00
August	T	-.02	.03	.00	T	-.05
September	T	-.27	T	-.21	.00	-.19
The water year 1953-54	11.99	-2.55	13.34	+1.04	11.22	-2.63
October	T	-.50	.00	-.47	T	-.65
November	2.03	+1.00	1.37	+.41	1.34	+.26
December	.86	-2.25	.77	-1.92	1.24	-1.68
The calendar year 1954	13.69	-.85	14.13	+1.83	12.66	-1.19

T, Trace.

Reversing a trend that had continued for several years in the main coastal basin of Orange County, the year-end water levels generally rose above those of 1953. The rise may be due to nearly normal rainfall during 1954 and to the spreading and recharging of water imported from the Colorado River to supplement natural recharge from rainfall and runoff. During 1954 the imported water, which for several previous years has supplemented natural ground-water recharge to the basin, reduced somewhat the continuing overdraft. Of the 19 wells reported for the main coastal basin in Orange County, the lowest water level for the periods of record occurred about at midyear during 1954 in 7 wells. Thus, in general the downward trend established during the past several years has continued, although the year-end levels were above those of the previous year. Except for well 6S/10-1L2, water levels in all reported wells in the main coastal basin in Orange County still were below sea level during the entire year, and sea-water intrusion reportedly continued locally near the coast. On the other hand, the West Basin is remote from major sources of recharge. Recent restrictions in pumping from the basin, principally brought about by litigation to protect the basin against salt-water encroachment, may be the reason for a reduction in the rate of water-level decline in 1954. The lowest water level for the period of record for well 3S/12-8L3 in the main coastal basin in Los Angeles County and for well 4S/13-14L in the west coastal basin in Los Angeles County occurred in 1954. During the 1953-54 water year, local agencies reportedly purchased about 105,000 acre-feet of Colorado River water at a cost of about $1,000,000 for use in recharging depleted ground-water reserves in coastal areas of Los Angeles and Orange Counties.

The following table summarizes water-level fluctuations in 20 selected observation wells in the coastal plain in Los Angeles and Orange Counties. In this table, water levels at 1954 year-end are compared to the year-end levels of 1953 and to those of the previous low-water year 1936. The data are tabulated separately in three groups: the main coastal basin in Orange County, the main coastal basin in Los Angeles County, and the West Coastal Basin in Los Angeles County. Within the main coastal basin water levels in index wells in Orange County showed a net recovery of 2.3 feet in 1954 and a net drop of 19.4 feet since 1936. An index well in Los Angeles County showed a net decline of 0.4 foot in 1954 and a net drop of 25.7 feet since 1936. Within the West Basin index wells in Los Angeles County showed a net drop of 0.5 foot in 1954 and a net drop of 54.0 feet since 1936.

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

Well	Water level at end of December, in feet above (+) or below (-) sea level[a]			Net rise (+) or decline (-) in water level, in feet	
	1936	1953	1954	1936-54	1953-54
	Wells in the main coastal basin--Orange County				
[illegible]3/11-36Q2	+18.2	-11.4	-7.4	-25.6	+4.0
4S/10-22L2	+10.2	-8.0	-5.0	-17.2	+3.0
4S/11-19K1	+10.9	-15.0	-14.0	-24.9	+1.0
[illegible]3/10-9D1	+10.0	-13.8	-13.6	-23.6	+.2
[illegible]3/10-28B1[b]	....	-13.5	-10.1	....	+3.4
[illegible]3/11-2E1	+4.4	-16.0	-13.0	-17.4	+3.0
5S/11-16D2	+2.0	-19.8	c-16.2	-18.2	+3.6
5S/11-25P1	+3.5	-16.0	-15.0	-18.5	+1.0
5S/11-28A1	+.6	-32.4	-26.9	-27.5	+5.5
5S/12-12P1	+.9	d-16.1	-15.5	-16.4	+.6
6S/10-1L2[b]	+17.1	+13.8	+13.4	-3.7	+.4
6S/10-5C1	+3.5	e-14.7	-14.6	-18.1	+.1
6S/11-13G2	+.8	-7.0	-5.8	-6.6	+1.2
[illegible]-9F1	-1.8	-24.8	-20.7	-18.9	+4.1
Averages	+5.5	-16.2	-13.9	-19.4	+2.3
	Wells in the main coastal basin--Los Angeles County				
3S/12-8L3	+62.6	+36.5	+36.9	-25.7	-0.4
4S/11-5D1	+14.5	-7.2	....	....	...
Averages	+38.6	+14.6	....	....	...
	Wells in the West (coastal) Basin, tapping deposits of Pleistocene age (the Silverado water-bearing zone or its equivalent)				
3S/14-3K1[b]	....	e-60	e-74	....	-14
3S/14-21B1	-11	e-59	e-57	-46	+2
4S/13-14L1[f]	+.3	e-9.9	g-10.9	-10.6	-1.0
4S/13-23G2	-34.3	e-93.2	g-96.2	-61.9	-3.0
Averages	-22.6	-76.1	-76.6	-54.0	-0.5

a/ Chiefly interpolated.
b/ Excluded from averages.
c/ Measurement on Dec. 29.
d/ Measurement on Dec. 24.
e/ Measurement on Dec. 28.
f/ Taps Gaspur water-bearing zone of Recent age; excluded from averages.
g/ Measurement on Dec. 27.

San Gabriel River basin.--A recording gage was in operation throughout 1954 at well 1S/10-18, the index well at Baldwin Park for the upper San Gabriel Valley, for which records are available since 1903. During 1954 the water level ranged from a high of 261.14 feet above sea level on May 31 to a low of 252.17 feet above sea level on January 13 and 14. The high level on May 31 was 69.86 feet below the highest observed level on May 19, 1916, and 13.50 feet below the highest 1953 level on January 1. The low of January 13 and 14 was 6.79 feet above the previous low on November 20, 1951, and 1.86 feet below the lowest 1953 level on December 31. The above-normal precipitation and runoff during the first part of the 1954 calendar year presumably resulted in the continuous recovery of water level in the well from mid-January to June 1954, at which time the usual seasonal water-level decline began.

The flow in Mission Creek, one of the three principal streams receiving ground-water discharge from the San Gabriel Valley, originates as ground-water seepage into the streambed, about 1 mile above Whittier Narrows. The flow reflects the changes in the elevation of the ground-water table in the basin upstream. Using Mission Creek as an index, the surface flow for the water year of 1930-31 was 11,820 acre-feet and for the water year of 1952-53 was only 6,170 acre-feet.

Santa Ana River basin, San Bernardino area.--During 1954 the water-level observation-well program in the San Bernardino area was reviewed. No extensive program of water-level measurements was undertaken by the Geological Survey, but programs for periodic measurements in observation wells were continued by several local agencies. When the Geological Survey's observation-well program was expanded in 1944, the selection of most wells with respect to depth was adequate, but the distribution of wells was not satisfactory because most were in the southern part of Bunker Hill Basin. After 1944, many shallow wells became dry. Of the 7 wells reported for 1953, 6 were discontinued, including 1 that was dry during the entire year. The record for well 1S/3-17C1, in the recharge area near the Santa Ana River in the central part of the basin, was continued. The records for 11 wells representative of water levels in separate ground-water basins, water-bearing zones, or localities are listed in the annual water-level report for the first

time. Well 1S/5-22E1 is in the eastern part of Chino Basin; well 1N/5-23P4 is in upper Lytle Basin; well 1S/4-29H2 is in the southern part of Rialto-Colton Basin; and well 1S/5-2K1 is in the central part of Rialto-Colton Basin. Wells 1N/4-32N1, 1S/4-1A6, and 1S/3-32D1 penetrate the intermediate and deep water-bearing zones in the confined area of Bunker Hill Basin. Well 1S/3-23A2 is near the eastern margin of the basin in the unconfined or intake area. Well 1S/4-15A1 penetrates the deep water-bearing zone in the central confined area of the basin. In addition, records are included for wells 1S/4-15M2 and 1S/4-21A1, which penetrate the deep and shallow zones, respectively, just upstream from the San Jacinto fault. Thus, the records for 12 wells are tabulated in this report.

Bunker Hill Basin is separated from Rialto-Colton Basin by the San Jacinto fault and from Lytle Basin by the Loma Linda fault and other associated ground-water barriers. At depth the faults act as barriers to ground-water movement. Because of this pressure, levels are substantially above land surface in deeper wells upstream or northeast of the fault in Bunker Hill Basin. Rialto-Colton Basin is separated from Chino Basin by the Rialto-Colton barrier. Locally, water levels in wells are as much as 200 to 300 feet lower in Chino Basin on the west than in Rialto-Colton Basin on the east.

Continuing the trend of the last several years, the spring recovery of water levels was generally below that of 1953. Of the 8 wells reported for Bunker Hill Basin, the lowest water level for the periods of record occurred in 6 of the wells during 1954. The lowest water level for the period 1927-54 was recorded in December 1954 in well 1S/5-22E1 in Chino Basin. Water levels in Rialto-Colton and upper Lytle Basins were somewhat higher than those during the previous low-water year in 1936. The following table summarizes water-level fluctuations in 12 selected observation wells in the upper Santa Ana Valley. In this table, water levels at the beginning of March 1954 are compared to the March 1 levels of 1953 and to those of the low-water year 1936. The data are tabulated separately in three groups: Bunker Hill Basin, Rialto-Colton Basin, and upper Lytle Basin. Within Bunker Hill Basin water levels in 8 index wells show an unweighted average net decline of 9.3 feet from March 1, 1953, to March 1, 1954, and a net drop of 20.5 feet since 1936, based on records for only 6 wells.

Summary of water-level fluctuations in selected observation wells in upper Santa Ana Valley

Well	Water level in feet above (+) or below land-surface datum a/			Net rise (+) or decline (-) in water level, in feet	
	March 1936	March 1953	March 1954	1936-54	1953-54
Bunker Hill Basin					
1N/4-32N1	.....	122.8	131.0	.....	-8.2
1S/3-17C1	55.7	61.7	76.0	-20.3	-14.3
23A2	265.0	285.0	287.4	-22.4	-2.4
32D1	97.0	107.1	118.0	-21.0	-10.9
1S/4-1A6	+1.0	15.0	28.8	-29.8	-13.8
15A1	+42.0	+28.5	+17.5	-24.5	-11.0
15M2	3.8	5.0	9.0	-5.2	-4.0
21A1	.....	+6.0	4.0	.....	-10.0
		Unweighted average net decline		-9.3	
Upper Lytle Basin					
1N/5-23P4	140.1	93.0	147.0	-6.9	-54.0
Rialto-Colton Basin					
1S/4-29H2	58.0	32.0	45.0	+13.0	-13.0
1S/5-2K1	270.3	262.0	267.0	+3.3	-5.0
Chino Basin					
1S/5-22E1	255.5	254.2	257.0	-1.5	-2.8

a/ Chiefly interpolated.

San Jacinto Valley.--Measurements in the San Jacinto Valley by the Riverside County Flood Control and Conservation District and the California Division of Water Resources are tabulated for 3 wells. In the Perris area, the water level in well 4/3W-32E1 declined about 1 foot in 1954. As suggested by measurements on well 72 (Water-Supply Paper 468, p. 75) before 1920, levels in this area have declined about 41 feet since the seasonal low in 1905. However, the low water-level measurement in November 1954 in well 4/3W-32E1 was 3.6 feet less than the previous low level in April 1942. Net changes for 1954 in wells 5/2W-27E2 and 6/3W-4A2 have not been computed because measurements were not made at the end of 1953.

Mojave River basin. --The observation-well program in the 3 subareas of the Mojave River basin was continued by the San Bernardino County Flood Control District. Most of the wells are measured semiannually and a few more frequently. The tabulations of water-level measurements in the Mojave River basin are here separated into 3 subareas. Of the 67 wells reported for 1953, 61 are continued for 1954, as follows: 17 in the upper basin, 20 in the middle basin, and 24 in the lower basin. Wells 5/3W-18F1 in the upper basin, wells 9/1W-10M1,-13B1, and 9/3W-28A1 in the middle basin, and well 8/4E-7E1 in the lower basin were not measured in 1954. Measurements were discontinued in 8 wells, which had gone dry.

Wells in Mojave River basin, San Bernardino County, Calif. for which measurements have been discontinued

8/3W-4M1	9/3W-34R1	8/3E-3F1
9/3W-10P1	11/3W-28R1	9/3E-3D1

The rainfall in the drainage area of the Mojave River in 1954 was nearly average; therefore recharge to ground water probably was about normal. Although there was somewhat greater recharge than in 1952 and 1953, the November 1954 levels in most observation wells were lower than the November 1953 levels (because of continued large withdrawals), but the declines for 1953-54 were considerably less than those for 1952-53. However, in the upper basin the levels in 10 of the 17 wells reported were the lowest of record; in the middle basin the levels in 10 of the 20 wells reported were the lowest of record; and in the lower basin the levels in 14 of the 24 wells reported were the lowest of record.

The following table summarizes the net change in water levels in 43 observation wells in Mojave River basin for which November 1953 and November 1954 measurements are available. The data are tabulated separately for the upper, middle, and lower basins.

Summary of water-level fluctuations in observation wells in Mojave River basin, San Bernardino County, Calif.

Well	Net rise (+) or decline (-) in water level, in feet [a]	Well	Net rise (+) or decline (-) in water level, in feet [a]
	Wells in the Upper Basin		
3/3W- 6E2	+10.87	5/3W- 3D1	-0.20
3/4W-13B2	-13.80	13D1	-3.70
4/3W- 1M1	+.07	22A1	-4.00
6B1	+1.22	5/4W-10M1	b-18.82
6D1	-4.03	11P1	-2.40
18E1	+1.15	11P2	+3.57
19R1	+2.00		
		Unweighted average net decline	-0.77
	Wells in the Middle Basin		
7/4W-30C1	+0.80	9/3W-10R1	-0.99
8/4W-12Q1	-.14	14D1	+1.25
20N1	+1.30	10/1W-31C1	-.10
31D1	-1.00	10/2W-19P1	+6.20
31R1	-1.25	10/3W-32C1	-1.10
9/1W-10D2	-1.80	11/3W-34F1	-1.10
9/2W-19B1	-2.70		
		Unweighted average net decline	-0.05
	Wells in the Lower Basin		
8/3E-3E1	+1.38	9/3E-12E1	-1.33
4B1	+1.05	19E1	-.41
9/1E-12D1	-1.94	19P1	-.87
13E1	+5.25	32A1	-1.80
13E2	b+11.70	34D1	+2.50
20N1	-6.00	9/4E-20L1	+.70
9/2E-4D1	-1.65	31K1	+.03
14N2	-2.00	10/2E-32P1	-.80
14N3	-1.65		
		Unweighted average net decline	-0.47

a/ For period from November 1953 to November 1954.
b/ Excluded from average.

Because the measurements are not necessarily made at the same time each year, the pumping draft and period of pumping in the three basins change from year to year, and the areal distribution of the observation wells is not equal, the average net declines are unweighted and may not be representative of the average areal net declines in the three basins.

Antelope Valley.--During 1954 the observation-well program in Antelope Valley was field checked and revised. Accordingly, numerous changes in the data for individual wells are included in this report. In addition, 28 candidate wells, in the central and northern parts of the valley, were selected. Measurements for several of these will be published in future years together with measurements in a reduced number of selected representative wells throughout the valley. Of the 60 wells reported for 1953, only 46 are included in this report for 1954. Measurements were discontinued in 7 wells that either were too close to other observation wells, penetrated semiperched water bodies in the central valley area and therefore were not representative of the principal body, or were dry. No measurements were made in 1954 in 7 wells regularly reported. These are: 5/10-7E1, 7/13-35E1, 8/13-32N1, 8/14-2R1, 8/15-27R1, 8/16-14L1, and 9/13-20H1. Measurements were discontinued in 1954 in wells 6/9-31R1, 6/10-20P1, 7/10-21A1, 7/11-24C1, 8/10-8R3, 8/10-9P1, 8/10-32N1, and 9/12-16P2.

The following table summarizes water-level fluctuations in 39 selected observation wells in Antelope Valley for which measurements are available for November-December 1953 and November-December 1954. The data are tabulated separately for Lancaster, Buttes, Rock Creek, and Neenach Basins. The table shows that the unweighted average net declines for the year were 5.2 feet for 25 wells in Lancaster Basin, 1.1 feet for 4 wells in Buttes Basin, 5.1 feet for 6 wells in Rock Creek Basin, and 2.3 feet for 4 wells in Neenach Basin. For the entire Antelope Valley, the unweighted average net decline in 39 wells was about 4.5 feet. Only 6 of the 42 levels compared show net rises. Thus, the 1954 levels in Antelope Valley continued the downward trend that has been in progress since before 1920.

Summary of water-level fluctuations in observation wells in Antelope Valley in Los Angeles and Kern Counties

Well	Net rise (+) or decline (-) in water level, in feet [a]	Well	Net rise (+) or decline (-) in water level, in feet [a]
	Lancaster Basin		
6/10-9E1	-3	7/13-11D1	-0.04
27C1	-3.67	17D1	-3.1
6/11-4C1	-7.80	21J2	-10.8
12M1	-17.9	27M1	-2.5
12Q1	-1.6	7/14-10F1	-5.0
6/12-24C1	+16.1	8/9-4N2	+2.0
6/13-12J1	-1.9	8/10-2P1	-2.7
7/9-17N1	-2.0	19Q1	b+31.4
7/10-21A1	-15.0	8/12-4K1	-3.15
7/11-28E1	-8.3	20B1	-6.16
7/12-15F1	-2.95	22M2	-.50
15F2	-11.15	8/13-7H1	-26.5
22R2	-1.10	8/14-14R1	-10.52
		Unweighted average net decline	-5.2
	Buttes Basin		
5/11-4E1	b+19.4	6/9-11N1	-0.50
6/8-18C1	-.7	6/10-9Q1	-1.70
6/9-4H2	-1.62		
		Unweighted average net decline	-1.1
	Rock Creek Basin		
5/9-20J1	-2.20	5/11-9Q1	+1.15
5/10-6N1	-9.77	10R1	-5.9
26B1	-4	12Q1	-10.0
		Unweighted average net decline	-5.1
	Neenach Basin		
8/15-33G1	-6.46	8/16-5N1	-1.95
36M1	+.13	9/15-25D1	-.95
		Unweighted average net decline	-2.3

[a] For period from November-December 1953 to November-December 1954.
[b] Excluded from averages.

Santa Barbara County. --The investigation of the ground-water resources of Santa Barbara County was continued during 1954 in cooperation with the Santa Barbara County Water Agency. Water-level measurements were made in 181 wells; 6 of which were equipped with recording gages. Figures 26-32 show location of the observation wells. Measurements made by the city of Santa Maria and the Santa Maria Valley Water Conservation District in 1954 are included in this report. Measurements covering the period 1941 through 1953 have been published annually in water-supply papers. Water-Supply Paper 1068 contains tabulated descriptions for 2,246 wells in 1942 in the various ground-water basins and many water-level measurements made before 1942 by the city of Santa Barbara, Santa Maria Valley Water Conservation District, San Joaquin Power Division of the Pacific Gas and Electric Co., Union Sugar Co., Union Oil Co., and other organizations and individuals.

Comprehensive reports on the geology and ground-water resources of the Santa Ynez River basin, the south-coast basins, the Santa Maria Valley area, and the Cuyama Valley have been published as Water-Supply Papers 1107, 1108, 1000, and 1110-B, respectively. In October 1952, reports on stream runoff and ground-water storage capacity were released to the open files.

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

The south-coast communities have united to solve their local water problem by building Cachuma Dam and a distribution system for the conservation of floodwaters of the Santa Ynez River. The dam was completed in 1953, but work is still in progress on the tunnel and parts of the coastal distribution systems. The considerable quantity of hot water that was found when the tunnel was drilled was distributed to the south-coast communities in 1954 to supplement their water supplies. The water users of the Santa Maria Valley are considering a plan for the construction of Vaquero Dam on the Cuyama River. Regulated releases of floodwaters impounded by this reservoir will be used to recharge the ground-water reservoir that lies beneath the Santa Maria plain.

Figures 33 and 34 show precipitation at 3 stations, water-level fluctuations in 10 wells, and a curve of the accumulated departure of rainfall from normal at Santa Maria. These graphs illustrate the relation of ground-water level to precipitation. During "wet" years water levels rise, indicatiug ground-water replenishment. The decline of water levels generally coincides with periods of below-normal rainfall, indicating a depletion of ground-water storage.

Beginning about 1945, water levels throughout Santa Barbara County declined steadily as a result of increased use and below-average precipitation. Ground-water depletions during the years 1945-51 were greater in some basins than in others, according to the magnitude of the unbalance between withdrawals and replenishment. In the winter of 1951-52, above-average precipitation wholly replenished or nearly replenished those basins in which overdraft was small; whereas in the basins of large overdraft, only a small part of the depleted storage was restored. As the result of below-average precipitation and streamflow in 1953 and 1954, water levels, in general, in Santa Barbara County have resumed the downward trend that prevailed during 1945-51. The following discussion of water-level fluctuations is by ground-water basins, each a separate hydrologic unit.

Water levels in the Carpinteria Basin (fig. 26) recovered in 1954. Of the 18 wells under observation, only 3 showed a year-end decline; the average decline in these 3 wells was 2.9 feet. The greatest year-end water-level recoveries were observed in wells aloug the base of the foothills (the recharge area) where they ranged from 0.47 foot to as much as 16.84 feet. The average recovery in the recharge area was 5.5 feet. South of the recharge area, in the area of confined water, the recoveries were not so great, averaging about 4.5 feet, the maximum being 8.63 feet. In most wells the highest water levels in 1954 occurred in May, about a month later than usual, because the start of the irrigation season was delayed by substantial late winter rains. As a result of the late peak levels, the declines during the 1954 pumping season were not so great as in other years of below-average rainfall. The year-end recoveries, after cessation of pumping, reached the approximate year-end levels of 1948, but were still, on the average, 30.0 feet below those of 1942. The hydrograph of well 4/25-27Q2 (fig. 34) is representative of water-level fluctuations in the area of confined water. Analyses of water samples from 8 wells showed an average chloride content of 110 ppm (parts per million), which is a decrease of 46 ppm from the average for 1953. The highest chloride content was still at the western end of the basin, where the average concentration was 160 ppm.

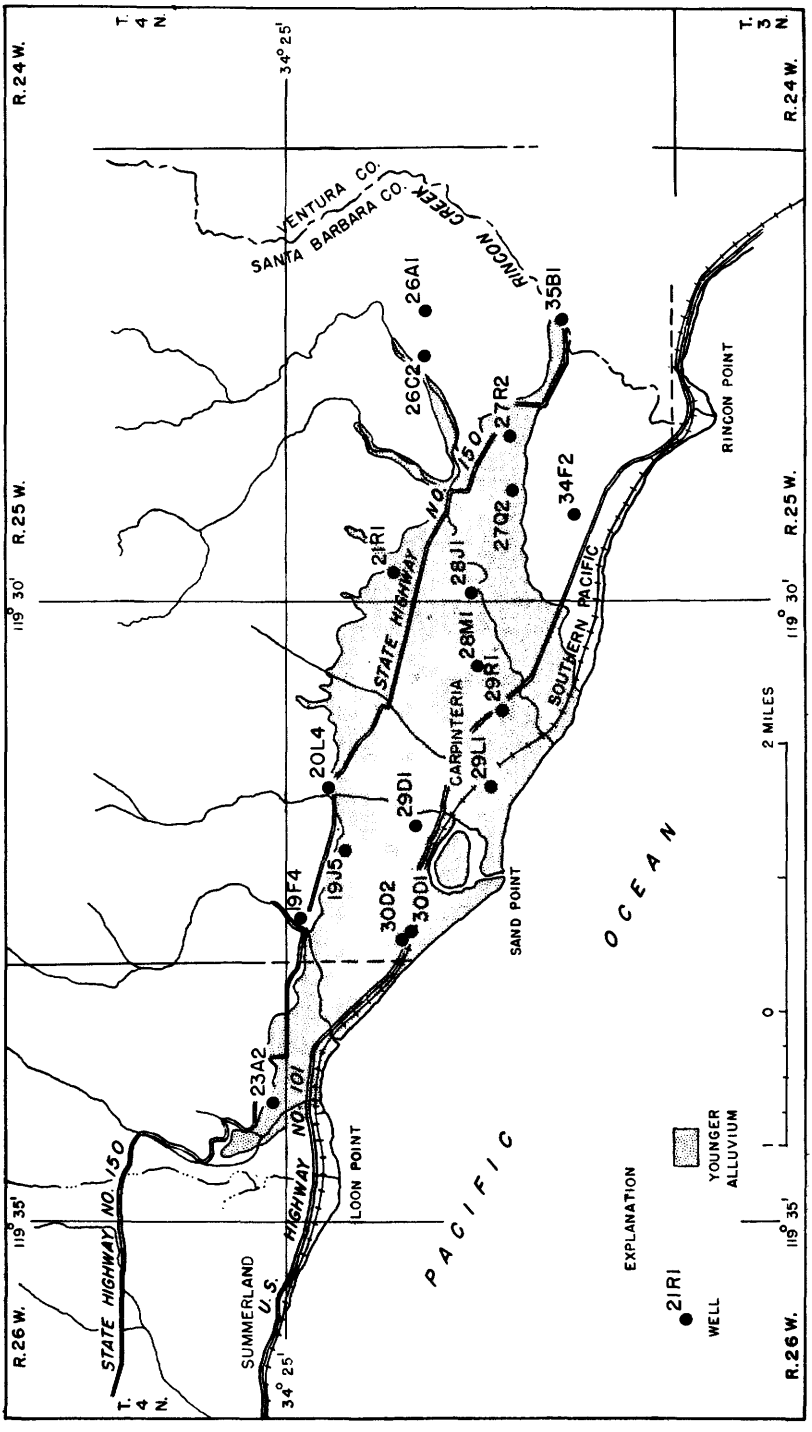


Figure 26.--Location of observation wells in Carpinteria Basin, Santa Barbara County, Calif., 1954.

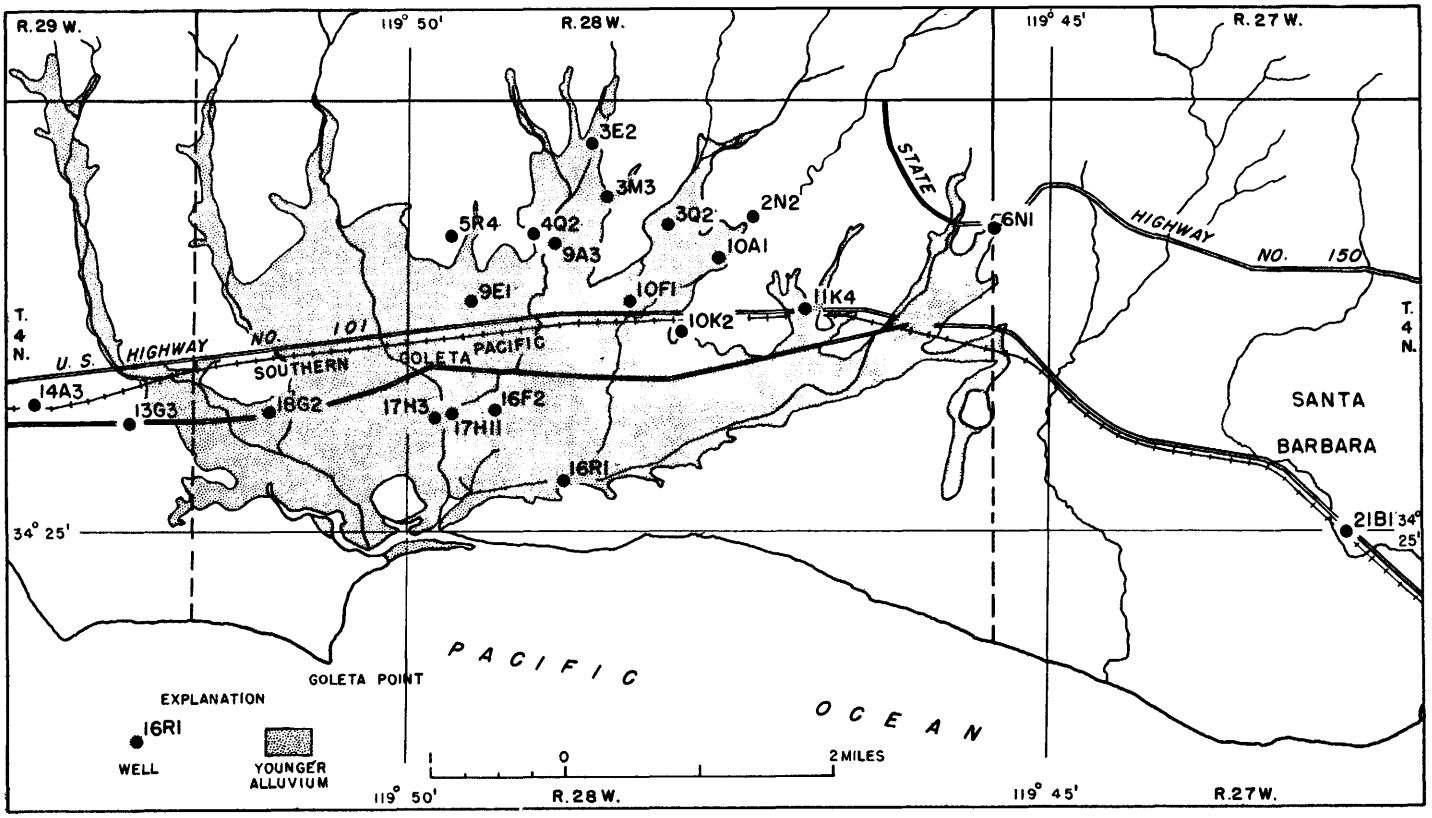


Figure 27.--Location of observation wells in Goleta Basin, Santa Barbara County, Calif., 1954.

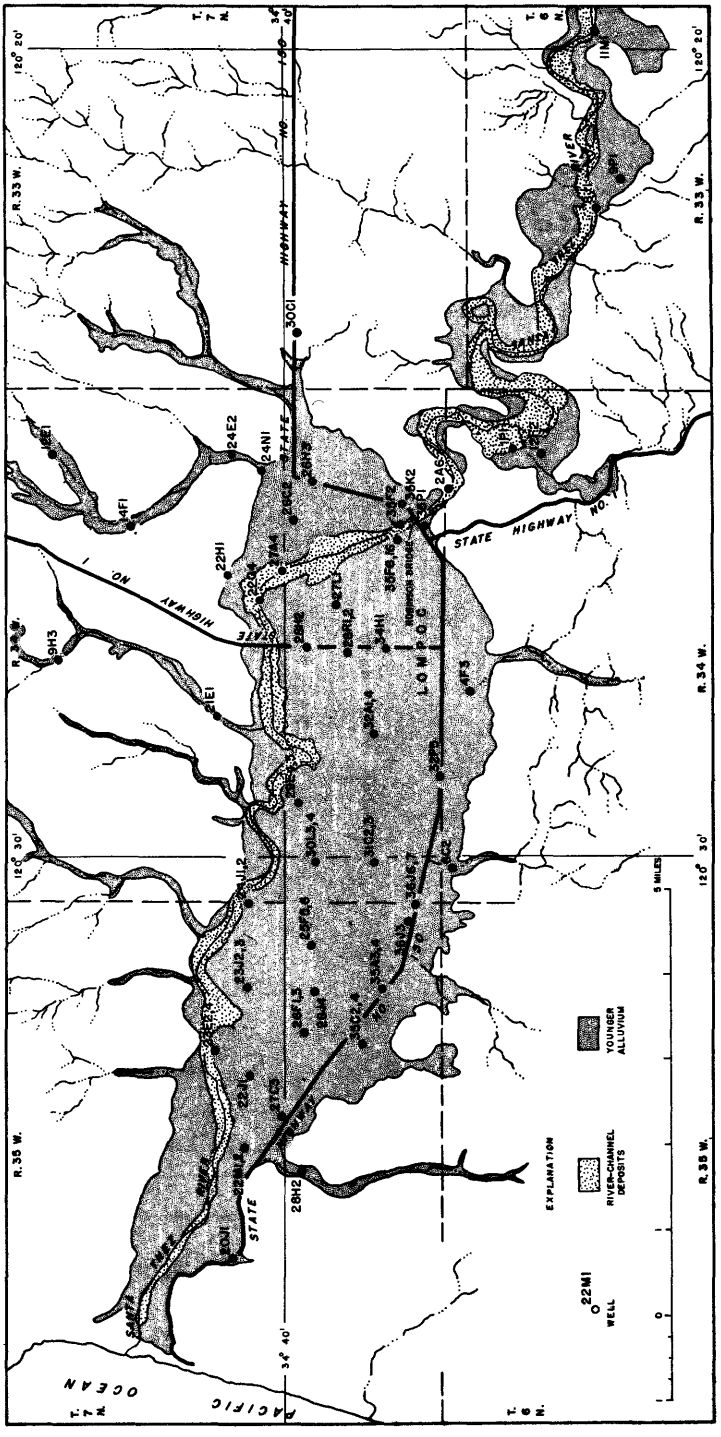


Figure 28.--Location of observation wells in Lompoc Plain, Santa Barbara County, Calif., 1954.

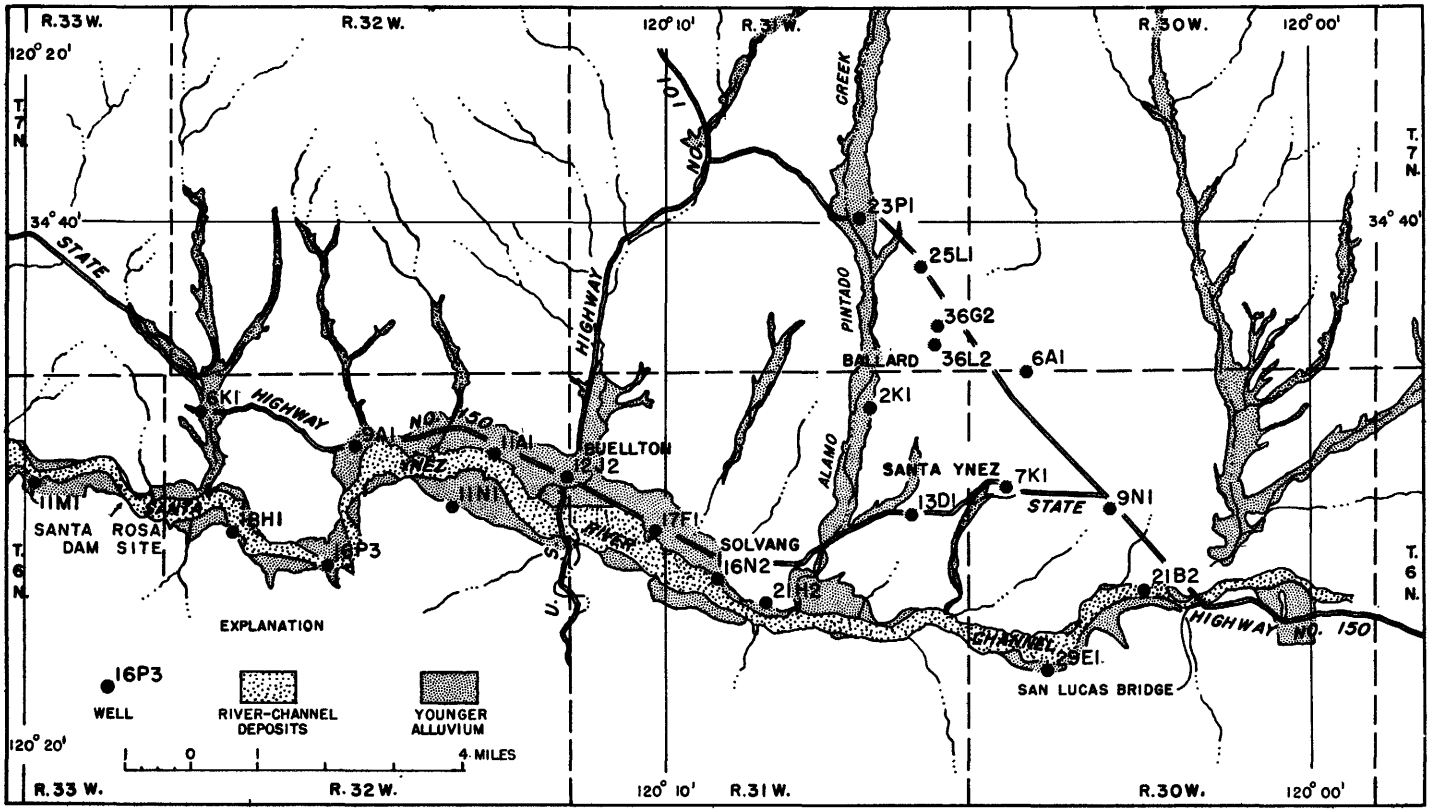


Figure 29.--Location of observation wells in Santa Ynez River valley, Santa Barbara County, Calif., 1954.

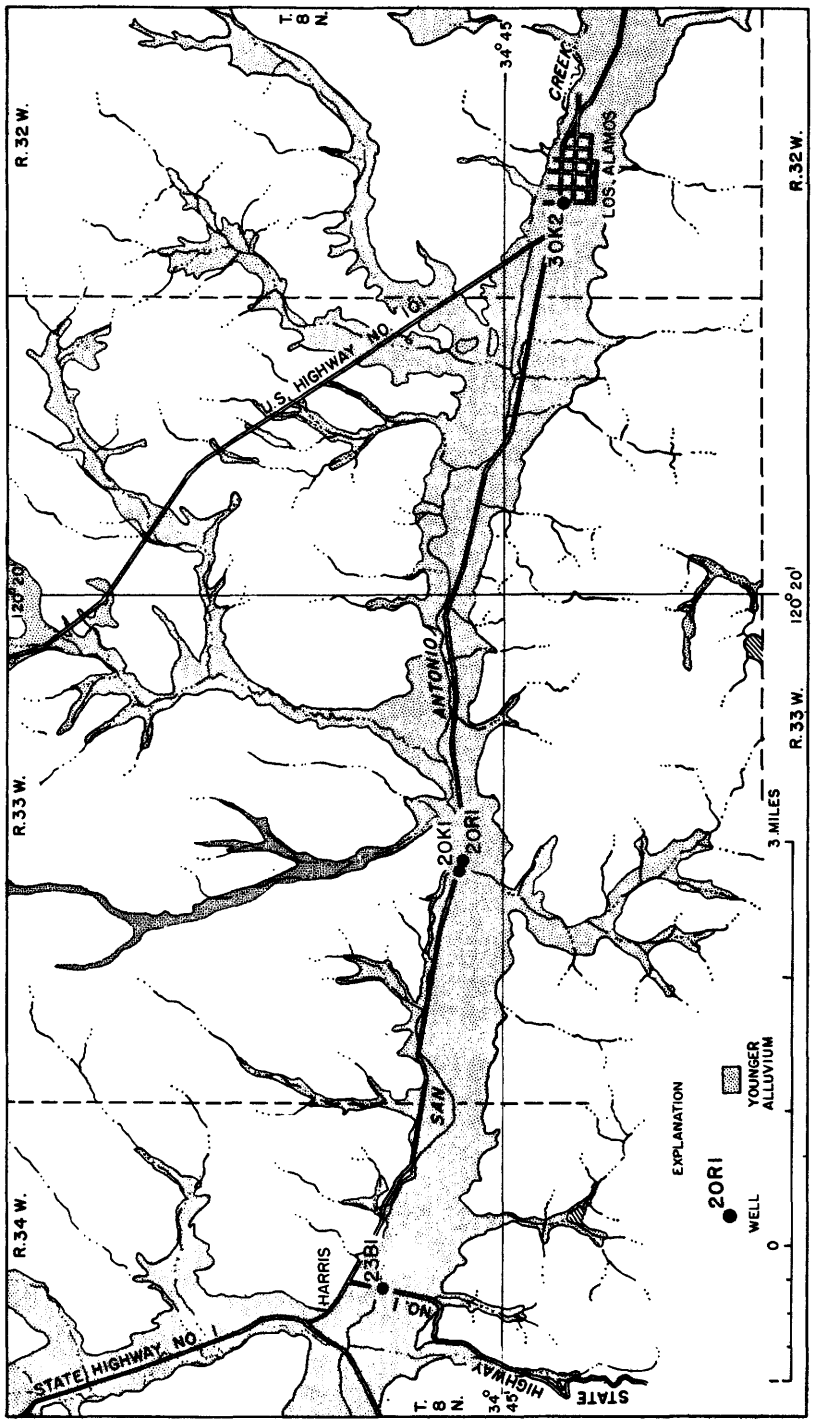


Figure 30.--Location of observation wells in San Antonio Valley, Santa Barbara County, Calif., 1954.

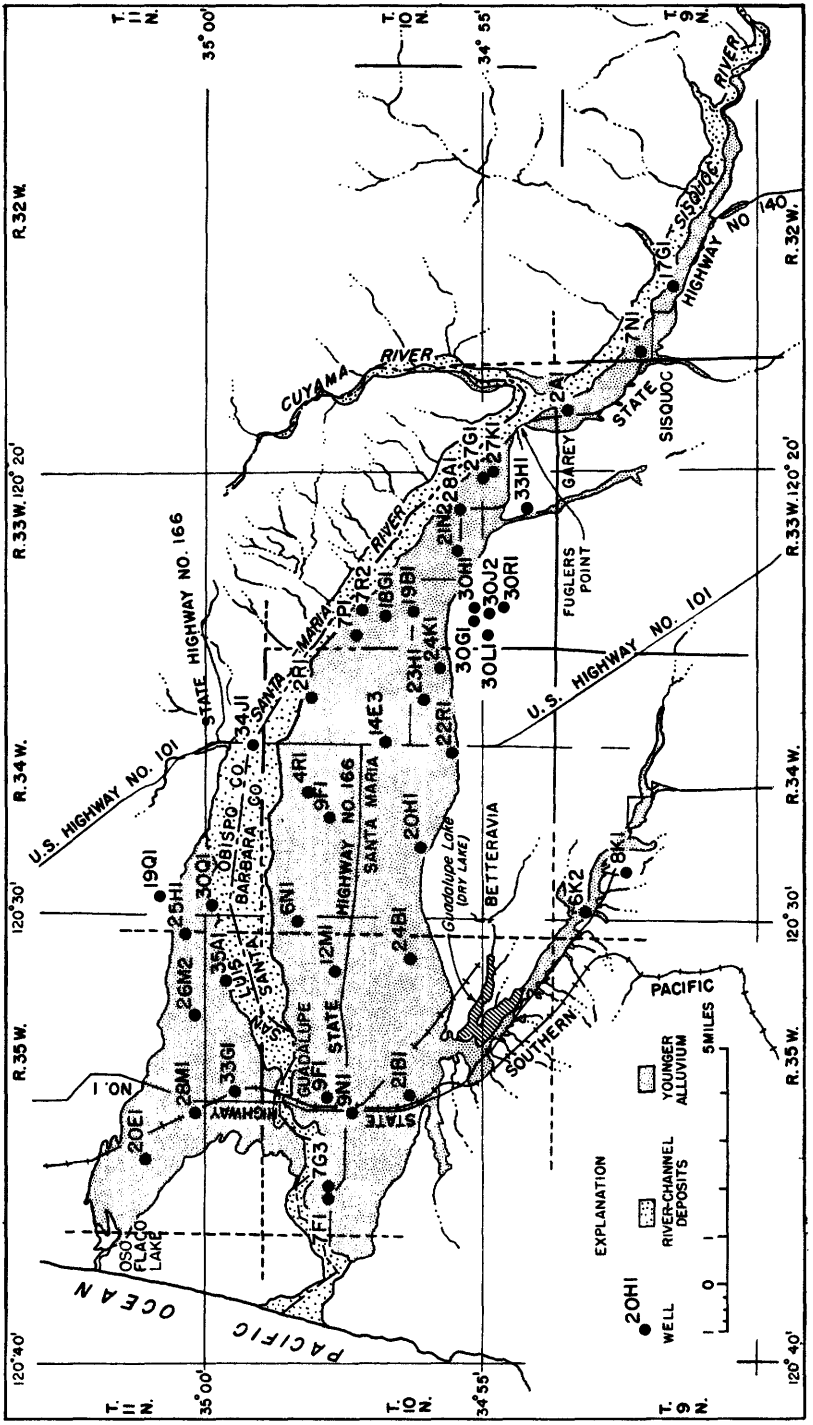


Figure 31.--Location of observation wells in Santa Maria Valley, Santa Barbara County, Calif., 1954.

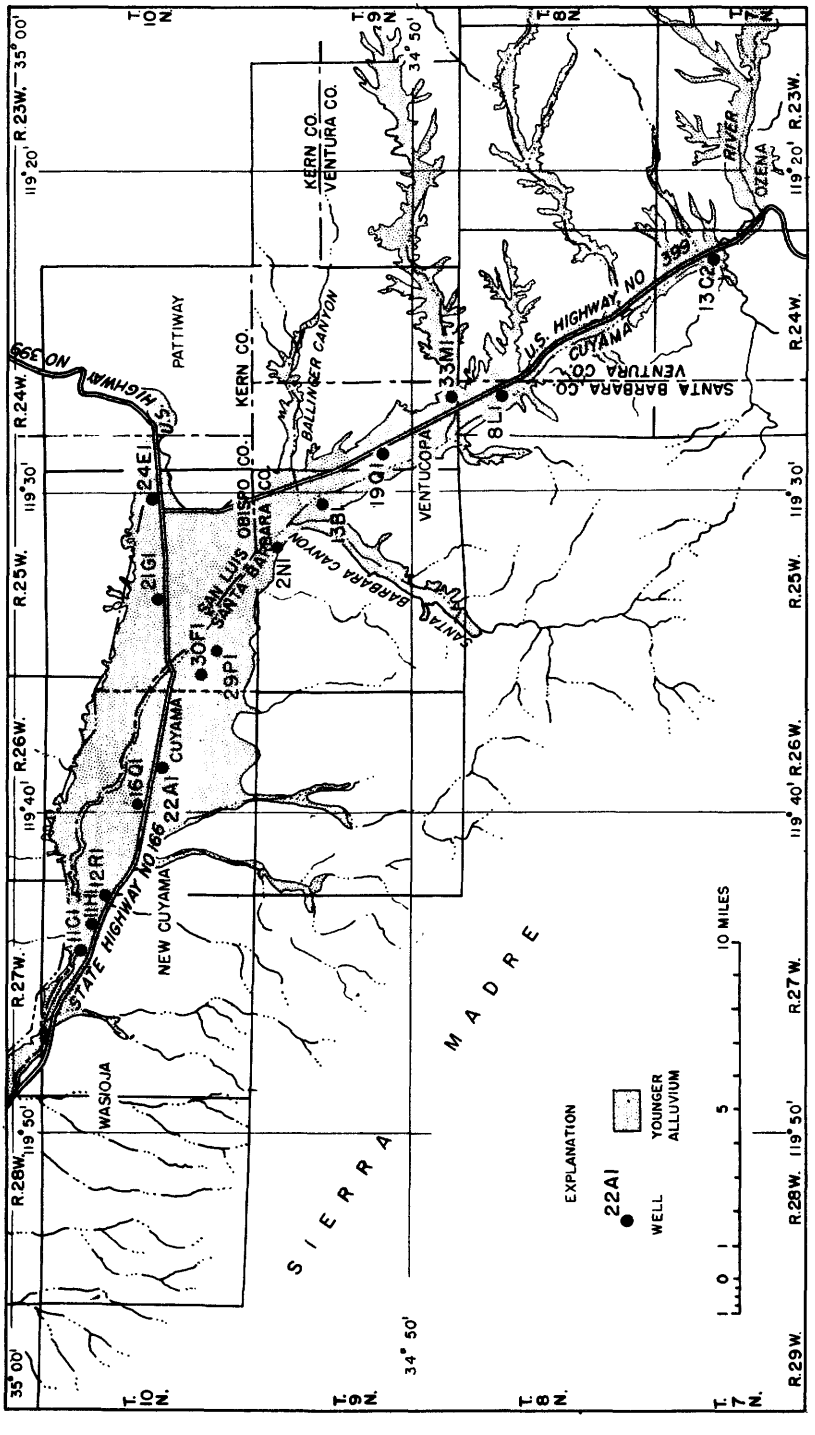


Figure 32.--Location of observation wells in Cuyama Valley, Santa Barbara County, Calif., 1954.

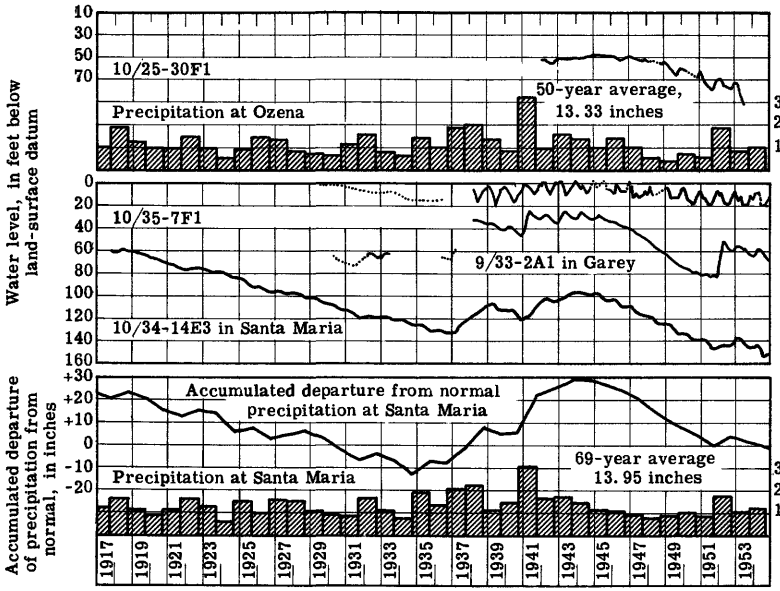


Figure 33. --Water-level fluctuations in 4 wells in Santa Barbara County and precipitation by water years at Santa Maria and Ozena, Calif.

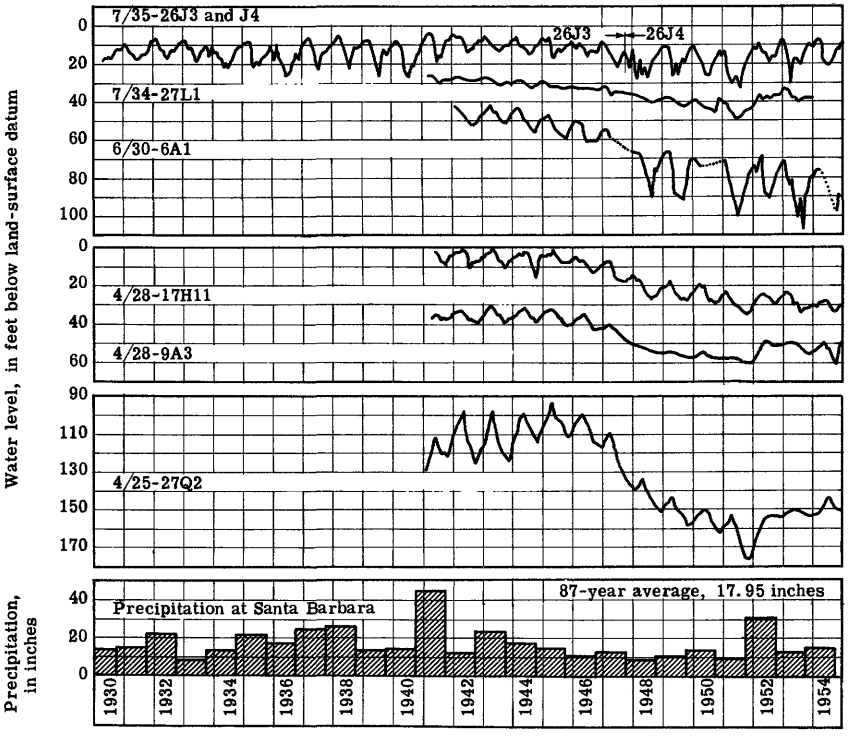


Figure 34. --Water-level fluctuations in 6 wells in Santa Barbara County and precipitation by water years at Santa Barbara, Calif.

Water levels in the Goleta Basin (fig. 27) recovered in 1954, even though precipitation was below average. In the confined-water area that underlies nearly all the central alluvial plain, the year-end water levels ranged from 0.64 foot below to 8.92 feet above year-end levels of 1953, the average change being a rise of 7.4 feet. Although water levels in the Goleta Basin did recover in 1954, they were still about 14 feet lower than the year-end average for 1942. The hydrographs of wells 4/28-17H11 and 4/28-9A3 (fig. 34) show water-level fluctuations in the area of confined water and area of recharge, respectively. Periodic sampling in selected wells along the coast revealed no increase in chloride concentration. Chloride concentrations during 1954 ranged between 53 and 850 ppm, the average being about 225 ppm.

The Santa Ynez River valley has several distinct hydrologic units. Figure 28 shows the Lompoc Plain and a short stretch of the alluvial deposits adjacent to the river upstream from Robinson Bridge. Figure 29 shows the remainder of the alluvial deposits upstream to San Lucas Bridge and also the Santa Ynez upland. In general, the ground-water storage of the Lompoc Plain and the alluvial deposits adjacent to the river were restored to near capacity by above-average rains during the winter of 1951-52. During 1953 and 1954, years of below-average precipitation, ground-water withdrawals exceeded recharge and the downward trend of 1945-51 was resumed. The decline in water levels in wells on the Santa Ynez upland in 1954 average 5.5 feet, the smallest declines being toward the southern end of the upland and the greatest declines being in the central part. The hydrograph of well 6/30-6A1 (fig. 34) which is representative of water levels throughout the upland showed a decline of 8.0 feet. Water levels in December 1954 were, on the average, about 24 feet below the levels of December 1942. Water levels in wells near the river between San Lucas Bridge and Robinson Bridge were only slightly below those recorded in December 1942. From December 1953 to December 1954 the average water-level decline was 0.5 foot.

Year-end water levels on the Lompoc Plain ranged from 2.13 feet above year-end levels of 1953. Water levels in the recharge area at the east and along the southern fringe of the Lompoc Plain showed an average year-end decline of only 0.05 foot. In this area, water levels at the end of 1954 were only 5 feet lower than at the end of 1944, the close of a wet period. In the area of confined water, water levels recovered an average of 0.2 foot. The hydrographs of wells 7/35-26J3, -26J4, and 7/34-27L1 (fig. 34) show water-level fluctuations in the area of confined water and area of recharge, respectively. Analyses of water samples from 22 wells showed an average chloride concentration of 311 ppm. In 1941, water analyses of 18 wells on the Lompoc Plain revealed an average chloride concentration of 336 ppm. This suggests that, in general, the chloride concentration of water contained in the main water-bearing zone has not changed appreciably during the past 13 years. Water samples collected near the mouth of Pine Canyon, however, suggest an increase of chloride in that area.

Water levels in 4 observation wells in the San Antonio Valley (fig. 30) showed a decline ranging between 0.61 foot and 4.98 feet from December 1953 to December 1954; the decline averaged 2.8 feet. At the eastern end of the valley in the vicinity of the town of Los Alamos, increased pumping for irrigation during the summer caused sharp declines of water levels in domestic wells. Residents of the town report that during the height of the pumping season most shallow domestic wells either decrease in yield or the water level declines below the bottom of the pump column. Increased pumping for irrigation thus has created a local problem, in that the transmissibility of the aquifer is not sufficient to permit rapid replacement of the water withdrawn for summer use. In 1954, as in 1953, water level declined as much as 20 feet in contrast to the usual summer decline of 8 feet.

The Santa Maria Valley area (fig. 31) is the largest agricultural district in Santa Barbara County. It consists of the broad alluvial plain adjacent to the Santa Maria River, the elevated terrace areas to the north and south of this plain, and the smaller alluvial plain (Sisquoc area) adjacent to the Sisquoc River. In the confined-water area which underlies the western half of the Santa Maria plain, the average year-end recovery in 1954 was 1.8 feet. Average water levels in December 1954 in the area of confined water were about 23 feet below those of December 1942. The hydrograph of well 10/35-7F1 (fig. 33) is typical of the wells in the confined-water area. The water levels in the remainder of the plain (recharge area) showed a net decline of 3.2 feet from December 1953 to December 1954. Water levels in the recharge area were about 33 feet lower than those of December 1942. The hydrographs of wells 9/33-2A1 and 10/34-14E3 (fig. 34) are typical of the wells in the recharge area. In the area of the Sisquoc plain and along the Santa Maria River, water-level declines were slightly greater than for the recharge area in general. The average decline was 4.4 feet. The chloride content of well waters at the western end of the Santa Maria Valley remained essentially the same as in previous years, averaging less than 100 ppm. Water levels near the coast remained above sea level; consequently, there was no immediate threat of sea-water encroachment.

The Cuyama Valley (fig. 32) is a broad semiarid intermountain valley in the extreme northeastern part of Santa Barbara County. Before 1946 there was no electric power in the valley, and this tended to restrict intensive irrigation. Consequently, water levels in the principal agricultural area near the western end of the valley remained fairly static until heavy withdrawals began in 1946. A hydrograph for well 10/25-30F1 (fig. 33) shows the start of the decline in water level and its continuation in subsequent years due to increased irrigation demands and subnormal precipitation. The influence of subnormal precipitation in 1954, coupled with increased pumping, resulted in a lowering of the water table. The greatest effect was felt in the central section of the valley, where water levels in some wells declined as much as 5.1 feet in 1954; the average decline at year end for this area of the valley was 5.0 feet. The decline of water levels at the lower and upper ends of the valley was not so great as in the middle part, averaging 0.9 foot and 1.6 feet, respectively. Since 1946, when electric power was brought into the Cuyama Valley, water levels in observation wells have declined, on the average, about 18 feet.

Mokelumne River basin.--The East Bay Municipal Utility District continued the program of monthly measurements of water levels in selected observation wells in the Mokelumne area in the central part of the Great Valley. Records for 24 of these wells have been used as an index to changes in ground-water storage, and they have been published by the Geological Survey since 1935. Of the original 24 wells, 9 have been destroyed or abandoned because of lowering water table, but 9 nearby wells have been added so that, currently, records for 24 wells are being published.

The following table shows the average yearly water-level changes in the index wells and the fluctuations in yearly rainfall, beginning with 1950. The accumulated changes in this table begin with 1934, as tabulated in the report for 1945 and as shown in graphic form in the report for 1949. Rainfall at the 3 stations in 1954 was 93 percent of the 40-year average, an increase from that of 1953 which was 78 percent of average.

Average yearly rise or decline of water levels in observation wells, and yearly rainfall in the Mokelumne area, 1950-54

Year	Number of wells	Water level		Rainfall a/	
		Yearly rise (+) or decline (-) (feet)	Accumulated rise (+) or decline (-) (feet) b/	Excess (+) or deficiency (-) (inches)	Accumulated excess (+) or deficiency (-) (inches) b/
1950	24	+1.71	-4.45	+9.52	+6.80
1951	24	-.88	-5.33	+2.72	+9.52
1952	20	+1.11	-4.22	+7.17	+16.69
1953	18	-1.89	-6.11	-8.48	+8.21
1954	19	-2.44	-8.55	-2.86	+5.35

a/ Average of rainfall in the headwater area at Electra, West Point, and Twin Lakes, 1906-45. Average yearly rainfall at the 3 stations in this 40-year period was 38.74 inches.
b/ Accumulation dates from Jan. 1, 1934.

The following table shows the average change in water levels in 1954 during the periods of increasing and of diminishing withdrawals for irrigation, respectively. This table shows that the recharge early in 1954 was not sufficient to offset the withdrawals for irrigation, as indicated by the average decline of about 3.5 feet. During the last half of the year this decline continued so that the average net change for the year was a decline of 8.6 feet.

Seasonal changes in water level, in feet, in 19 observation wells in the Mokelumne area, 1954

Period	Greatest rise	Greatest recession	Average change
Jan. 1 to May 31 (increasing withdrawal for irrigation)	+3.37	-12.13	-3.51
June 1 to Dec. 31 (diminishing withdrawal)	+8.51	-5.12	+1.07
The year	-.10	-3.80	-8.55

Other Investigations by the Geological Survey

The cooperative investigation with the California Division of Water Resources, which began in 1948, is concerned chiefly with the surface and subsurface geologic features of the ground-water basins of the State. Reports are in preparation for several valleys north of San Francisco Bay. Field work was completed and reports written for a reconnaissance investigation of Scott, Shasta, and Butte Valleys in the Klamath River basin. Field work was completed and a report was prepared for a reconnaissance investigation of valleys along the Russian River and small valleys in the interior of Mendocino County.

For the San Joaquin Valley, a report, "Ground-water conditions in the Mendota-Huron area, Fresno and Kings Counties, Calif.," was released to the open file in August 1954 and distributed to local agencies. Also a reconnaissance report on ground-water conditions and ground-water storage capacity was completed in draft form, and a study of the utilization of ground-water storage capacity was begun. Periodic water-level measurements were continued on the west side of the San Joaquin Valley in Fresno and Kings Counties.

In Santa Barbara County, the inventory of ground-water supplies was continued in cooperation with the county. A report, "Water levels in observation wells in Santa Barbara County, Calif., in 1953," was released and distributed to local agencies.

In 1952 the Geological Survey, in cooperation with the California Division of Water Resources, began field work collecting basic water-well data in several southern California desert valleys. As a part of this program a basic data report on water wells in Borrego and nearby valleys was released to the public in December 1954.1/ Additional well-data reports were in preparation for Coyote, Cronise, Soda, and Silver Lake Valleys; for Superior, Cuddeback, Harper, and Fremont Valleys; and for Lucerne, Johnson, and Means Valleys. Semiannual water-level measurements in selected candidate observation wells in each valley are being made, and the records for several will be published in future years.

Well-Numbering System

The well-numbering system shows the location of wells according to the rectangular system of public-land surveys. Water-Supply Paper 991 contains a cross-reference table of previous numbers and location symbols. For well 9/13-20H1, in Antelope Valley in Kern County, the segment of the number before the hyphen indicates the township and range (T. 9 N., R. 13 W.). Letters indicating cardinal directions appear in this part of the symbol if a basin or area spans two or more quadrants of a particular base and meridian. The digits between the hyphen and the letter indicate the section (sec. 20), and the letter indicates the 40-acre tract within the section as shown by the diagram. Within the 40-acre tract, the wells are numbered serially as indicated by the final digit of the symbol. Thus, well 9/13-20H1 was the first well listed by the Geological Survey in the $SE\frac{1}{4}NE\frac{1}{4}$ sec. 20, township 9 north, range 13 west.

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

For a well located only approximately, the symbol is shortened to the designation of township, range, and section only. For areas which have never been subdivided by public-land surveys, the rectangular system has been projected, commonly after private surveys or after projections made by local officials for purposes of land assessment. The description and records are given by counties in alphabetical sequence and for each county by valleys or ground-water basins. Thus, each group of data pertains to a distinct ground-water area as indicated by subheadings in the report. Under each subhead, the records are presented in numerical order of the location symbols.

Well Descriptions and Water-Level Measurements

(Water levels are in feet below land-surface datum unless otherwise indicated.)

Kern County

Antelope Valley

9/13-20H1. Harry White. Near Willow Springs. Drilled irrigation well in alluvium, diameter 12 inches, depth 350 feet. Land-surface datum is about 2,430 feet above msl. Highest water level 36.0 below lsd, Apr. 29, 1922; lowest 125.8 below lsd, Mar. 11, 1953. Records available: 1921-53. No measurement made in 1954.

1/ Burnham, W. L., Data on water wells in Borrego, Ocotillo, San Felipe, and Vallecito Valley areas, eastern San Diego County, Calif., 60 p.

9/15-25D1. H. W. Hunter. Near Fairmont. Drilled unused well in alluvium, diameter 8 inches, depth 278 feet. Land-surface datum is about 2,710 feet above msl. Highest water level 223.7 below lsd, Mar. 9, 1949; lowest 232.7 below lsd, Mar. 25, 1954. Records available: 1948-54. Records furnished by California Division of Water Resources. Mar. 25, 232.7; Nov. 12, 231.85.

Los Angeles County

Antelope Valley
[Measurements furnished by Los Angeles County Flood Control District are marked with an asterisk]

*5/9-6B1. H. W. Setterlund. Near Little Rock. Drilled irrigation well in alluvium, diameter 12 inches, reported depth 98 feet. Land-surface datum is about 2,846 feet above msl. Highest water level 25.1 below lsd, July 29, 1944; lowest 63 below lsd, July 20, 1954. Records available: 1940-54. Jan. 12, 57.3; Feb. 9, 54.85; Mar. 9, 58.20; Apr. 6, 59.55; May 4, 60.70; June 15, 61.50; July 20, 63.

*5/9-20J1. J. N. Petino. Formerly L. M. Nixon. Llano. Drilled unused well in alluvium, diameter 10 inches, depth 274 feet. Land-surface datum is about 3,166 feet above msl. Highest water level 235.8 below lsd, Nov. 4, 1947; lowest 266.1 below lsd, Nov. 8, 1954. Records available: 1942-43, 1945, 1947-49, 1952-54. Nov. 8, 266.1.

*5/10-6N1. Little Rock Irrigation District. Near Little Rock. Drilled unused well in alluvium, diameter 14 inches. Land-surface datum is about 2,777 feet above msl. Highest water level 85.0 below lsd, Mar. 2, 1945; lowest 131.50 below lsd, Aug. 17, 1954. Records available: 1938, 1940-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	117.60	Apr. 1	121.97	July 20	130.55	Oct. 13	130.50
Feb. 9	117.54	May 4	126.10	Aug. 17	131.50	Nov. 8	126.97
Mar. 4	121.00	June 15	128.35	Sept. 14	130.95	Dec. 7	122.90

5/10-7E1. Calavalley. Near Little Rock. Drilled unused irrigation well in alluvium, diameter 16 inches, reported depth 550 feet. Land-surface datum is about 2,815 feet above msl. Highest water level 116.2 below lsd, Mar. 28, 1945; lowest 175.2 below lsd, Aug. 4, 1953. Records available: 1938, 1940-53. No measurement made in 1954.

*5/10-26B1. C. Kromb. Formerly R. J. Darling. Near Little Rock. Drilled domestic well in alluvium, diameter 10 inches, reported depth 87 feet. Land-surface datum is about 3,156 feet above msl. Highest water level 41.69 below lsd, Nov. 24, 1952; lowest 57.49 below lsd, Nov. 5, 1951. Records available: 1940-42, 1945-54. Nov. 8, 55.

*5/11-4E1. Sam Yellen. Near Palmdale. Drilled irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 2,695 feet above msl. Highest water level 149.4 below lsd, Dec. 14, 1948; lowest 172.85 below lsd, Nov. 27, 1953. Records available: 1948-54. Nov. 8, 153.45.

*5/11-9Q1. Owner unknown. Near Little Rock. Drilled unused well in alluvium, diameter 10 inches, depth 99 feet. Land-surface datum is about 2,856 feet above msl. Highest water level 29.4 below lsd, Mar. 7, 1945; lowest 54.8 below lsd, Nov. 17, 1952. Records available: 1940-46, 1948-54. Nov. 8, 53.45.

*5/11-10R1. H. C. Smith. Near Bridge over Little Rock Creek. Drilled unused well in alluvium, diameter 16 inches. Land-surface datum is about 2,835 feet above msl. Highest water level 41.8 below lsd, July 18, 1941; lowest 144.5 below lsd, Aug. 13, 1938. Records available: 1927-28, 1930, 1932, 1937-54.

Jan. 12	112.05	Apr. 1	112.48	July 20	113.25	Oct. 13	117.60
Feb. 10	112.15	May 4	114.90	Aug. 19	113.70	Nov. 8	117.60
Mar. 4	112.30	June 15	113.35	Sept. 14	115.40	Dec. 7	116.90

*5/11-12Q1. Wheelock. Near Little Rock. Drilled irrigation well in alluvium, diameter 16 inches, reported depth 392 feet. Land-surface datum is about 2,832 feet above msl. Highest water level 122.2 below lsd, Mar. 2, 1945; lowest 176.4 below lsd, Nov. 8, 1954. Records available: 1940-54. Nov. 8, 176.4.

*6/8-18C1. Rouff. Formerly Hoff. Near Lovejoy Buttes. Drilled domestic and stock well in alluvium, diameter 9 inches, reported depth 210 feet. Land-surface datum is about 2,732 feet above msl. Highest water level 128.55 below lsd, Dec. 7, 1945; lowest 169.6 below lsd, July 5, 1945. Records available: 1939-41, 1944-54. Nov. 8, 163.

*6/9-4H2. Wilsona School. Near Lovejoy Buttes. Drilled well in alluvium, diameter 10 inches, reported depth 336 feet. Land-surface datum is about 2,594 feet above msl. Highest water level 120.56 below lsd, Nov. 23, 1949; lowest 130.07 below lsd, Nov. 8, 1954. Records available: 1949-54. Nov. 8, 130.07.

*6/9-11N1. Owner unknown. Near Lovejoy Buttes. Drilled unused well in alluvium, diameter 8 inches. Land-surface datum is about 2,666 feet above msl. Highest water level 137.28 below lsd, Dec. 27, 1951; lowest 142.32 below lsd, Apr. 6, 1954. Records available: 1951-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 12	139.5	Apr. 6	142.32	July 20	140.00	Oct. 13	140.25
Feb. 9	139.5	May 4	139.90	Aug. 17	140.10	Nov. 18	140.55
Mar. 9	139.65	June 15	139.90	Sept. 14	140.15	Dec. 7	140.25

*6/9-31R1. Barlow. Near Big Rock Creek. Drilled unused well in alluvium, diameter 16 inches, depth 46 feet. Land-surface datum is about 2,833 feet above msl. Highest water level 9.8 below lsd, May 15, 1944; lowest 45.81 below lsd, Nov. 5, 1951. Records available: 1940-54. Aug. 24, dry at 44.5. Measurement discontinued.

*6/10-9E1. C. Weist. Near Alpine Butte. Drilled irrigation well in alluvium, diameter 14 inches. Land-surface datum is about 2,576 feet above msl. Highest water level 125.4 below lsd, Dec. 2, 1941; lowest 201.1 below lsd, Dec. 3, 1953. Records available: 1940-43, 1945-46, 1948-54. Nov. 10, 198, casing wet.

*6/10-9Q1. Henry Winters. Formerly Rhodes-Cogburn. Near Alpine Butte. Drilled irrigation and domestic well in alluvium, diameter 16 inches, reported depth 275 feet. Land-surface datum is about 2,596 feet above msl. Highest water level 142.1 below lsd, Dec. 2, 1941; lowest 156.75 below lsd, Nov. 10, 1954. Records available: 1940-48, 1950-54. Nov. 10, 156.75.

6/10-20P1. Mrs. Johnson. Near Little Rock. Drilled unused well in alluvium, diameter 10 inches. Land-surface datum is about 2,637 feet above msl. Highest water level 135.0 below lsd, Mar. 10, 1945; lowest 218.68 below lsd, Sept. 30, 1952. Records available: 1940-53. Measurement discontinued.

*6/10-27C1. Formerly 6/10-27B1. McCaleb. Near Little Rock. Drilled unused well in alluvium, diameter 16 inches, reported depth 400 feet. Land-surface datum is about 2,677 feet above msl. Highest water level 148.1 below lsd, Dec. 15, 1943; lowest 161.97 below lsd, Nov. 8, 1954. Records available: 1940-41, 1943, 1944-54. Nov. 8, 161.97.

*6/11-4C1. U. S. Air Force. Formerly Lycon Bros. Northeast of Palmdale. Drilled unused well in alluvium, diameter 20 inches. Land-surface datum is about 2,480 feet above msl. Highest water level 147.0 below lsd, Dec. 5, 1942; lowest 228.9 below lsd, Nov. 16, 1954. Records available: 1942-43, 1945-46, 1948-49, 1951-54. Nov. 16, 228.9.

*6/11-12M1. J. W. Jenson. Formerly E. J. Ball. Near Little Rock Wash. Drilled unused well in alluvium, diameter 18 inches, reported depth 650 feet. Land-surface datum is about 2,540 feet above msl. Highest water level 171.1 below lsd, Nov. 25, 1941; lowest 256.5 below lsd, Nov. 10, 1954. Records available: 1941-43, 1945-54. Measurement discontinued.

Jan. 12	239.7	Apr. 1	241.17	July 20	244.6	Oct. 13	250.1
Feb. 10	240.35	May 6	241.95	Aug. 24	246.15	Nov. 10	256.5
Mar. 4	240.75	June 15	243.8				

*6/11-12Q1. E. J. Ball. Near Little Rock Wash. Drilled unused well in alluvium, diameter 18 inches. Land-surface datum is about 2,552 feet above msl. Highest water level 176.0 below lsd, Nov. 25, 1941; lowest 231.3 below lsd, Nov. 10, 1954. Records available: 1941-54. Nov. 10, 231.3.

*6/12-24C1. Palmdale Irrigation District. Near Palmdale. Drilled unused well in alluvium, diameter 14 inches, depth 327 feet. Land-surface datum is about 2,587 feet above msl. Highest water level 255.85 below lsd, June 4, 1952; lowest 298 below lsd, July 20, 1954. Records available: 1950-54.

Jan. 13	279	May 4	282.5	Aug. 7	289.5	Dec. 7	259
Feb. 9	273.52	July 20	298	Oct. 13	287.5	14	257.2
Mar. 9	276.25						

*6/13-12J1. Glick. Near Quartz Hill. Drilled stock well in alluvium, diameter 14 inches, reported depth 454 feet. Land-surface datum is about 2,607 feet above msl. Highest water level 233.7 below lsd, May 31, 1940; lowest 262.7 below lsd, Nov. 10, 1954. Records available: 1940-54. Nov. 10, 262.7.

*7/9-17N1. W. H. Brown. Formerly Ernest Koch. Near Piute Butte. Drilled irrigation well in alluvium, diameter 14 inches, reported depth 324 feet. Land-surface datum is about 2,492 feet above msl. Highest water level 127.83 below lsd, Feb. 5, 1946; lowest 188.6 below lsd, Nov. 9, 1954. Records available: 1945-48, 1950-54. Nov. 9, 188.6.

*7/10-21A1. Owner unknown. Near Alpine Butte. Drilled unused well in alluvium, diameter 12 inches. Land-surface datum is about 2,465 feet above msl. Highest water level 131.4 below lsd, Mar. 13, 1945; lowest 211.3 below lsd, Nov. 9, 1954. Records available: 1943-54. Nov. 9, 211.3. Measurement discontinued.

*7/11-24C1. T. D. Kyle. Formerly Stevenson. Northwest of Alpine Butte. Drilled unused well in alluvium, diameter 8 inches, reported depth 210 feet. Land-surface datum is about 2,433 feet above msl. Highest water level 72.6 below lsd, Apr. 8, 1932; lowest 188.92 below lsd, June 29, 1953. Records available: 1932-54. Jan. 12, 185.8; Feb. 8, 181.7; Mar. 9, 182.5; Apr. 6, 187.35. Measurement discontinued.

*7/11-28E1. Leshim. Formerly Alamo Ranch. Southeast of Lancaster. Drilled unused well in alluvium, diameter 12 inches, depth 450 feet. Land-surface datum is about 2,440 feet above msl. Highest water level 112.8 below lsd, Dec. 14, 1943; lowest 209.0 below lsd, Nov. 9, 1954. Records available: 1943, 1945-54. Nov. 9, 209.0.

*7/12-15F1. H. Rowell. Formerly A. H. Powell. Ninth and Elm Sts., Lancaster. Drilled domestic well in alluvium. Land-surface datum is about 2,348 feet above msl. Highest water level 26.7 below lsd, Oct. 28, 1942; lowest 102.1 below lsd, July 20, Aug. 17, 1954. Records available: 1942-54. Measurement discontinued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13	81.0	Apr. 6	78.50	July 20	102.1	Oct. 13	97.50
Feb. 9	78.25	May 4	92.90	Aug. 17	102.1	Nov. 9	91.50
Mar. 9	78.50	June 15	97.40	Sept. 14	100.45	Dec. 7	85.25

*7/12-15F2. Los Angeles County Water District well 4. 10th and Date Sts., Lancaster. Drilled public-supply well in alluvium, diameter 16 inches to 244 feet, 12 inches to 372 feet, reported depth 600 feet. Land-surface datum is about 2,354 feet above msl. Highest water level 42.9 below lsd, Feb. 28, 1945; lowest 98.6 below lsd, Nov. 15, 1954. Records available: 1943-45, 1947-54. Nov. 15, 98.6.

*7/12-22R2. Formerly 7/12-22J2. Schmitz Motel. Near Lancaster. Drilled public-supply well in alluvium, diameter 8 inches, reported depth 390 feet. Land-surface datum is about 2,411 feet above msl. Highest water level 136.65 below lsd, Feb. 9, 1954; lowest 147.77 below lsd, Aug. 31, 1953. Records available: 1953-54. Measurement discontinued.

Jan. 13	140.2	Apr. 6	136.70	Aug. 17	147.5	Nov. 9	146.65
Feb. 9	136.65	June 15	145.3	Sept. 14	146.9	Dec. 7	143.35
Mar. 9	138.85	July 20	147.4				

*7/13-11D1. Pond. Northwest of Lancaster. Dug unused well in alluvium. Land-surface datum is about 2,356 feet above msl. Highest water level 2.0 below lsd, May 1, 1944; lowest 7.05 below lsd, Nov. 13, 1952. Records available: 1942-54. Nov. 15, 6.54. Measurement discontinued.

*7/13-17D1. G. Zaro. Formerly G. Faro. Near Lancaster. Drilled unused well in alluvium, diameter 12 inches, reported depth 450 feet. Land-surface datum is about 2,421 feet above msl. Highest water level 84.4 below lsd, May 8, 1939; lowest 155.5 below lsd, Nov. 15, 1954. Records available: 1937, 1939-45, 1947-48, 1950-54. Nov. 15, 155.5. Measurement discontinued.

*7/13-21J2. W. S. McCanlies. Formerly L. H. Benson. Near Quartz Hill. Drilled unused well in alluvium, diameter 10 inches, depth 182 feet. Land-surface datum is about 2,371 feet. Highest water level 59.0 below lsd, Feb. 28, 1945; lowest 139.4 below lsd, Nov. 15, 1954. Records available: 1942-45, 1947-54. Nov. 15, 139.4.

*7/13-27M1. Formerly 7/13-27N1. A. F. Godde. Near Quartz Hill. Drilled irrigation well in alluvium. Land-surface datum is about 2,421 feet above msl. Highest water level 116.8 below lsd, Nov. 24, 1941; lowest 212.3 below lsd, Nov. 15, 1954. Records available: 1941-43, 1945-54. Nov. 15, 212.3.

7/13-35E1. George Lane. Near Quartz Hill. Drilled irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 2,443 feet above msl. Highest water level 129.2 below lsd, Mar. 8, 1939; lowest 268.65 below lsd, Dec. 7, 1953. Records available: 1937-53. No measurement made in 1954.

*7/14-10F1. F. H. Ullman. Near Antelope Buttes. Drilled domestic well in alluvium, diameter 10 inches, reported depth 250 feet. Land-surface datum is about 2,557 feet above msl. Highest water level 184.2 below lsd, Nov. 7, 1942; lowest 228.3 below lsd, Nov. 15, 1954. Records available: 1942-43, 1945-54. Nov. 15, 228.3.

[Measurements furnished by California Division of Water Resources are marked with double asterisks]

**8/9-4N2. U. S. Air Force. South margin of Rogers Lake. Drilled unused well in alluvium, diameter 6 inches, reported depth 245 feet. Land-surface datum is about 2,293 feet above msl. Highest water level 12.2 below lsd, Dec. 6, 1941; lowest 21.10 below lsd, Nov. 24, 1953. Records available: 1941-54. Mar. 25, 18.5; Nov. 10, 19.1. Measurement discontinued.

*8/10-2P1. U. S. Air Force. Southwest of Rogers Lake. Dug pit and drilled unused well in alluvium, diameter 8 inches, depth 235 feet. Land-surface datum is about 2,310 feet above msl. Highest water level 4.8 below lsd, Apr. 24, 1941; lowest 34.9 below lsd, Nov. 10, 1954. Records available: 1941-54. Mar. 25, 31.40; Nov. 10, 34.9. Measurement discontinued.

8/10-8R3. U. S. Air Force. Near Rosamond Dry Lake. Drilled gravel-packed irrigation well in alluvium, diameter 14 inches, reported depth 238 feet. Land-surface datum is about 2,318 feet above msl. Highest water level 28.08 below lsd, Feb. 2, 1948; lowest 46.56 below lsd, June 29, 1953. Records available: 1947-53. Measurement discontinued.

8/10-9P1. U. S. Air Force. Near Rosamond Dry Lake. Drilled unused domestic well in alluvium, diameter 12 inches, reported depth 250 feet. Land-surface datum is about 2,321 feet above msl. Highest water level 34.90 below lsd, Mar. 28, 1952; lowest 39.12 below lsd, July 30, 1953. Records available: 1951-53. Measurement discontinued.

**8/10-19Q1. Union Trust & Savings Bank. East of Redman School. Drilled unused well in alluvium, diameter 12 inches, reported depth 750 feet. Land-surface datum is about 2,342 feet above msl. Highest water level 29.7 below lsd, Apr. 9, 1941; lowest 124.41 below lsd, Nov. 7, 1951. Records available: 1939-42, 1944-48, 1950-54. Nov. 10, 91.4.

8/10-32N1. John Demuth. Near Rosamond Dry Lake. Drilled domestic well in alluvium, diameter 8 inches, reported depth 97 feet. Land-surface datum is about 2,379 feet above msl. Highest water level 67.60 below lsd, Mar. 29, 1948; lowest 91.20 below lsd, Oct. 30, 1951. Records available: 1948-53. Measurement discontinued.

**8/12-4K1. Owner unknown. Near Rosamond. Drilled unused well in alluvium, diameter 6 inches, depth 265 feet. Land-surface datum is about 2,307 feet above msl. Highest water level 0.8 below lsd, Jan. 10, 1943; lowest 34.30 below lsd, Oct. 9, 1954. Records available: 1943-47, 1949-54. Mar. 24, 22.72; Oct. 9, 34.30, measured by Geological Survey; Nov. 11, 33.17.

**8/12-20B1. Owner unknown. Near Oban. Drilled unused well in alluvium, diameter 6 inches, depth 53 feet. Land-surface datum is about 2,317 feet above msl. Highest water level 3.2 below lsd, Jan. 31, 1942; lowest 44.16 below lsd, Nov. 10, 1954. Records available: 1941-54. Mar. 24, 29.35; Nov. 10, 44.16.

**8/12-22M2. Owner unknown. Near Oban. Drilled unused well in alluvium, diameter 6 inches. Land-surface datum is about 2,300 feet above msl. Highest water level flowing, Mar. 1, 1945; lowest 26.73 below lsd, Oct. 19, 1954. Records available: 1943-54. Oct. 19, 26.73, measurement by Geological Survey; Nov. 10, 25.52. Measurement discontinued.

**8/12-24R1. J. Ellis. South of Rosamond Lake. Drilled unused well in alluvium, diameter 6 inches, reported depth 80 feet. Land-surface datum is about 2,310 feet above msl. Highest water level 1.1 below lsd, Dec. 8, 1943; lowest dry, Nov. 11, 1954. Records available: 1941-54. Mar. 24, 22.0; Nov. 11, dry. Measurement discontinued.

**8/13-7H1. Lone Butte Ranch. South of Willow Springs. Drilled irrigation well in alluvium, diameter 14 inches, reported depth 500 feet. Land-surface datum is about 2,443 feet above msl. Highest water level 93.1 below lsd, Apr. 9, 1941; lowest 198.9 below lsd, Nov. 11, 1954. Records available: 1940-44, 1946-54. Mar. 24, 179.0; Nov. 198.9.

8/14-2R1. Owner unknown. Near Antelope Buttes. Drilled unused well in alluvium, diameter 14 inches. Land-surface datum is about 2,494 feet above msl. Highest water level 124.3 below lsd, Nov. 24, 1942; lowest 192.6 below lsd, Nov. 23, 1953. Records available: 1942-43, 1945-53. No measurement made in 1954.

**8/14-14R1. G. Getzlaff. Northeast of Fairmont Butte. Drilled unused well in alluvium, diameter 16 inches, depth 254 feet. Land-surface datum is about 2,494 feet above msl. Highest water level 135.2 below lsd, Mar. 12, 1945; lowest 195.12 below lsd, Nov. 11, 1954. Records available: 1943-54. Mar. 25, 181.4; Nov. 11, 195.12.

**8/14-17Q1. Marl Craven-Tibola. Near Fairmont Butte. Drilled domestic well in alluvium, diameter 8 inches, reported depth 200 feet. Land-surface datum is about 2,590 feet above msl. Highest water level 158.9 below lsd, Apr. 9, 1947; lowest 165.8 below lsd, Nov. 20, 1952. Records available: 1946-54. Nov. 12, 162.1. Measurement discontinued.

8/15-27R1. I. T. Brandt. Near Fairmont. Drilled domestic well in alluvium. Land-surface datum is about 2,806 feet above msl. Highest water level 139.95 below lsd, Dec. 8, 1947; lowest 147.1 below lsd, June 10, 1953. Records available: 1945-53. No measurement made in 1954.

**8/15-33G1. J. Alesso. Formerly Correll. West of Fairmont. Drilled domestic well in alluvium, diameter 12 inches, depth 282 feet. Land-surface datum is about 2,930 feet above msl. Highest water level 194.0 below lsd, Jan. 23, 1946; lowest 233.26 below lsd, Nov. 12, 1954. Records available: 1946-54. Mar. 25, 221.6; Nov. 12, 233.26.

**8/15-36M1. Fairmont School. In Fairmont. Drilled domestic well in alluvium, diameter 8 inches, reported depth 266 feet. Land-surface datum is about 2,785 feet above msl. Highest water level 72.3 below lsd, Dec. 8, 1947; lowest 89.5 below lsd, Dec. 3, 1951. Records available: 1943-45, 1947, 1949-54. Mar. 25, 80.9; Nov. 12, 80.53.

**8/16-5N1. Carpy. Near Neenach. Drilled unused well in alluvium, diameter 10 inches, depth 224 feet. Land-surface datum is about 2,900 feet above msl. Highest water level 190.65 below lsd, Dec. 8, 1947; lowest 218.2 below lsd, Nov. 14, 1942. Records available: 1943-54. Mar. 25, 201.6; Nov. 12, 203.75.

8/16-14L1. Snyder. Near Neenach. Drilled domestic well in alluvium, diameter 10 inches. Land-surface datum is about 2,859 feet above msl. Highest water level 105.5 below lsd, Nov. 13, 1945; lowest 129.10 below lsd, Dec. 9, 1949. Records available: 1945-47, 1949-50, 1952-53. No measurement made in 1954.

9/12-16P2. Chevron Service Station. Near Rosamond. Drilled industrial and domestic well in alluvium, diameter 8 inches, reported depth 150 feet. Land-surface datum is about 2,349 feet above msl. Highest water level 64.6 below lsd, Dec. 13, 1950; lowest 76.5 below lsd, Aug. 19, 1952. Records available: 1950-53. Measurement discontinued.

San Gabriel River Basin

1S/10-18. Baldwin Park. Drilled water-table observation well tapping fine sand to coarse gravel in alluvial deposits, diameter 16 inches, depth 200 feet, perforations 74-174. Land-surface datum is 387 feet above msl. Highest water level 56.0 below lsd, May 19, 1916; lowest 141.62 below lsd, Nov. 20, 1951. Records available: 1903-54.

Daily mean water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	134.50	134.35	133.71	133.07	129.80	125.87	127.62	131.14	133.04	133.46	134.21	133.69
2	134.53	134.35	133.68	133.04	129.51	125.88	127.74	131.24	133.09	133.46	134.23	133.62
3	134.55	134.33	133.66	133.01	129.25	125.92	127.83	131.36	133.13	133.46	134.25	133.56
4	134.57	134.33	133.64	132.98	129.02	125.94	127.95	131.47	133.15	133.45	134.28	133.51
5	134.62	134.33	133.62	132.96	128.82	125.97	128.02	131.58	133.19	133.45	134.32	133.46
6	134.66	134.31	133.59	132.94	128.60	126.00	128.10	131.67	133.19	133.45	134.35	133.39
7	134.70	134.33	133.58	132.89	128.43	126.02	128.20	131.77	133.19	133.47	134.40	133.32
8	134.76	134.31	133.57	132.87	128.26	126.08	128.33	131.85	133.23	133.48	134.43	133.27
9	134.77	134.30	133.55	132.85	128.11	126.16	128.46	131.92	133.24	133.48	134.46	133.20
10	134.78	134.28	133.53	132.84	127.94	126.20	128.60	131.99	133.25	133.50	134.48	133.16
11	134.80	134.27	133.50	132.82	127.77	126.24	128.74	132.05	133.26	133.51	134.50	133.10
12	134.82	134.23	133.53	132.78	127.61	126.31	128.85	132.13	133.28	133.52	134.47	133.04
13	134.83	134.18	133.54	132.74	127.49	126.37	128.97	132.20	133.28	133.53	134.41	132.97
14	134.83	134.15	133.54	132.70	127.34	126.39	129.08	132.28	133.29	133.56	134.36	132.90
15	134.76	134.13	133.55	132.68	127.21	126.43	129.21	132.33	133.30	133.60	134.33	132.85
16	134.74	134.09	133.55	132.65	127.03	126.48	129.34	132.38	133.31	133.64	134.30	132.81
17	134.68	134.06	133.55	132.62	126.87	126.53	129.48	132.44	133.31	133.69	134.27	132.79
18	134.63	134.03	133.52	132.60	126.74	126.60	129.59	132.49	133.33	133.74	134.21	132.74
19	134.67	134.00	133.47	132.55	126.61	126.67	129.71	132.57	133.35	133.77	134.17	132.69
20	134.67	133.95	133.43	132.49	126.51	126.75	129.84	132.62	133.36	133.81	134.13	132.64

1S/10-18--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	134.61	133.91	133.40	132.35	126.39	126.85	129.96	132.66	133.38	133.85	134.10	132.61
22	134.58	133.88	133.34	132.20	126.29	126.93	130.08	132.71	133.40	133.87	134.08	132.58
23	134.53	133.85	133.33	132.04	126.20	127.02	130.21	132.74	133.43	133.89	134.05	132.58
24	134.52	133.82	133.31	131.81	126.12	127.10	130.31	132.76	133.43	133.92	134.03	132.56
25	134.51	133.82	133.31	131.57	126.04	127.18	130.40	132.78	133.44	133.95	133.99	132.54
26	134.47	133.81	133.30	131.30	126.00	127.27	130.49	132.82	133.45	133.98	133.95	132.53
27	134.43	133.80	133.24	131.01	125.95	127.32	130.56	132.85	133.45	134.02	133.90	132.53
28	134.41	133.76	133.19	130.74	125.91	127.38	130.67	132.89	133.44	134.06	133.84	132.50
29	134.40		133.18	130.36	125.90	127.46	130.78	132.91	133.47	134.10	133.77	132.47
30	134.39		133.15	130.01	125.87	127.55	130.88	132.93	133.46	134.14	133.75	132.47
31	134.37		133.11		125.86		130.98	132.95		134.17		132.46

Coastal Plain

3S/12-8L3. Los Angeles County Farm. Near Downey. Drilled unused artesian well in Gaspur water-bearing zone of Recent age and underlying deposits of Pleistocene age, diameter 8 inches, depth 248 feet. Land-surface datum is about 92 feet above msl. Highest water level 14.45 below lsd, Mar. 20, 1930; lowest 64.08 below lsd, Sept. 6, 1954. Records available: 1930-54. Records furnished by San Gabriel Valley Protective Association.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	55.55	May 3	58.24	Aug. 2	63.89	Nov. 1	61.40
Feb. 1	54.37	June 7	61.06	Sept. 6	64.08	Dec. 6	59.34
Mar. 1	55.42	July 5	61.41	Oct. 18	62.28	27	59.49
Apr. 5	55.39						

3S/14-3K1. Southern California Water Co., Yukon plant well 1. Near Inglewood. Drilled public-supply artesian well in sand and gravel deposits of Pleistocene age, diameter 16 inches, depth 652 feet, perforations 368-414, 538-552, 562-578. Land-surface datum is about 74 feet above msl. Highest water level 97 below lsd, Feb. 1, 1942; lowest 168 below lsd, Sept. 14, 1950. Records available: 1941-54. Records furnished by Southern California Water Co.

Jan. 7	135	May 7	150	Aug. 7	166	Nov. 7	158
Feb. 7	140	June 7	153	Sept. 7	163	Dec. 7	147
Mar. 7	150	July 7	155	Oct. 7	157	28	148
Apr. 7	152						

3S/14-21B1. Southern California Water Co., Rosecrans plant well 1. Near Hawthorne. Drilled public-supply artesian well in sand and gravel deposits of Pleistocene age, diameter 16 inches, depth 500 feet. Land-surface datum is about 63 feet above msl. Highest water level 66 below lsd, May 1, 1931; lowest 128 below lsd, July 14, 1953. Records available: 1931-37, 1939-54. Records furnished by Southern California Water Co.

Jan. 7	119	May 7	115	Aug. 7	120	Nov. 7	121
Feb. 7	115	June 7	121	Sept. 7	119	Dec. 7	120
Mar. 7	117	July 7	118	Oct. 7	124	28	120
Apr. 7	115						

4S/11-5D1. V. Capovilla. Near Norwalk. Drilled domestic artesian well in deposits of Pleistocene age, diameter 10 inches, depth 270 feet. Land-surface datum is 44.7 feet above msl. Highest water level 3.41 below lsd, Mar. 17, 1933; lowest 80.67 below lsd, July 23, 1953. Records available: 1930-54. Records furnished by Orange County Flood Control District. Jan. 29, 44.60; Feb. 25, 44.49; Mar. 23, 44.08; Apr. 29, 50.68, water level below sea level; May 20, 60.85, water level below sea level; June 22, 70.23, water level below sea level; Oct. 22, 67.71, water level below sea level.

4S/13-14L1. Southern California Edison Co., Ltd. Long Beach. Drilled unused artesian well in Gaspur water-bearing zone of Recent age, diameter 10 inches, depth 114 feet, perforations 90-114. Land-surface datum is 28.55 feet above msl. Highest water level 20.62 below lsd, Apr. 5, 1941; lowest 39.58 below lsd, Dec. 6, 1954. Records available: 1930-54. Records furnished by city of Long Beach. Water level below sea level.

Jan. 11	38.54	May 3	37.84	Aug. 2	39.22	Nov. 1	39.56
Feb. 1	38.19	June 7	37.95	Sept. 6	39.39	Dec. 6	39.58
Mar. 1	37.99	July 5	37.96	Oct. 4	39.55	27	39.49
Apr. 5	37.71						

4S/13-23G2. City of Long Beach. Near Long Beach. Drilled unused artesian well in gravel in uppermost part of Silverado water-bearing zone of Pleistocene age, diameter 26 to 16 inches, depth 1,074 feet, perforations 650-900. Land-surface datum is 24.50 feet above msl. Highest water level 52.93 below lsd, Feb. 6, 1939; lowest 131.75 below lsd, July 20, 1953. Records available: 1932-54. Records furnished by city of Long Beach. Water level below sea level.

4S/13-23G2--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	116.91	May 3	115.60	Aug. 2	126.20	Nov. 1	125.00
Feb. 1	113.60	June 7	121.20	Sept. 6	127.12	Dec. 6	118.38
Mar. 1	113.08	July 5	123.12	Oct. 4	120.72	27	120.70
Apr. 5	110.88						

Orange County

Coastal Plain

[Measurements furnished by Orange County Flood Control District are marked with an asterisk]

*3S/11-36Q2. M. Del Giorgio. Near Buena Park. Drilled unused artesian well in deposits of Pleistocene age, diameter 12 inches, depth 666 feet, perforations 500-650. Land-surface datum is 91.58 feet above msl. Highest water level 48.02 below lsd, Mar. 28, 1945; lowest 122.96 below lsd, Aug. 9, 1954. Records available: 1930-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 11	104.86	Apr. 5	96.94	Aug. 9	122.96	Nov. 8	109.80
Feb. 1	98.66	May 3	103.64	Sept. 13	120.73	Dec. 6	99.59
Mar. 1	99.04	June 14	114.66	Oct. 11	112.70	27	99.07

*4S/10-22L2. Halderman & Callens. Near Anaheim. Drilled irrigation artesian and water-table well in sand and gravel of Pleistocene age, diameter 16 inches, depth 475 feet, perforations 140-158, 370-401, 410-457. Land-surface datum is 136 feet above msl. Highest water level 97.16 below lsd, May 3, 1945; lowest 153.70 below lsd, Sept. 14, 1951. Records available: 1928-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	149.41	Mar. 11	144.41	June 10	145.95	Aug. 12	151.88
Feb. 11	144.74	Apr. 9	141.84	July 9	149.56	Dec. 10	142.66

4S/11-19K1. Los Alamitos Sugar Co. Near Los Alamitos. Drilled unused artesian well in deposits of Pleistocene age, diameter 12 inches, depth 448 feet, perforations 440-460. Land-surface datum is 28.50 feet above msl. Highest water level flowing, 1901; lowest 70.52 below lsd, July 26, 1954. Records available: 1901, 1903, 1929-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	47.88	Apr. 26	41.22	July 26	70.52	Oct. 25	56.38
Feb. 22	41.36	May 31	55.22	Aug. 30	67.48	Nov. 29	45.06
Mar. 29	39.19	June 28	65.08	Sept. 27	61.66	Dec. 27	42.10

*5S/10-9D1. Julio Martinez. Near Garden Grove. Drilled public-supply artesian well in Gaspur water-bearing zone of Recent age and in underlying deposits of Pleistocene age, diameter 12 inches, depth 250 feet. Land-surface datum is 74.7 feet above msl. Highest water level 17.9 below lsd, June 13, 1922; lowest 94.44 below lsd, Dec. 10, 1954. Records available: 1922, 1924-25, 1927-28, 1930-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	87.75	May 13	87.09	Sept. 17	92.03	Nov. 12	90.06
Feb. 11	86.69	June 10	89.64	Oct. 8	92.64	Dec. 10	94.44

*5S/10-28B1. John Sturtevant. Near Santa Ana. Drilled unused artesian well in deposits of Pleistocene age, diameter 10 inches, depth 122 feet. Land-surface datum is 45.1 feet above msl. Highest water level 23.90 below lsd, Jan. 12, 1945; lowest 74.31 below lsd, July 13, 1954. Records available: 1935-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 15	59.74	Apr. 13	57.09	Aug. 17	72.38	Nov. 16	59.14
Feb. 16	58.00	May 14	65.00	Sept. 21	66.81	Dec. 14	56.19
Mar. 12	64.73	July 13	74.31	Oct. 4	64.22		

*5S/11-2E1. Western Trust & Savings Bank. Near Westminster. Drilled irrigation artesian well in deposits of Pleistocene age, diameter 12 inches, depth 517 feet. Land-surface datum is 47.98 feet above msl. Highest water level 22.31 below lsd, May 19, 1930; lowest 87.91 below lsd, Aug. 10, 1954. Records available: 1929-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	69.27	Apr. 8	60.84	Aug. 10	87.91	Nov. 9	72.44
Feb. 9	69.10	June 10	78.84	Oct. 7	77.73	Dec. 9	62.81
Mar. 11	71.43	July 8	86.58				

*5S/11-16D2. Anaheim Sugar Co. Near Seal Beach. Drilled unused artesian well in deposits of Pleistocene age, diameter 10 inches, depth 400 feet. Land-surface datum is 16.62 feet above msl. Highest water level 0.70 above lsd, Feb. 6, 1930; lowest 49.81 below lsd, July 29, 1953. Records available: 1929-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	38.93	May 5	35.21	Aug. 4	49.54	Nov. 3	39.11
Feb. 3	41.93	June 2	39.14	Sept. 1	46.14	Dec. 1	34.40
Mar. 3	44.49	July 7	44.04	Oct. 6	43.29	29	32.81
Apr. 7	33.02						

5S/11-18N1. U. S. Navy. Near Seal Beach. Drilled observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 250 feet. Land-surface datum is 4.85 feet above msl. Highest water level 1.58 below lsd, Jan. 25, 1944; lowest 4.96 below lsd, Feb. 21, 1944, July 9, 1953. Records available: 1941-48, 1951-54. Jan. 22, 4.51; June 30, 4.94, water level below sea level; Dec. 29, 4.37.

5S/11-18P1. U. S. Navy. Near Seal Beach. Drilled observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 126 feet. Land-surface datum is 4.78 feet above msl. Highest water level 1.24 above lsd, Jan. 15, 1942; lowest 2.58 below lsd, July 9, 1953. Records available: 1941-48, 1951-54. Jan. 22, 1.54; June 30, 2.53; Dec. 29, 1.55.

*5S/11-25P1. E. J. Lecrivain. Near Huntington Beach. Drilled domestic artesian well in deposits of Pleistocene age, diameter 12 inches, depth 150 feet. Land-surface datum is 48 feet above msl. Highest water level 33.90 below lsd, Feb. 25, 1932; lowest 72.61 below lsd, Mar. 12, 1954. Records available: 1930-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 15	65.34	Apr. 13	65.78	July 13	69.84	Oct. 14	69.33
Feb. 16	69.13	May 14	64.96	Aug. 17	71.10	Nov. 16	66.47
Mar. 12	72.61	June 11	67.18	Sept. 21	70.07	Dec. 14	63.65

*5S/11-28A1. A. Ruoff. Near Huntington Beach. Drilled irrigation artesian well in deposits of Pleistocene age, diameter 10 inches, depth 453 feet. Land-surface datum is 7.13 feet above msl. Highest water level 15.18 above lsd, May 23, 1945; lowest 54.95 below lsd, Mar. 12, 1954. Records available: 1930-54. Water level below sea level.

Jan. 15	42.77	May 14	38.78	Aug. 17	48.59	Nov. 16	42.14
Mar. 12	54.95	June 11	41.41	Sept. 21	49.73	Dec. 14	38.02
Apr. 13	42.27	July 13	44.64	Oct. 14	48.40		

5S/11-29E1. U. S. Government. Near Sunset Beach. Drilled observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 220 feet. Land-surface datum is 7.56 feet above msl. Highest water level 0.05 above lsd, June 2, 1942; lowest 8.18 below lsd, Oct. 9, 1943. Records available: 1941-48, 1951-54. Jan. 22, 6.44; June 30, 6.71; Dec. 29, 6.43.

5S/11-29E2. U. S. Government. Near Sunset Beach. Drilled observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 120 feet. Land-surface datum is 6.57 feet above msl. Highest water level 4.06 below lsd, Dec. 20, 1941; lowest 5.93 below lsd, May 16, 1952. Records available: 1941-48, 1951-54. Jan. 22, 5.64; June 30, 5.69; Dec. 29, 5.78.

5S/12-12P1. U. S. Navy. Near Seal Beach. Drilled unused artesian well in deposits of Pleistocene age, diameter 12 inches, depth 185 feet. Land-surface datum is 15.97 feet above msl. Highest water level 6.26 below lsd, Mar. 13, 1933; lowest 38.03 below lsd, Sept. 4, 1953. Records available: 1930-54. Records furnished by city of Long Beach. Water level below sea level.

Jan. 15	32.42	Apr. 9	32.45	July 2	35.32	Dec. 3	32.13
Feb. 5	33.66	May 21	33.78	Aug. 13	37.19	30	31.51
Mar. 19	34.10	June 11	33.70	Nov. 12	33.75		

5S/12-13D1. U. S. Navy. Near Seal Beach. Drilled observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 210 feet. Land-surface datum is 24.55 feet above msl. Highest water level 22.08 below lsd, Apr. 20, 1942; lowest 24.56 below lsd, Jan. 15, 1942. Records available: 1942-48, 1951-54. Jan. 22, 22.39; June 30, 24.43; Dec. 29, 23.40.

*6S/10-1L2. I. A. W. Henry. Near Santa Ana. Drilled unused artesian well in deposits of Pleistocene age, diameter 2½ inches, depth 143 feet. Land-surface datum is 39.65 feet above msl. Highest water level flowing, 1904; lowest 36.00 below lsd, July 15, 1952. Records available: 1904, 1921-54.

Jan. 26	25.66	Apr. 15	25.29	July 15	25.36	Oct. 15	26.35
Feb. 18	25.68	May 14	24.77	Aug. 23	25.66	Nov. 18	26.41
Mar. 16	25.38	June 15	25.15	Sept. 23	26.34	Dec. 16	26.22

*6S/10-5C1. Robert Gisler. Huntington Beach. Drilled irrigation artesian well in Talbert water-bearing zone and underlying deposits of Pleistocene age, diameter 14 inches, depth 209 feet, perforations 85-92, 126-144, 165-184. Land-surface datum is 19.24 feet above msl. Highest water level 4.18 below lsd, Jan. 17, 1942; lowest 48.42 below lsd, Mar. 9, 1953. Records available: 1931-54. Water level below sea level.

Jan. 4	36.00	Apr. 5	38.96	July 12	42.04	Oct. 4	40.40
Feb. 1	38.20	May 17	37.97	Aug. 9	44.10	Nov. 8	38.80
Mar. 1	46.81	June 7	37.90	Sept. 13	42.14	Dec. 6	34.74

*6S/11-13G2. Surf Land & Water Co. East of Huntington Beach. Drilled unused artesian well in Talbert water-bearing zone, diameter 12 inches, depth 154 feet. Land-surface datum is 2.85 feet above msl. Highest water level 1.65 above lsd, Apr. 21, 1941; lowest 17.09 below lsd, Feb. 21, 1951. Records available: 1930-54. Water level below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	9.21	May 5	9.82	Aug. 4	11.39	Nov. 3	10.25
Feb. 3	10.70	June 2	10.14	Sept. 1	11.26	Dec. 1	9.19
Mar. 3	13.93	July 7	10.42	Oct. 6	10.64	29	8.67
Apr. 7	11.71						

*1-9F1. The Irvine Co. Near Santa Ana. Drilled irrigation artesian well in deposits of Pleistocene age, diameter 20 to 10 inches, depth 1,208 feet. Land-surface datum is 51 feet above msl. Highest water level 23.62 below lsd, Apr. 18, 1945; lowest 102.83 below lsd, July 25, 1951. Records available: 1932-54. Water level below sea level.

Jan. 6	76.72	May 5	77.18	Aug. 4	99.43	Nov. 10	80.58
Feb. 10	75.99	June 2	79.48	Sept. 1	91.21	Dec. 1	76.02
Mar. 3	80.62	30	85.93	Oct. 6	87.45	29	71.67
Apr. 7	79.96						

Riverside County

San Jacinto Valley

4/1W-36N2. Fruitvale Mutual Water Co. Near Hemet. Drilled well in alluvium, diameter 30 inches. Land-surface datum is about 1,690 feet above msl. Highest water level 123.32 below lsd, Dec. 23, 1950; lowest 145.30 below lsd, Feb. 26, 1953. Records available: 1950-53. Measurement discontinued.

4/3W-32E1. James Malcolm. Perris. Drilled well in alluvium, diameter 16 inches. Land-surface datum is about 1,433 feet above msl. Highest water level 62.45 below lsd, Apr. 26, 1948; lowest 73.49 below lsd, Apr. 26, 1942. Records available: 1929-54. Mar. 30, 68.41; June 1, 69.59; Oct. 1, 69.84; Nov. 5, 69.90.

5/2W-27E2. Fred Harvey. Winchester. Drilled domestic well in alluvium, diameter 9 inches. Land-surface datum is about 1,477 feet above msl. Highest water level 25.20 below lsd, Mar. 4, 1931; lowest 48.41 below lsd, June 1, 1954. Records available: 1930-54. Mar. 30, 45.99; June 1, 48.41; Aug. 31, 47.89; Nov. 15, 47.25.

6/3W-4A2. Menifee School. Menifee Valley. Drilled domestic well in alluvium. Land-surface datum is about 1,438 feet above msl. Highest water level 45.79 below lsd, Mar. 7, 1945; lowest 72.60 below lsd, Jan. 23, 1953. Records available: 1925-34, 1936, 1938-54. Mar. 3, 64.71; July 7, 66.63; Aug. 31, 67.25; Nov. 5, 65.47.

San Bernardino County

Mojave River Basin
Upper Basin
[Measurements furnished by San Bernardino County Flood Control District are marked with an asterisk]

*3/3W-6E2. Mike Spranger. Near Mojave River southeast of Hesperia. Drilled well in alluvium, diameter 12 inches, reported depth 61 feet. Land-surface datum is about 2,950 feet above msl. Highest water level 4.50 below lsd, May 11, 1954; lowest 57.27 below lsd, Nov. 26, 1951. Records available: 1948-54. May 11, 4.50; Nov. 16, 37.80.

*3/4W-13B2. W. T. Boehringer. Near Mojave River southeast of Hesperia. Drilled well in alluvium, diameter 10 inches. Land-surface datum is about 2,950 feet above msl. Highest water level 79.26 below lsd, May 26, 1953; lowest 97.80 below lsd, Nov. 16, 1954. Records available: 1951-54. May 11, 89.50; Nov. 16, 97.80.

*4/3W-1M1. E. D. S. Pope. Apple Valley near Deadman Point. Drilled unused irrigation well in alluvium, reported depth 730 feet. Land-surface datum is about 3,044 feet above msl. Highest water level 182.50 below lsd, Jan. 15, 1953; lowest 210.05 below lsd, Nov. 27, 1951. Records available: 1930-33, 1935-43, 1945-54. Nov. 16, 204.80.

*4/3W-6B1. Pettis. Northeast of Hesperia. Drilled irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 2,871 feet above msl. Highest water level 50.78 below lsd, Nov. 21, 1945; lowest 67.52 below lsd, Nov. 9, 1953. Records available: 1931-32, 1934-54. May 12, 67.50; Nov. 16, 66.30.

*4/3W-6D1. A. W. Phillips. Northeast of Hesperia. Drilled domestic well in alluvium, diameter 10 inches, reported depth 100 feet. Land-surface datum is about 2,872 feet above msl. Highest water level 51.5 below lsd, Feb. 24, 1917; lowest 65.40 below lsd, Nov. 16, 1954. Records available: 1917, 1930-54. Mar. 29, 62.80; May 12, 60.80; Nov. 16, 65.40.

*4/3W-18E1. Owner unknown. Near Mojave River east of Hesperia. Drilled irrigation well in alluvium, diameter 12 inches, reported depth 100 feet. Land-surface datum is about 2,867 feet above msl. Highest water level 14.36 below lsd, May 2, 1945; lowest 38.80 below lsd, Nov. 6, 1953. Records available: 1930-32, 1935, 1938-54. May 11, 31.90; Nov. 16, 37.65.

*4/3W-19R1. Arrowhead Reservoir & Power Co. Southeast of Hesperia. Driven observation well in alluvium, diameter 2 inches, reported depth 45 feet. Land-surface datum is about 2,890 feet above msl. Highest water level 10.75 below lsd, June 12, 1907; lowest 43.70 below lsd, Nov. 6, 1953. Records available: 1905, 1907, 1930-54. May 11, 24.40; Nov. 16, 41.70.

*5/3W-3D1. Dick Lewis. Apple Valley east of Victorville. Drilled domestic and irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 2,914 feet above msl. Highest water level 71.80 below lsd, May 7, 1948; lowest 87.90 below lsd, Nov. 16, 1954. Records available: 1948-49, 1951-54. Nov. 16, 87.90.

*5/3W-13D1. Eva V. Case. Apple Valley southeast of Victorville. Drilled domestic well in alluvium, diameter 6 inches. Land-surface datum is about 2,990 feet above msl. Highest water level 89.21 below lsd, May 7, 1948; lowest 96.20 below lsd, May 11, 1954. Records available: 1948-54. May 11, 96.20; Nov. 16, 95.00.

5/3W-18F1. Owner unknown. Near Victorville. Drilled irrigation well in alluvium, diameter 14 inches, reported depth 464 feet. Land-surface datum is about 2,909 feet above msl. Highest water level 98.0 below lsd, Feb. 27, 1917; lowest 118.60 below lsd, May 27, 1953. Records available: 1917, 1923, 1930-33, 1935, 1937-53. No measurement made in 1954.

*5/3W-22A1. Curtis Marshall. Apple Valley southeast of Victorville. Drilled domestic and irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 2,924 feet above msl. Highest water level 88.87 below lsd, May 7, 1948; lowest 102.40 below lsd, Nov. 16, 1954. Records available: 1948-54. May 11, 102.00; Nov. 16, 102.40.

5/3W-24N1. Douglas. Apple Valley southeast of Victorville. Drilled domestic well in alluvium, diameter 12 inches. Land-surface datum is about 2,928 feet above msl. Highest water level 89.04 below lsd, May 7, 1948; lowest 105.30 below lsd, Nov. 16, 1954. Records available: 1948-54. Nov. 16, 105.30.

*5/4W-10M1. Owner unknown. Victorville. Dug domestic well in alluvium. Land-surface datum is about 2,765 feet above msl. Highest water level 43.57 below lsd, Dec. 21, 1943; lowest 62.45 below lsd, Nov. 16, 1954.[v] Records available: 1930-32, 1935, 1937-54. May 11, 57.65; Nov. 16, 62.45.

*5/4W-11P1. Mr. Pratt. Near Victorville. Drilled domestic well in alluvium, diameter 8 inches, reported depth 65 feet. Land-surface datum is about 2,786 feet above msl. Highest water level 53.77 below lsd, Dec. 13, 1944; lowest 62.40 below lsd, May 11, 1954. Records available: 1931-32, 1935, 1937-54. May 11, 62.40; Nov. 16, 60.40.

*5/4W-11P2. Lee Saul. Near Victorville. Drilled irrigation well in alluvium, diameter 16 inches, reported depth 323 feet. Land-surface datum is about 2,791 feet above msl. Highest water level 27.65 below lsd, June 15, 1932; lowest 50.60 below lsd, May 10, 1949. Records available: 1931-32, 1935-54. May 11, 43.10; Nov. 16, 44.90.

*5/4W-35A1. A. Sorensen. Near Hesperia. Drilled irrigation well in alluvium, diameter 10 inches. Land-surface datum is about 2,802 feet above msl. Highest water level flowing, Nov. 24, 1952; lowest 11.83 below lsd, May 12, 1954. Records available: 1917, 1930-31, 1945, 1948-54. May 12, 11.83.

*6/3W-28R1. Irene McCarthy. Apple Valley northeast of Victorville. Drilled domestic and irrigation well in alluvium. Land-surface datum is about 2,968 feet above msl. Highest water level 125.70 below lsd, May 13, 1948; lowest 135.00 below lsd, Nov. 16, 1954. Records available: 1948-54. Nov. 16, 135.00.

Middle Basin

*7/4W-30C1. Owner unknown. Near Bryman Crossing. Drilled irrigation well in alluvium. Land-surface datum is about 2,561 feet above msl. Highest water level 36.90 below lsd, Jan. 4, 1945; lowest 60.81 below lsd, Feb. 17, 1953. Records available: 1930-32, 1935-54. Mar. 29, 58.10; May 13, 58.50; Nov. 17, 59.30.

*8/3W-4M1. Everett Swing. Near Hodge Crossing. Dug unused well in alluvium, diameter 6 feet. Land-surface datum is about 2,288 feet above msl. Highest water level 13.10 below lsd, May 13, 1943; lowest 16.14 below lsd, Nov. 27, 1951. Records available: 1930-33, 1939-54. May 13, 14.46; Nov. 17, dry at 15.60.

*8/4W-12Q1. Holcomb Bros. Near Wild Crossing. Drilled irrigation well in alluvium. Land-surface datum is about 2,329 feet above msl. Highest water level 8.16 below lsd, May 13, 1954; lowest 13.56 below lsd, Nov. 17, 1954. Records available: 1931-32, 1935-37, 1939-41, 1943-54. Mar. 29, 10.14; May 13, 8.16; Nov. 17, 13.56.

*8/4W-20N1. Pofapoff. Near Helendale. Dug irrigation and domestic well in alluvium. Land-surface datum is about 2,430 feet above msl. Highest water level 2.01 below lsd, Mar. 8, 1932; lowest 21.70 below lsd, May 13, 1954. Records available: 1930-32, 1934-47, 1951-54. May 13, 21.70; Nov. 17, 20.30.

*8/4W-31D1. F. H. Merrill. Near Helendale. Dug domestic and irrigation well in alluvium, diameter 8 feet, reported depth 68 feet. Land-surface datum is about 2,465 feet above msl. Highest water level 42.19 below lsd, Nov. 18, 1948; lowest 60.60 below lsd, May 13, 1954. Records available: 1930-32, 1939-54. May 13, 60.60; Nov. 17, 58.30.

*8/4W-31R1. Fred Orebaugh. Near Helendale. Dug and drilled unused well, diameter 14 inches. Land-surface datum is about 2,449 feet above msl. Highest water level 5.14 below lsd, Jan. 16, 1953; lowest 18.54 below lsd, May 26, 1953. Records available: 1930-32, 1934-48, 1950-54. May 13, 6.10; Nov. 17, 9.60.

*9/1W-10D2. R. E. Hettick. Southeast of Barstow. Drilled irrigation well in alluvium, diameter 12 inches, reported depth 132 feet. Land-surface datum is about 2,030 feet above msl. Highest water level 5.41 below lsd, May 1, 1946; lowest 22.08 below lsd, Mar. 18, 1953. Records available: 1945-54. May 19, 12.70; Nov. 26, 14.10.

9/1W-10M1. Greystone Auto Camp. Near Barstow. Drilled domestic well in alluvium. Land-surface datum is about 2,100 feet above msl. Highest water level 48.01 below lsd, Apr. 26, 1944; lowest 60.07 below lsd, Nov. 28, 1951. Records available: 1930, 1932, 1935, 1938-47, 1949-53. No measurement made in 1954.

9/1W-13B1. F. Ryerse. Near Daggett. Dug and drilled irrigation well in alluvium. Land-surface datum is about 2,011 feet above msl. Highest water level 6.24 below lsd, Apr. 26, 1944; lowest 47.35 below lsd, Nov. 28, 1951. Records available: 1925-28, 1930-32, 1935, 1938-53. No measurement made in 1954.

*9/2W-19B1. Sweeten. Near Lenwood Crossing. Domestic well in alluvium. Land-surface datum is about 2,255 feet above msl. Highest water level 62.29 below lsd, May 21, 1947; lowest 75.60 below lsd, May 19, 1954. Records available: 1930-32, 1935, 1937-54. May 19, 75.60; Nov. 26, 74.70.

*9/3W-10P1. Owner unknown. Near Lenwood Crossing. Drilled unused well in alluvium. Land-surface datum is about 2,292 feet above msl. Highest water level 83.3 below lsd, May 20, Nov. 13, 1947; lowest dry, Mar. 29, 1954. Records available: 1930-32, 1934-54. Mar. 29, dry. Measurement discontinued.

*9/3W-10R1. Owner unknown. Near Lenwood Crossing. Dug and drilled irrigation well. Land-surface datum is about 2,209 feet above msl. Highest water level 8.73 below lsd, May 13, 1943; lowest 26.94 below lsd, Nov. 17, 1954. Records available: 1930-32, 1935-49, 1951-54. May 13, 24.70; Nov. 17, 26.94.

*9/3W-14D1. Bullock. Near Lenwood Crossing. Dug and drilled irrigation well. Land-surface datum is about 2,230 feet above msl. Highest water level 7.33 below lsd, May 4, 1945; lowest 28.85 below lsd, Nov. 12, 1953. Records available: 1930-32, 1934-54. May 13, 13.70; Nov. 17, 27.60.

9/3W-28A1. J. Slagill. Near Hodge Crossing. Dug and drilled irrigation well in alluvium, Land-surface datum is about 2,210 feet above msl. Highest water level 3.37 below lsd, Mar. 4. 1932; lowest 26.80 below lsd, Nov. 12, 1953. Records available: 1930-36, 1938-53. No measurement made in 1954.

*9/3W-34R1. Nellie Storey. Near Hodge Crossing. Dug unused well in alluvium. Land-surface datum is about 2,381 feet above msl. Highest water level 125.3 below lsd, Dec. 12, 1944; lowest dry, May 13, 1954. Records available: 1930-33, 1935-36, 1938-42, 1944-45, 1947-51, 1953-54. May 13, dry. Measurement discontinued.

*10/1W-31C1. Terry. Near Barstow. Drilled irrigation well in alluvium. Land-surface datum is about 2,130 feet above msl. Highest water level 44.10 below lsd, May 17, 1954; lowest 51.00 below lsd, Aug. 13, 1931. Records available: 1930-32, 1935, 1938-54. May 17, 44.10; Nov. 22, 44.40.

*10/2W-19P1. Shipley. Northwest of Barstow. Drilled domestic well in alluvium. Land-surface datum is about 2,216 feet above msl. Highest water level 63.19 below lsd, Apr. 4, 1930; lowest 81.90 below lsd, Nov. 13, 1953. Records available: 1930-33, 1935, 1937-45, 1947-54. May 17, 76.40; Nov. 22, 75.70.

*10/2W-30R1. Dixie Crossing School. Northwest of Barstow. Drilled domestic well in alluvium, diameter 12 inches. Land-surface datum is about 2,175 feet above msl. Highest water level 23.78 below lsd, May 27, 1953; lowest 25.60 below lsd, May 17, 1954. Records available: 1952-54. May 17, 25.60.

*10/3W-32C1. Owner unknown. Near Hinkley. Dug and drilled unused well in alluvium. Land-surface datum is about 2,219 feet above msl. Highest water level 54.70 below lsd, Feb. 25, 1931; lowest 71.25 below lsd, Nov. 17, 1954. Records available: 1931-32, 1934, 1936-54. May 13, 60.05; Nov. 17, 71.25.

*11/3W-34F1. B Bar B Ranch. Hinkley Valley. Dug unused well in alluvium. Land-surface datum is about 2,085 feet above msl. Highest water level 29.40 below lsd, Jan. 3, 1936; lowest 37.50 below lsd, Nov. 22, 1954. Records available: 1930-32, 1934-54. May 17, 37.30; Nov. 22, 37.50.

Lower Basin

*8/3E-3E1. C. W. Beaverstock. Near Newberry. Drilled well in alluvium, diameter 24 inches. Land-surface datum is about 1,820 feet above msl. Highest water level 3.80 below lsd, Apr. 28, 1932; lowest 9.72 below lsd, Nov. 21, 1952. Records available: 1930-32, 1935-54. May 18, 7.00; Nov. 23, 7.80.

*8/3E-3F1. Owner unknown. Near Newberry. Drilled domestic well in alluvium, diameter 7 inches, reported depth 32 feet. Land-surface datum is about 1,826 feet above msl. Highest water level 21.08 below lsd, May 19, 1948; lowest dry, May 18, 1954. Records available: 1930-32, 1935-54. May 18, dry. Measurement discontinued.

*8/3E-4B1. H. B. Barrett. Near Newberry. Drilled irrigation well in alluvial fan deposits, diameter 10 inches, depth 16 feet. Land-surface datum is about 1,819 feet above msl. Highest water level 0.54 below lsd, Feb. 26, 1932; lowest 6.20 below lsd, Nov. 16, 1953. Records available: 1930-32, 1935-54. May 18, 4.10; Nov. 23, 5.15.

*8/3E-4B2. H. B. Barrett. Near Newberry. Dug and drilled irrigation well in alluvial fan deposits, reported depth 50 feet. Land-surface datum is about 1,820 feet above msl. Highest water level 0.95 below lsd, Feb. 26, 1932; lowest 6.05 below lsd, Nov. 17, 1953, May 18, 1954. Records available: 1922, 1930-32, 1935-36, 1938-54. May 18, 6.05.

*8/4E-12L1. Mojave Camp Service Station. East of Troy Dry Lake. Drilled well in alluvium, reported depth 205 feet. Land-surface datum is about 1,810 feet above msl. Highest water level 30.40 below lsd, Jan. 2, Nov. 18, 1947; lowest 33.58 below lsd, Nov. 24, 1942. Records available: 1930, 1932, 1935-45, 1947-54. Nov. 23, 31.60.

*9/1E-12D1. Aron Kimble. Northeast of Daggett. Drilled well in alluvium. Land-surface datum is about 1,950 feet above msl. Highest water level 33.50 below lsd, Apr. 26, 1944; lowest 55.50 below lsd, Nov. 26, 1954. Records available: 1930, 1932, 1934-35, 1937-45, 1947-54. May 19, 54.20; Nov. 26, 55.50.

*9/1E-13E1. Owner unknown. Near Daggett. Drilled well in alluvium, diameter 12 inches. Land-surface datum is about 1,949 feet above msl. Highest water level 49.93 below lsd, May 19, 1943; lowest 81.75 below lsd, Nov. 16, 1953. Records available: 1925-28, 1930-54. Mar. 29, 74.90; May 18, 75.20; Nov. 22, 76.50.

*9/1E-13E2. Getz. Drilled well in alluvium, diameter 12 inches. Land-surface datum is about 1,950 feet above msl. Highest water level 54.46 below lsd, Apr. 26, 1944; lowest 85.40 below lsd, Nov. 16, 1953. Records available: 1925-27, 1930-33, 1935-54. Mar. 29, 75.50; May 18, 71.50; Nov. 22, 73.70.

9/1E-18E1. Borland. Near Daggett. Dug and drilled irrigation well in alluvium. Land-surface datum is about 1,996 feet above msl. Highest water level 6.90 below lsd, Apr. 26, 1944; lowest 43.51 below lsd, May 2, 1950. Records available: 1925-28, 1930-32, 1934-50, 1952. No measurement made in 1954.

*9/1E-20N1. B. Lamantain. Near Daggett. Dug well in alluvium. Land-surface datum is about 2,200 feet above msl. Highest water level 82.40 below lsd, Nov. 20, 1952; lowest 111.40 below lsd, May 18, 1954. Records available: 1952-54. May 18, 111.40; Nov. 22, 110.40.

9/2E-4D1. Owner unknown. East of Yermo. Drilled well in alluvium. Land-surface datum is about 1,895 feet above msl. Highest water level 15.18 below lsd, Apr. 24, 1944; lowest 28.95 below lsd, Nov. 26, 1954. Records available: 1930-32, 1934-35, 1937-54. May 19, 27.95; Nov. 26, 28.95.

*9/2E-14N2. Scobel & Haimut. Near Minneola Crossing. Drilled unused well in alluvium, diameter 12 inches, reported depth 300 feet. Land-surface datum is about 1,896 feet above msl. Highest water level 15.30 below lsd, Nov. 16, 1945; lowest 29.70 below lsd, May 18, 1954. Records available: 1925, 1927-28, 1930-35, 1937-54. May 18, 29.70; Nov. 23, 27.20.

*9/2E-14N3. Scobel & Haimut. Near Minneola Crossing. Drilled stock well in alluvium, reported depth 173 feet. Land-surface datum is about 1,883 feet above msl. Highest water level 14.0 below lsd, June 13, 1924; lowest 27.30 below lsd, May 18, 1954. Records available: 1924-28, 1930-33, 1935, 1937-54. May 18, 27.30; Nov. 23, 25.50.

9/2E-18F1. Owner unknown. East of Daggett. Drilled unused well in alluvium, diameter 12 inches. Land-surface datum is about 1,934 feet above msl. Highest water level 47.95 below lsd, May 10, 1945; lowest 63.48 below lsd, May 20, 1953. Records available: 1924-28, 1930-40, 1942-43, 1945-54. Nov. 23, 60.73.

*9/2E-20Q1. Daggett Airport. Minneola Crossing. Drilled domestic well in alluvium, diameter 12 inches, reported depth 142 feet. Land-surface datum is about 1,922 feet above msl. Highest water level 41.81 below lsd, Nov. 15, 1945; lowest 59.20 below lsd, May 18, 1954. Records available: 1932, 1941-48, 1952-54. May 18, 59.20; Nov. 23, 59.00.

*9/3E-3D1. Almond Ranch. South of Harvard. Drilled irrigation well in alluvium, diameter 12 inches. Land-surface datum is about 1,823 feet above msl. Highest water level 40.85 below lsd, Nov. 6, 1950; lowest dry, Nov. 26, 1954. Records available: 1919, 1926, 1930-35, 1937-54. May 19, 49.41, nearby well pumping; Nov. 26, dry.

*9/3E-12E1. Tankersley. Northeast of Troy Dry Lake. Drilled domestic and irrigation well in alluvium. Land-surface datum is about 1,801 feet above msl. Highest water level 23.84 below lsd, Mar. 23, 1922; lowest 35.60 below lsd, May 19, 1954. Records available: 1922, 1930-33, 1935, 1937-44, 1946-54. Mar. 29, 32.10; May 19, 35.60; Nov. 26, 34.00.

*9/3E-19E1. Edwards. Near Newberry. Drilled unused well in alluvium, diameter 12 inches, reported depth 200 feet. Land-surface datum is about 1,860 feet above msl. Highest water level flowing, Oct. 31, 1919, May 22, 1922; lowest 10.50 below lsd, May 18, 1954. Records available: 1919, 1922, 1930-32, 1935, 1938-48, 1950-54. May 18, 10.50; Nov. 23, 10.25.

*9/3E-19P1. Frey. Near Newberry. Drilled unused well in alluvium, diameter 12 inches, reported depth 151 feet. Land-surface datum is about 1,859 feet above msl. Highest water level flowing, May 23, 1947; lowest 5.74 below lsd, May 18, 1954. Records available: 1930-43, 1951-54. May 18, 5.74; Nov. 23, 5.70.

*9/3E-32A1. Berden. Newberry. Drilled well in alluvium. Land-surface datum is about 1,837 feet above msl. Highest water level 5.25 below lsd, June 4, 1952; lowest 8.30 below lsd, Nov. 23, 1954. Records available: 1952-54. May 18, 6.20; Nov. 23, 8.30.

*9/3E-34D1. Clickenbeard. Near Newberry. Drilled and dug domestic well in alluvium. Land-surface datum is about 1,828 feet above msl. Highest water level 28.22 below lsd, Feb. 20, 1930; lowest 35.30 below lsd, Nov. 16, 1953. Records available: 1919, 1922, 1930-32, 1934-43, 1945, 1947-54. May 18, 32.90; Nov. 23, 32.80.

*9/4E-20L1. F. L. Shepherd. North of Troy Dry Lake. Drilled well in alluvium, diameter 6 inches, reported depth 72 feet. Land-surface datum is about 1,780 feet above msl. Highest water level 9.49 below lsd, June 3, 1952; lowest 12.10 below lsd, May 19, 1954. Records available: 1952-54. May 19, 12.10; Nov. 26, 11.30.

*9/4E-31K1. Owner unknown. Near Troy Dry Lake. Drilled unused well, diameter 12 inches, reported depth 25 feet. Land-surface datum is about 1,788 feet above msl. Highest water level 12.86 below lsd, Apr. 25, 1944; lowest 16.46 below lsd, Nov. 24, 1942. Records available: 1930-32, 1935-54. May 19, 14.80; Nov. 23, 14.40.

*10/2E-32P1. Yermo Mutual Water Co. Near Yermo. Drilled unused well in alluvium, diameter 16 inches, depth 413 feet. Land-surface datum is about 1,906 feet above msl. Highest water level 18.53 below lsd, Dec. 15, 1922; lowest 37.70 below lsd, May 19, 1954. Records available: 1919-20, 1922, 1924, 1929-54. May 19, 37.70; Nov. 26, 37.60.

Santa Ana River Basin
San Bernardino Area

1N/4-32N1. City of San Bernardino. Baseline well. Northwest of San Bernardino. Drilled observation well in alluvium of Pleistocene age, diameter 20 inches, depth 581 feet. Land-surface datum is about 1,184 feet above msl. Highest water level 49.4 below lsd, Mar. 6, 1947; lowest 143.3 below lsd, Oct. 22, 1954. Records available: 1946-54. Records furnished by owner.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 20, 1946	58.0	Dec. 16, 1948	77.5	Dec. 15, 1950	105.6	Mar. 19, 1953	123.0
Nov. 25	52.8	Mar. 22, 1949	74.4	Mar. 9, 1951	99.1	June 12	129.5
Mar. 6, 1947	49.4	May 19	81.0	July 13	113.2	Sept. 18	135.2
June 2	59.2	July 7	86.8	Sept. 28	117.9	Dec. 31	134.4
Sept. 11	67.0	Sept. 9	91.0	Nov. 30	116.3	Mar. 12, 1954	130.0
Dec. 12	65.8	Dec. 9	91.6	Mar. 19, 1952	111.5	June 18	135.4
Mar. 22, 1948	66.4	Feb. 21, 1950	87.3	July 4	120.3	Sept. 10	142.4
June 30	73.8	July 7	99.1	Sept. 12	127.6	Oct. 22	143.3
Aug. 30	78.8	Sept. 5	103.9	Dec. 25	122.2	Dec. 16	138.2

1N/5-23P4. Lytle Creek Water & Improvement Co., upper group well 4. Upper Lytle Basin northwest of San Bernardino. Drilled irrigation and public-supply well in alluvium of Pleistocene age, diameter 20 inches, reported depth 647 feet. Land-surface datum is about 1,462 feet above msl. Highest water level flowing, 1939, 1941-43; lowest 261.0 below lsd, Nov. 26, 1951. Records available: 1930-54. Records furnished by owner.

May 26, 1930	125.0	Apr. 20, 1936	133.0	Mar. 2, 1942	(k)	Mar. 7, 1949	155
Nov. 24	170.5	Nov. 2	156.5	June 1	(k)	Nov. 21	206.8
Dec. 1	170.0	Dec. 7	155.0	Dec. 7	39.0	Dec. 25	206.0
Mar. 2, 1931	146.0	Mar. 1, 1937	144.7	Mar. 1, 1943	18.0	Mar. 6, 1950	193.7
June 1	138.5	Nov. 29	62.0	Aug. 2	(k)	Nov. 6	240.0
Nov. 30	178.5	Dec. 13	57.5	Dec. 6	11.0	Dec. 26	230.6
Dec. 7	177.0	Mar. 14, 1938	12.0	Feb. 7, 1944	3.5	Mar. 5, 1951	227.0
Mar. 7, 1932	147.0	June 13	.0	Dec. 28	7.2	Nov. 26	261.0
May 9	123.0	Nov. 21	18.0	Mar. 5, 1945	6.6	Dec. 17	253.0
Dec. 5	126.0	Dec. 27	9.3	June 4	17.5	Mar. 3, 1952	226.0
Mar. 6, 1933	94.0	Apr. 17, 1939	(k)	Dec. 24	8.1	Nov. 3	143
May 8	96.0	Oct. 2	50.1	Mar. 4, 1946	5.5	Dec. 29	114
Dec. 25	145.0	Dec. 4	40.0	Dec. 2	97.5	Mar. 2, 1953	93.0
Mar. 5, 1934	134.0	Mar. 4, 1940	14.0	Mar. 10, 1947	61.0	May 18	91.0
July 30	172.0	Oct. 7	71.0	Jan. 5, 1948	120.4	Nov. 16	160.0
Dec. 10	188.0	Dec. 2	65.0	Mar. 8	116.4	Dec. 28	160.6
Mar. 2, 1935	170.2	Mar. 30, 1941	(k)	June 14	229.0	Mar. 1, 1954	147.0
Apr. 1	163.2	June 2	(k)	Sept. 13	250.3	Nov. 15	177.0
Dec. 23	147.6	Dec. 1	(k)	Dec. 20	168.9	Dec. 27	168.0
Mar. 2, 1936	140.1						

k Flowing.

1S/3-17C1. E. N. Smith. Known as Williams Well. Near Santa Ana River northwest of Redlands. Drilled observation well in alluvium of Recent age, diameter 10 inches, depth 110 feet. Land-surface datum is 1,150 feet above msl. Lowest water level 85.36 below lsd, Nov. 6, 1954. Records available: 1892-94, 1896, 1898-1954. Records furnished by Gage Canal Co.

Jan. 2	81.45	Apr. 3	70.62	July 3	73.20	Oct. 2	83.78
9	81.62	10	67.30	10	74.45	9	84.12
16	81.62	17	65.95	17	75.70	16	84.45
23	81.36	24	65.20	24	76.45	23	84.78
30	80.78	May 1	65.36	31	77.7	30	85.12
Feb. 6	79.95	8	65.78	Aug. 7	78.53	Nov. 6	85.36
13	79.70	15	66.62	14	79.45	13	84.78
20	77.53	22	67.62	21	81.36	20	84.78
27	76.20	29	68.53	28	81.12	27	85.20
Mar. 6	74.70	June 5	69.53	Sept. 4	81.53	Dec. 4	84.95
13	73.62	12	70.53	11	82.12	11	84.70
20	73.00	19	71.53	18	82.70	18	64.20
27	72.36	26	72.62	25	83.53	25	64,36

1S/3-23A2. Judson Street Mutual Water Co. In eastern part of Bunker Hill Basin northeast of Redlands. Drilled irrigation well in alluvium of Pleistocene age, diameter 20 inches, depth about 400 feet. Land-surface datum is about 1,495 feet above msl. Highest water level 191.5 below lsd, June 2, 1939; lowest 305.2 below lsd, June 15, 1954. Records available: 1930-32, 1934-54. Records furnished by San Bernardino Valley Water Conservation District.

1S/3-23A2--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 17, 1930	g243.2	Dec. 6, 1937	238.5	Mar. 5, 1942	195.0	May 31, 1948	233.6
May 8	g242.4	Mar. 1, 1938	231.2	Jan. 2, 1943	206.0	Jan. 18, 1949	247.0
Nov. 20, 1931	g265.9	June 1	209.6	May 28	200.3	Mar. 31	243.1
Dec. 12	g265.3	Sept. 1	206.7	Dec. 30	199.9	Oct. 29	264.5
Mar. 11, 1932	g260.1	Dec. 2	201.5	Apr. 2, 1944	195.1	Dec. 30	261.2
Oct. 16	g253.9	Mar. 1, 1939	197.6	Sept. 26	c203.2	Mar. 2, 1950	258.2
Dec. 17	g252.0	June 2	191.5	Jan. 3, 1945	197.9	Jan. 9, 1951	286.7
Oct. 24, 1934	g266.2	Aug. 31	196.0	Mar. 31	194.2	Mar. 8	272.6
Feb. 26, 1935	g262.6	Dec. 1	195.0	Oct. 9	203.1	Jan. 17, 1952	287.2
July 19	g261.5	Mar. 1, 1940	194.5	Jan. 10, 1946	201.0	Mar. 12	284.2
Dec. 30	266	June 1	196.2	Apr. 6	198.1	Oct. 27, 1953	293.2
Mar. 31, 1936	264.2	Oct. 1	206.9	Jan. 18, 1947	207.7	Dec. 30	290.7
June 1	262.8	Dec. 2	207.4	Apr. 11	210.6	Feb. 6, 1954	291.1
Oct. 30	268	Feb. 28, 1941	206.1	Oct. 20	231.0	Mar. 7	285.9
Dec. 24	266	May 1	199.5	Jan. 24, 1948	229.2	June 15	305.2
May 9, 1937	246.8	Sept. 3	202.7	Mar. 19	228.1	Nov. 23	291.1
Sept. 1	243.5	Dec. 1	198.7				

c Nearby well being pumped.
g Measurement by Hicks.

1S/3-32D1. Hinckley. Windmill well. Near San Timoteo Canyon west of Redlands. Drilled unused well in alluvium of Pleistocene(?) age, diameter 10 inches, depth 720 feet. Land-surface datum is 1,206.9 feet above msl. Highest water level 35.1 below lsd, Mar. 2, 1923; lowest 149.2 below lsd, Sept. 30, 1954. Records available: 1900, 1904-7, 1910-54. Records furnished by San Bernardino Valley Water Conservation District.

1900	g55.3	Mar. 2, 1918	n37.4	Sept. 19, 1929	j80.7	Aug. 22, 1940	90.7
July 1, 1904	g85.2	June 1	n40.5	Dec. 12	j76.9	Nov. 30	81.6
Sept. 1	g83.8	Oct. 11	j39.2	Mar. 13, 1930	j69.7	Mar. 6, 1941	73.9
Dec. 1	g80.1	Dec. 4	j38.0	May 12	j69.2	June 6	75.7
Jan. 1, 1905	g80.3	Mar. 11, 1919	n36.1	Sept. 5	j86.2	Sept. 4	79.7
Apr. 1	g78.3	June 28	n41.8	Dec. 6	j80.1	Dec. 31	67.6
June 1	g77.3	Oct. 12	n42.7	Mar. 16, 1931	j74.8	Mar. 5, 1942	65.3
Oct. 1	g78.6	Dec. 3	j41.2	June 9	j81.8	June 3	72.9
Dec. 1	g78.8	Mar. 27, 1920	n38.7	Sept. 4	j89.9	Sept. 1	77.5
Jan. 1, 1906	g78.7	July 15	n43.1	Dec. 22	j81.5	Nov. 29	72.4
July 1	g73.5	Nov. 18	n42.2	Mar. 23, 1932	j77.5	Mar. 1, 1943	67.4
Oct. 22	g75.0	Mar. 11, 1921	j40.3	June 29	j82.9	July 6	73.3
June 1, 1907	g66.4	June 2	n40.6	Sept. 30	j77.2	Aug. 5	76.8
Nov.	g70.6	Sept. 8	j46.7	Dec. 9	j85.0	Dec. 2	75.6
Apr. 28, 1910	j57.4	Dec. 8	j44.4	Mar. 3, 1933	j80.4	Mar. 30, 1944	60.3
June 11	j58.8	Mar. 21, 1922	n38.6	June 29	j86.4	June 3	68.5
Sept. 28	j62.6	July 8	j38.4	Sept. 7	j98.8	Sept. 28	78.3
Apr. 4, 1911	j54.9	Sept. 8	j39.9	Dec. 18	j88.5	Dec. 23	63.0
June 1	j56.3	Dec. 9	n37.0	Feb. 17, 1934	j88.1	Mar. 28, 1945	57.1
Aug. 8	j62.5	Mar. 2, 1923	j35.1	June 21	j95.7	June 6	66.0
Dec. 14	j55.9	July 6	j39.3	Sept. 19	j103.4	Sept. 7	76.6
Mar. 7, 1912	j56.0	Sept. 17	j40.5	Nov. 2	j96.4	Dec. 4	67.3
July 6	j55.7	Dec. 8	j39.3	Mar. 19, 1935	p89.3	Mar. 10, 1946	63.4
Sept. 5	j57.9	Mar. 5, 1924	j39.8	June 6	p99.4	June 12	73.8
Dec. 1	j59.0	July 10	j38.0	Sept. 6	p105.2	Aug. 15	80.4
Mar. 5, 1913	j60.0	Sept. 22	j46.8	Dec. 5	p104.8	Nov. 25	68.4
June 11	j58.8	Dec. 29	j43.2	Mar. 6, 1936	p96.1	Apr. 14, 1947	70.9
Oct. 18	j60.3	Mar. 6, 1925	j44.3	June 6	p105.1	June 19	80.0
Dec. 20	j57.0	Aug. 21	j55.8	Sept. 8	p112.0	Sept. 22	84.6
Mar. 24, 1914	j53.3	Oct. 22	j51.5	Dec. 9	p102.9	Oct. 23	80.9
July 7	j53.6	Dec. 28	j52.2	Mar. 9, 1937	p95.1	Mar. 13, 1948	75.1
Oct. 2	j54.5	Mar. 18, 1926	j50.9	June 4	p94.5	July 12	84.6
Dec. 4	j53.7	June 8	j54.6	Oct. 2	101.3	Sept. 6	87.3
Mar. 13, 1915	k48.8	Oct. 2	j57.9	Dec. 1	95.2	Dec. 3	c91.3
July 8	k51.8	Dec. 13	j54.8	Mar. 7, 1938	86.8	Mar. 3, 1949	71.9
Oct. 12	k49.4	Apr. 13, 1927	j50.1	May 30	84.9	June 1	86.4
Dec. 4	j53.7	June 6	j57.0	Sept. 29	91.9	Sept. 9	100.9
Mar. 10, 1916	k42.1	Sept. 7	j65.5	Dec. 31	82.2	Nov. 29	91.3
July 17	j42.0	Dec. 5	j57.8	Mar. 30, 1939	77.2	Mar. 1, 1950	79.4
Sept. 17	k40.6	Mar. 2, 1928	j51.8	June 1	82.3	June 14	98.1
Dec. 20	j39.6	Aug. 13	j70.1	Sept. 29	85.0	Sept. 8	106.7
Mar. 2, 1917	j37.8	Dec. 14	j63.4	Nov. 30	82.5	Dec. 12	101.1
July 30	n40.8	Mar. 13, 1929	j64.2	Mar. 22, 1940	74.9	Mar. 7, 1951	94.1
Dec. 12	j38.9	June 17	j74.3	June 4	83.1	June 15	115.0

1S/3-32D1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 7, 1951	122.4	Sept. 8, 1952	121.6	May 4, 1953	108.6	June 26,1954	131.3
Dec. 3	119.5	Dec. 5	111.7	Oct. 21	137.42	Sept. 30	149.2
Mar. 13, 1952	101.2	Mar. 3, 1953	107.1	Mar. 8, 1954	116.3	Dec. 29	g125.12
June 11	107.9						

c Nearby well being pumped.
g Measurement by U. S. Geol. Survey.
j Measurement by Water Conservation Association.
k Measurement by Haeslet.
n Measurement by W. P. Rowe.
p Measurement by San Bernardino City Water Department.

1S/4-1A6. Riverside Water Co., McCrary tract well 4. In Bunker Hill Basin east of San Bernardino. Drilled public-supply well in alluvium of Pleistocene age, diameter 10 inches, reported depth 648 feet. Land-surface datum is 1,096.0 feet above msl. Highest water level 51.94 above lsd, Mar. 25, 1917; lowest 44.15 below lsd, Sept. 3, 1954. Records available: 1915-54. Records furnished by owner.

Apr. 20, 1915	g+34.14	Apr. 13, 1927	j+35.13	Sept. 27, 1937	n+9.94	Feb. 15,1946	+32.76
June 22	g35.04	Dec. 25	j29.12	Dec. 29	n18.84	Jan. 23,1947	26.97
Sept. 13	g29.34	Mar. 3, 1928	j36.05	Mar. 31, 1938	n26.96	Apr. 9	26.96
Dec. 23	g41.74	Dec. 14	j23.81	Apr. 29	n27.54	Nov. 5,1948	n7.98
Mar. 22, 1916	g51.74	Mar. 21, 1929	j22.89	Jan. 24, 1939	n28.86	Jan. 3,1949	p7.98
Nov. 30	g51.04	Mar. 13, 1930	j17.11	Mar. 24	n31.76	Mar. 4	p17.73
Mar. 25, 1917	g51.94	June 12	j17.11	Jan. 5, 1940	n26.96	Mar. 3,1950	+7.34
Dec. 4, 1918	g41.34	Dec. 6	j13.44	Mar. 2	n31.56	July 14	-11.05
Mar. 12, 1919	g43.64	Mar. 18, 1931	j14.94	Nov. 1	n20.06	Oct. 17	14.15
May 30	g36.64	May 11	j7.87	Dec. 2	n22.36	Dec. 29	11.65
Nov. 5	g39.44	Mar. 24, 1932	j10.18	Mar. 6, 1941	n31.56	Feb. 2,1951	6.55
Mar. 27, 1920	g46.94	Dec. 13	j9.04	June 2	n26.96	June 9	17.35
May 12	g40.24	Nov. 16, 1933	j4.41	Sept. 3	n25.56	Sept. 7	27.25
Mar. 14, 1921	j42.74	Dec. 20	j5.54	Jan. 4, 1942	n35.06	Dec. 7	21.55
June 3	j40.24	Mar. 11, 1934	j6.02	Mar. 7	n32.16	Mar. 7,1952	13.75
Dec. 10	j35.82	July 18	j7.74	July 2	n11.96	June 6	17.85
Mar. 9, 1922	j42.52	Sept. 16	j+8.14	Nov. 29	n22.36	Sept. 12	27.35
June 3	j42.52	Dec. 17	j-4.06	Mar. 7, 1943	n34.46	Dec. 5	16.35
Sept. 17, 1923	j(k)	Mar. 11, 1935	j+6.02	Apr. 2	n35.06	Mar. 6,1953	14.75
Mar. 17, 1924	j37.90	July 18	j+7.74	Sept. 4	23.46	June 5	23.45
Sept. 12	j28.66	Dec. 17	j-4.06	Dec. 6	26.96	Sept. 4	43.05
Dec. 29	j38.36	Mar. 16, 1936	n+2.07	Mar. 3, 1944	34.46	Dec. 5	30.95
Apr. 15, 1925	j35.82	June 20	n-6.36	June 2	25.86	Mar. 5,1954	28.85
May 25	j30.97	Sept. 17	n-7.26	Dec. 28	35.06	June 4	32.35
Dec. 30	j32.82	Dec. 19	n-.36	Mar. 28, 1945	38.52	Sept. 3	44.15
Apr. 20, 1926	j32.82	Mar. 18, 1937	n+9.94	June 25	21.89	Dec. 3	28.55
Dec. 13	j28.66	June 2	n+12.54	Dec. 29	31.56		

g Measurement by W. P. Rowe.
j Measurement by Water Conservation Association.
k Flowing.
n Measurement by San Bernardino City Water Department.
p Measurement by San Bernardino Valley Water Conservation District.

1S/4-15A1. Philippi Quiroz. Drilled domestic well in alluvium of Pleistocene and Recent age, diameter 10 inches, reported depth 500 feet. Land-surface datum is about 1,008 feet above msl. Highest water level 81.3 above lsd, Mar. 5, 1917; lowest 5.70 below lsd, Sept. 9, 1954. Records available: 1915-54. Records furnished by San Bernardino City Water Department.

Apr. 6, 1915	g+76.7	Mar. 12, 1920	k+77.4	Dec. 29, 1924	k+66.3	June 17,1929	k+33.1
July 18	j60.2	May 7	k72.2	Mar. 6, 1925	k62.8	Sept. 16	k17.9
Nov. 26	j64.4	Oct. 4	k50.7	July 24	k43.2	Dec. 12	k27.5
Jan. 13, 1916	j80.2	Dec. 9	k61.7	Sept. 23	k45.3	Feb. 8,1930	k60.0
July 18	k68.6	Feb. 16, 1921	k72.8	Dec. 28	k58.2	May 12	k52.8
Sept. 12	k67.7	June 3	k68.6	Feb. 19, 1926	k66.3	Sept. 4	k34.0
Dec. 23	k73.7	Nov. 3	k59.3	July 16	k43.2	Dec. 6	k45.0
Mar. 5, 1917	k81.3	Feb. 2, 1922	k74.4	Oct. 2	k41.1	Feb. 18,1931	k54.5
July 9	k58.0	June 3	k65.2	Dec. 15	k50.2	June 11	k32.2
Dec. 6	k66.0	Nov. 4	k63.8	Mar. 15, 1927	k40.8	Sept. 5	k34.0
Feb. 5, 1918	k73.0	Mar. 8, 1923	k72.2	June 6	k46.0	Nov. 5	k31.7
May 8	k59.3	May 10	k59.4	Nov. 3	k53.8	Mar. 23,1932	k47.9
Dec. 5	k72.5	Oct. 5	k54.8	Mar. 3, 1928	k58.2	June 29	k33.8
Feb. 5, 1919	k73.7	Dec. 8	k66.3	Oct. 8	k39.8	Sept. 29	k20.2
July 10	k47.8	Apr. 7, 1924	k73.4	Dec. 14	k54.7	Dec. 10	k35.9
Dec. 15	k75.5	Aug. 22	k47.2	Feb. 14, 1929	k61.9	Mar. 3,1933	k50.5

1S/4-15A1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 29, 1933	k+17.8	Sept. 1, 1938	+36.3	Mar. 13, 1944	+71.0	Apr. 25, 1949	n+38.7
Sept. 7	k19.0	Dec. 6	43.3	June 28	41.0	Sept. 9	27.1
Dec. 18	k43.3	Feb. 1, 1939	56.6	Oct. 4	34.0	Dec. 13	36.92
Feb. 17, 1934	k37.0	May 31	34.6	Apr. 16, 1945	63.5	Feb. 21, 1950	57.13
June 21	k24.8	Sept. 1	23.6	June 10	46.7	Dec. 20	29.41
Sept. 19	k13.2	Nov. 30	31.7	Aug. 13	38.6	Mar. 10, 1951	36.92
Nov. 2	k29.9	Mar. 1, 1940	46.7	Oct. 17	33.5	Oct. 1	11.60
Mar. 11, 1935	k47.9	June 4	34.2	Mar. 25, 1946	46.7	Dec. 1	21.33
June 19	k51.3	Aug. 29	25.4	Aug. 29	27.1	Mar. 20, 1952	45.58
Sept. 16	k43.3	Dec. 20	50.2	Dec. 13	52.5	July 7	16.71
Dec. 17	k59.5	July 17, 1941	33.4	Mar. 25, 1947	41.0	Nov. 3	13.24
Mar. 16, 1936	k38.5	Sept. 2	49.6	June 12	34.6	Jan. 26, 1953	40.96
June 20	k20.0	Dec. 17	64.6	Sept. 15	30.0	Apr. 3	15.55
Sept. 17	k13.0	Mar. 4, 1942	54.8	Dec. 20	57.1	Nov. 12	2.30
Mar. 21, 1937	20.7	Dec. 28	56.0	Apr. 6, 1948	49.0	Mar. 16, 1954	+14.40
June 4	36.3	Mar. 22, 1943	69.8	June 29	38.1	July 23	-3.30
Sept. 29	28.2	June 9	41.5	Nov. 10	35.2	Sept. 9	5.70
Dec. 31	20.7	Nov. 11	47.9	Feb. 8, 1949	50.2	Oct. 21	3.60

g Measurement by Riverside Water Co.
j Measurement by Gage Canal Co.
k Measurement by Water Conservation Association.
n Measurement by San Bernardino Valley Water Conservation District.

1S/4-15M2. Meeks & Daley Water Co. South E St. well. In Bunker Hill Basin near Warm Creek south of San Bernardino. Drilled irrigation well in alluvium of Pleistocene and Recent age, diameter 20 inches, reported depth 603 feet. Land-surface datum is about 980 feet above msl. Highest water level 1.2 below lsd, Mar. 13, 1944; lowest 20.10 below lsd, May 22, 1953. Records available: 1933-54. Records furnished by San Bernardino City Water Department.

June 14, 1933	6.98	Sept. 1, 1938	4.8	Dec. 23, 1942	4.3	Apr. 8, 1948	4.4
Aug. 31	9.28	Dec. 30	3.5	Mar. 15, 1943	1.6	Feb. 9, 1949	2.6
Nov. 9	7.08	Mar. 30, 1939	3.7	Sept. 20	6.6	Apr. 25	5.85
Mar. 7, 1934	2.78	June 1	5.1	Mar. 13, 1944	1.2	Feb. 22, 1950	2.85
June 4	10.18	Sept. 1	6.8	June 28	4.9	Apr. 25	6.90
Nov. 7	8.68	Nov. 30	4.8	Aug. 10	6.1	Mar. 10, 1951	5.75
Mar. 19, 1935	3.68	Mar. 1, 1940	2.0	Nov. 22	2.4	May 11	8.80
June 6	8.98	June 10	5.2	Apr. 11, 1945	2.1	Mar. 20, 1952	3.90
Nov. 15	11.48	Aug. 29	8.1	June 12	4.6	July 7	15.70
Feb. 7, 1936	5.48	Dec. 20	2.8	Oct. 19	5.2	Jan. 27, 1953	5.60
Dec. 10	8.55	Mar. 11, 1941	2.0	Aug. 29, 1946	7.2	May 22	20.10
Mar. 10, 1937	4.45	July 18	5.0	Dec. 13	3.0	July 9	18.90
June 4	7.4	Dec. 17	2.3	Mar. 26, 1947	5.0	Feb. 4, 1954	9.30
Dec. 31	5.1	Mar. 4, 1942	3.7	June 12	6.6	Mar. 18	8.50
Mar. 31, 1938	2.2	May 8	4.4	Sept. 15	7.1	Dec. 17	11.00
June 4	4.1	Aug. 12	5.7	Dec. 20	2.6		

1S/4-21A1. City of San Bernardino, sewage plant well. South of San Bernardino near Colton narrows. Drilled industrial well in alluvium of Recent age, diameter 10 inches, reported depth 292 feet. Land-surface datum is 970.2 feet above msl. Highest water level 16.2 above lsd, Mar. 13, 1944, Apr. 11, 1945; lowest 27.72 below lsd, Dec. 22, 1953. Records available: 1939-54. Records furnished by owner.

Mar. 30, 1939	+12.8	July 6, 1942	+8.1	Mar. 25, 1946	+8.7	Mar. 10, 1951	+6.38
July 10	10.4	Aug. 12	9.3	May 29	9.4	May 11	+3.78
Sept. 1	5.0	Dec. 23	9.9	Dec. 13	11.0	Dec. 1	-12.92
Nov. 30	9.3	Mar. 22, 1943	13.3	Mar. 26, 1947	10.2	Mar. 20, 1952	+14.32
Mar. 1, 1940	14.5	June 9	4.3	June 12	5.08	May 9	+12.01
June 4	9.9	Sept. 20	6.6	Sept. 12	5.28	Jan. 27, 1953	+8.55
Aug. 29	3.2	Nov. 11	10.4	Apr. 9, 1948	+9.28	May 22	-.92
Dec. 20	12.2	Mar. 13, 1944	16.2	Feb. 9, 1949	-1.82	Nov. 12	-26.12
Mar. 11, 1941	15.6	June 28	11.0	Apr. 26	+5.95	Dec. 22	-27.72
July 18	b8.1	Nov. 22	15.1	Dec. 13	+7.39	Mar. 18, 1954	+1.58
Sept. 2	11.0	Apr. 11, 1945	16.2	Apr. 25, 1950	+6.28	June 10	-17.92
Dec. 17	15.1	June 12	11.6	Sept. 26	-6.88	Oct. 20	c72.42
Mar. 4, 1942	13.3	Oct. 19	10.4	Nov. 7	-7.62	Dec. 17	8.32

b Pumped recently.
c Nearby well being pumped.

1S/4-29H2. Riverside Water Co., flume 1. South of Colton in Rialto-Colton Basin. Drilled irrigation well in alluvium of Pleistocene and Recent age, diameter 20 inches, reported depth 189 feet. Land-surface datum is about 934 feet above msl. Highest water level 3.5 below lsd, June 3, 1938; lowest 85.1 below lsd, Oct. 20, 1934. Records available: 1928-54. Records furnished by owner.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 7, 1928	64.0	Mar. 6, 1936	56.0	Dec. 4, 1942	19.1	Dec. 17, 1948	36.3
Sept. 1	55.5	May 1	55.5	Mar. 3, 1943	4.2	Mar. 25, 1949	7.5
Oct. 5, 1929	54.5	Dec. 4	77.0	June 4	5.1	June 3	46.4
Dec. 7	54.5	Mar. 5, 1937	33.8	Sept. 3	25.1	Sept. 2	48.2
Mar. 1, 1930	24.7	June 4	8.8	Nov. 5	26.9	Dec. 30	31.5
May 10	14.5	Dec. 30	42.9	Mar. 24, 1944	4.6	Mar. 10, 1950	9.75
Aug. 2	80.5	Feb. 4, 1938	23.5	June 30	10.2	May 26	29.57
Nov. 22	46.3	June 3	3.5	Sept. 29	22.0	Oct. 20	59.45
Apr. 4, 1931	30.0	Sept. 2	28.6	Dec. 30	6.0	Dec. 29	49.40
Sept. 12	59.5	Dec. 30	13.8	Mar. 30, 1945	4.4	Mar. 16, 1951	26.00
Nov. 28	45.5	Mar. 3, 1939	6.4	June 30	12.0	May 18	41.60
Mar. 5, 1932	10.4	June 9	21.0	Sept. 21	18.4	Dec. 21	61.00
June 4	34.3	Sept. 15	43.0	Dec. 21	13.4	Mar. 14, 1952	13.00
Aug. 6	54.6	Dec. 1	31.5	Mar. 22, 1946	6.5	June 6	26.90
Dec. 31	55.5	Mar. 1, 1940	7.3	June 14	11.7	Sept. 12	53.80
Mar. 18, 1933	29.9	June 7	21.7	Sept. 13	29.5	Dec. 29	28.20
May 6	38.8	Oct. 4	42.2	Dec. 14	7.4	Mar. 13, 1953	32.55
Oct. 14	74.6	Dec. 6	25.5	Mar. 14, 1947	5.9	June 5	49.70
Dec. 2	74.4	Mar. 7, 1941	5.7	June 6	13.2	Oct. 16	74.40
Mar. 3, 1934	32.5	June 6	6.2	Sept. 5	53.9	Dec. 11	71.8
Oct. 20	85.1	Sept. 12	18.4	Dec. 12	19.6	Mar. 5, 1954	42.80
Dec. 29	57.4	Dec. 5	5.7	Mar. 5, 1948	7.5	May 7	42.00
Mar. 2, 1935	25.3	Mar. 6, 1942	5.3	June 5	18.5	Oct. 15	75.10
Oct. 5	77.3	June 5	9.4	Sept. 17	44.8	Dec. 17	62.5
Dec. 7	79.3	Sept. 11	28.0				

1S/5-2K1. Lytle Creek Water & Improvement Co., Willow Street well. In Rialto-Colton Basin near Rialto. Drilled irrigation well in alluvium of Pleistocene age, diameter 20 inches, reported depth 828 feet. Land-surface datum is about 1,287 feet above msl. Highest water level 220 below lsd, Dec. 4, 1944; lowest 274.5 below lsd, Oct. 26, Dec. 7, 1936. Records available: 1931-37, 1940-54. Records furnished by owner.

Jan. 5, 1931	244.0	Sept. 2, 1937	272.1	Mar. 7, 1944	240	Dec. 6, 1948	238.9
Mar. 2	244.0	Dec. 6	272.5	June 6	242	Mar. 7, 1949	238.1
Dec. 7	249.9	Jan. 1, 1940	264.1	Sept. 4	230	Nov. 7	244.6
Mar. 7, 1932	252.8	Mar. 4	263.1	Dec. 4	220	Dec. 19	243.5
Dec. 19	259.2	June 3	263.1	Mar. 5, 1945	241.2	Mar. 6, 1950	242.3
Mar. 6, 1933	256.8	Sept. 12	263.1	June 11	240.5	May 29	267.1
May 22	264.3	Dec. 2	263.5	Sept. 3	238.3	Dec. 4	260.0
Dec. 25	262.5	Mar. 3, 1941	263.5	Dec. 3	236.0	Mar. 12, 1951	248
Mar. 5, 1934	261.5	June 2	260.0	Mar. 4, 1946	235.0	May 7	257.7
June 4	262.7	Sept. 1	258.0	June 6	234	Dec. 17	263.3
Oct. 18	270.0	Dec. 1	257	Sept. 2	236	Mar. 10, 1952	260.1
Dec. 3	270.3	Mar. 2, 1942	257	Dec. 2	236.5	May 5	261.1
Mar. 2, 1935	270.3	June 1	252	Mar. 3, 1947	235	Dec. 29	264.0
Apr. 29	270.3	Sept. 7	252	June 2	235.0	Mar. 2, 1953	262.0
Dec. 2	271.1	Dec. 7	251	Sept. 1	236	June 1	269.0
Mar. 2, 1936	270.3	Mar. 1, 1943	251	Dec. 1	236.5	Dec. 28	269.0
Oct. 26	274.5	June 7	249	Mar. 1, 1948	235	Mar. 1, 1954	267.0
Dec. 7	274.5	Sept. 6	249	June 1	235	June 7	269.0
Mar. 1, 1937	272.9	Dec. 6	249	Sept. 6	236	Dec. 27	271.0
June 7	271.6						

*1S/5-22E1. Citizens Land & Water Co. In Chino Basin at Bloomington. Drilled unused well in alluvium of Pleistocene age, diameter 14 inches, depth 620 feet. Land-surface datum is 1,107.0 feet above msl. Highest water level 236.8 below lsd, Oct. 7, 1927; lowest 259.99 below lsd, Dec. 1, 1954. Records available: 1927-54.

Oct. 7, 1927	g236.8	May 1, 1930	g241.9	Mar. 1, 1933	n248.9	Sept. 14, 1935	g254.6
Dec. 7	g237.2	Aug. 7	g243.1	June 1	n249.4	Dec. 16	g255.4
May 10, 1928	g237.0	Nov. 10	g244.4	Oct. 6	n250.1	Mar. 17, 1936	g255.7
July 5	g237.3	Mar. 9, 1931	g244.3	Dec. 8	n250.5	June 15	g256.3
Sept. 18	g238.0	June 9	g244.8	Mar. 16, 1934	g250.1	Sept. 15	g257.3
Dec. 4	g238.6	Dec. 19	g246.8	June 15	g250.9	Dec. 17	g258.0
Mar. 1, 1929	g238.7	Mar. 15, 1932	n247.0	Sept. 17	g252.1	Mar. 14, 1937	g258.2
July 10	g239.4	June 22	n247.3	Dec. 17	g252.8	June 14	g258.1
Sept. 11	g240.5	Sept. 17	n247.7	Mar. 18, 1935	g253.0	Sept. 14	g258.4
Jan. 29, 1930	g241.8	Dec. 5	n248.3	June 17	g253.5	Dec. 14	g258.5

1S/5-22E1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 14, 1938	g257.9	June 15, 1942	g251.1	Sept. 21, 1946	g245.6	Mar. 2, 1951	248.76
June 17	g257.3	Sept. 14	g251.2	Dec. 21	g245.1	June 1	250.00
Sept. 16	g257.3	Dec. 15	g250.9	Mar. 22, 1947	g244.6	Sept. 3	252.68
Dec. 17	g256.6	May 17, 1943	g250.1	June 20	g244.3	Nov. 2	253.41
Mar. 17, 1939	g255.6	July 17	g250.3	Sept. 22	g245.0	Mar. 4, 1952	253.30
June 14	g254.9	Sept. 15	g250.4	Dec. 26	p244.8	June 5	253.36
Sept. 17	g254.7	Dec. 16	g250.0	Mar. 20, 1948	p244.3	Sept. 4	254.24
Dec. 16	g254.2	Mar. 17, 1944	g249.1	June 18	p244.3	Oct. 31	254.89
Mar. 17, 1940	g253.6	June 14	g248.6	Sept. 25	p245.5	Mar. 2, 1953	254.21
June 17	g253.3	Sept. 16	g248.5	Dec. 28	p245.4	June 1	254.68
Sept. 16	g253.6	Dec. 18	g248.0	Apr. 23, 1949	p244.6	Sept. 30	256.58
Dec. 17	g253.4	Mar. 19, 1945	g247.1	June 29	p245.5	Dec. 2	256.96
Mar. 15, 1941	g253.0	June 16	g246.4	Nov. 2	247.10	Mar. 1, 1954	257.04
June 17	g252.6	Sept. 17	g246.3	Mar. 1, 1950	246.6	June 1	257.59
Sept. 20	g252.7	Dec. 15	g245.9	June 2	246.93	Sept. 2	259.54
Dec. 14	g252.4	Mar. 18, 1946	g245.2	Sept. 5	248.45	Dec. 1	259.99
Mar. 16, 1942	g251.9	June 16	g245.1	Dec. 7	248.84		

g Measurement by Riverside Cement Co.
n Measurement by C. A. Smith.
p Measurement by W. P. Rowe.

San Diego County

San Luis Rey River Basin

10/1W-8P1. H. N. Berger. Pauma Valley. Drilled unused water-table well in alluvium of Recent age, diameter 14 inches, depth 198 feet. Land-surface datum is about 725 feet above msl. Highest water level 10.28 below lsd, May 14, 1954; lowest 18.76 below lsd, Nov. 12, 1954. Records available: 1954. Jan. 8, 17.38; Feb. 23, 14.36; May 14, 10.28; Aug. 31, 17.14; Nov. 12, 18.76.

10/2W-6F2. San Luis Rey Ranch. In Monserate Narrows, near gaging station. Drilled unused water-table well in alluvium of Recent age, diameter 12 inches, depth 109 feet. Land-surface datum is 282.36 feet above msl. Highest water level 5.16 below lsd, Mar. 15, 1943; lowest 14.10 below lsd, Nov. 19, 1953. Records available: 1937-54. Feb. 23, 8.64; May 14, 8.98; Aug. 31, 10.52; Nov. 12, 13.52.

10/3W-11G1. Fallbrook Public Utility District. Near Bonsall. Drilled unused water-table well in alluvium of Recent age, diameter 8 inches, depth 66 feet. Land-surface datum is 236.91 feet above msl. Highest water level 2.33 below lsd, Mar. 15, 1943; lowest 20.57 below lsd, Dec. 15, 1953. Records available: 1939-54. Feb. 23, 19.76; May 14, 10.69; Aug. 31, 15.10; Nov. 12, 16.56.

10/3W-16F1. San Luis Rey Mutual Heights Water Co. In well field at intersection of Bonsall and Monserate Rds. Drilled unused water-table well in alluvium of Recent age, diameter 12 inches, depth 59 feet. Land-surface datum is about 190 feet above msl. Highest water level 31.27 below lsd, May 14, 1954; lowest 39.90 below lsd, Nov. 12, 1954. Records available: 1953-54. Dec. 15, 1953, 39.30; Feb. 23, 1954, 32.06; May 14, 31.27; Aug. 31, 38.55; Nov. 12, 39.90.

10/3W-30K1. Fallbrook Public Utility District. Near Bonsall. Drilled unused water-table well in alluvium of Recent age, diameter 8 inches, reported depth 80 feet. Land-surface datum is 149.76 feet above msl. Highest water level 6.09 below lsd, Mar. 17, 1941; lowest 19.30 below lsd, Nov. 12, 1954. Records available: 1939-54. Feb. 23, 18.09; May 14, 17.52; Aug. 31, 18.55; Nov. 12, 19.30.

11/4W-2D1. Winston Properties. Near San Luis Rey. Drilled irrigation water-table well in alluvium of Recent age, diameter 12 inches, reported depth 110 feet. Land-surface datum is about 95 feet above msl. Highest water level 36.69 below lsd, Feb. 23, 1954; lowest 50.70 below lsd, Nov. 12, 1954. Records available: 1953-54. Dec. 15, 1953, 37.52; Feb. 23, 1954, 36.69; May 14, 37.80; Nov. 12, 50.70.

11/4W-9F1. City of Oceanside. Near San Luis Rey. Drilled observation well in alluvium of Recent age, diameter 4 inches, reported depth 199 feet. Land-surface datum is about 63 feet above msl. Highest water level 3.47 below lsd, Mar. 14, 1943; lowest 56.60 below lsd, Nov. 1, 1954. Records available: 1940-54. Records furnished by city of Oceanside.

Jan. 4	52.18	Apr. 1	51.18	July 5	49.43	Oct. 4	56.43
Feb. 1	51.93	May 3	51.27	Aug. 2	54.27	Nov. 1	56.60
Mar. 1	51.60	June 7	52.27	Sept. 6	55.27	Dec. 6	56.52

11/4W-18C2. Robert Slaught. Near San Luis Rey. Drilled unused artesian well in alluvium of Recent age, diameter 12 inches, reported depth 134 feet. Land-surface datum is about 37 feet above msl. Highest water level 34.72 below lsd, Mar. 4, 1952; lowest 61.59 below lsd, Aug. 31, 1954. Records available: 1952-54. Water levels below sea level. Jan. 8, 52.61; Feb. 23, 46.78; May 14, 54.42; Aug. 31, 61.59; Nov. 12, 57.97.

11/4W-18L3. Carlsbad Mutual Water Co. Near Oceanside. Drilled observation artesian well in alluvium of Recent age, diameter 6 inches, reported depth 115 feet. Land-surface datum is 35.34 feet above msl. Highest water level 5.97 below lsd, Apr. 14, 1941; lowest 64.35 below lsd, May 14, 1954. Records available: 1939-54. Records furnished by Carlsbad Mutual Water Co. Water levels below sea level. Feb. 23, 54.45; May 14, 64.35; Aug. 31, 63.98; Nov. 12, 55.70.

11/5W-13N1. City of Oceanside. Near airport. Drilled unused artesian well in alluvium of Recent age, diameter 14 inches, depth 160 feet. Land-surface datum is 16.26 feet above msl. Highest water level 1.61 below lsd, Mar. 15, 1943; lowest 25.92 below lsd, Aug. 2, 1954. Records available: 1939-54. Records furnished by city of Oceanside. Water levels below sea level.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	23.50	Apr. 1	21.67	July 5	24.50	Oct. 4	25.83
Feb. 1	22.75	May 3	23.08	Aug. 2	25.92	Nov. 1	25.83
Mar. 1	23.17	June 7	24.92	Sept. 6	25.83	Dec. 6	24.92

San Dieguito River Basin

12/1W-31H2. City of San Diego. San Pasqual Valley. Drilled domestic water-table well in alluvial deposits, diameter 12 inches, depth 46 feet. Land-surface datum is 357.4 feet above msl. Highest water level 3.59 below lsd, Feb. 22, 1933; lowest 13.90 below lsd, Nov. 12, 1954. Records available: 1929-54. Feb. 23, 11.94; May 14, 10.67; Aug. 23, 13.17; Nov. 12, 13.90.

12/1W-33J1. F. B. Gierman. San Pasqual Valley. Dug concrete-lined unused water-table well in alluvium of Recent age, diameter 10 inches, depth 17 feet. Land-surface datum is 391.8 feet above msl. Highest water level 0.00, Mar. 30, 1944; lowest 7.30 below lsd, Nov. 24, 1953. Records available: 1943-54. Feb. 23, 5.74; May 14, 4.55; Aug. 23, 6.00; Nov. 12, 5.64.

12/1W-35F1. San Pasqual Academy. Near San Pasqual. Drilled unused water-table well in alluvium of Recent age, diameter 8 inches, depth 37 feet. Land-surface datum is about 430 feet above msl. Highest water level 6.17 below lsd, May 22, 1946; lowest 23.74 below lsd, Jan. 7, 1952. Records available: 1945-54. Feb. 23, 19.48; May 14, 14.60; Aug. 23, 17.03; Nov. 12, 19.03.

13/2W-1J1. Owner unknown. Near upstream end at Lake Hodges near gaging station. Drilled unused water-table well in alluvium of Recent age, diameter 14 inches, depth 86 feet. Land-surface datum is about 335 feet above msl. Highest water level 2.27 below lsd, May 14, 1954; lowest 6.67 below lsd, Dec. 7, 1953. Records available: 1953-54. Dec. 7, 1953, 6.67; Feb. 23, 1954, 6.25; May 14, 2.27; June 1, 4.29; July 1, 4.72; Aug. 2, 5.20; Aug. 23, 5.49; Nov. 12, 6.10.

13/3W-33C1. Owner unknown. Near Rancho Santa Fe. Drilled unused water-table well in alluvium of Recent age, diameter 12 inches, depth 66 feet. Land-surface datum is about 40 feet above msl. Highest water level 30.88 below lsd, Dec. 7, 1953; lowest 32.00 below lsd, Nov. 12, 1954. Records available: 1953-54. Dec. 7, 1953, 30.88; Feb. 23, 1954, 31.13; May 14, 31.17; Aug. 23, 31.35; Nov. 12, 32.00.

13/3W-33M1. Griset Bros. Near Rancho Santa Fe. Drilled unused water-table well in alluvium of Recent age, diameter 12 inches, depth 90 feet. Land-surface datum is about 35 feet above msl. Highest water level 28.22 below lsd, Jan. 8, 1954; lowest 38.47 below lsd, Aug. 23, 1954. Records available: 1954. Jan. 8, 28.22; Feb. 23, 34.61; May 14, 34.25; Aug. 23, 38.47, water level below sea level; Nov. 12, 36.80, water level below sea level.

14/3W-7C1. Walter Connelly. Near Del Mar. Drilled unused artesian well in alluvium of Recent age, diameter 10 inches, depth 80 feet. Land-surface datum is about 15 feet above msl. Highest water level 7.66 below lsd, Feb. 23, 1954; lowest 19.50 below lsd, May 14, 1954. Records available: 1953-54. Dec. 7, 1953, 9.54; Jan. 8, 1954, 12.45, nearby well being pumped; Feb. 23, 7.66; May 14, 19.50, water level below sea level.

San Diego River Basin

15/1E-10L1. Foster Dairy. Near El Monte Park. Drilled irrigation water-table well in alluvium of Recent age, diameter 12 inches, reported depth 110 feet. Land-surface datum is about 470 feet above msl. Highest water level 27.96 below lsd, Aug. 18, 1948; lowest 41.35 below lsd, Nov. 10, 1954. Records available: 1948-54. Feb. 24, 37.40; May 18, 38.15; Nov. 10, 41.35.

15/1E-17H6. La Mesa Lemon Grove and Spring Valley Irrigation District. Near Lakeside. Drilled unused water-table well in alluvium of Recent age, diameter 14 inches, depth 61 feet, perforations 39-61. Land-surface datum is 434.4 feet above msl. Highest water level 0.2 below lsd, May 18, 1930; lowest 59.60 below lsd, Aug. 24, 1954. Records available: 1929-32, 1934-54. Feb. 24, 49.73; May 18, 55.43; Aug. 24, 59.60; Nov. 10, 57.35.

15/1W-24D7. City of San Diego. Near Lakeside. Drilled unused water-table well in alluvium of Recent age, diameter 14 inches, depth 45 feet. Land-surface datum is 371.4 feet above msl. Highest water level 0.04 above lsd, May 10, 1941; lowest 42.80 below lsd, Nov. 10, 1954. Records available: 1937-54. Feb. 24, 32.00; May 18, 31.45; Aug. 24, 41.00; Nov. 10, 42.80.

15/1W-28B1. Dr. Good. Near Santee. Drilled unused water-table well in alluvium of Recent age, diameter 10 inches, depth 39 feet. Land-surface datum is 336.5 feet above msl. Highest water level 6.48 below lsd, Mar. 10, 1915; lowest 22.36 below lsd, Aug. 24, 1954. Records available: 1915, 1919-54. Feb. 24, 20.08; May 18, 19.87; Aug. 24, 22.36; Nov. 10, 22.30.

16/2W-19D1. Woodward Sand Co. Mission Valley. Drilled unused water-table well in alluvium of Recent age, diameter 6 inches, depth 57 feet. Land-surface datum is 47.2 feet above msl. Highest water level 15.40 below lsd, May 18, 1954; lowest 21.97 below lsd, Dec. 30, 1953. Records available: 1953-54. Dec. 30, 1953, 21.97; Feb. 23, 1954, 20.08; May 18, 15.40; Aug. 24, 17.93; Nov. 10, 19.39.

16/3W-21R1. Beratino. Near San Diego. Drilled domestic water-table well in alluvium of Recent age, diameter 8 inches, depth 27 feet. Land-surface datum is about 15 feet above msl. Highest water level 8.20 below lsd, Aug. 24, 1954; lowest 10.80 below lsd, Dec. 9, 1953. Records available: 1953-54. Dec. 9, 1953, 10.80; Feb. 23, 1954, 9.86; May 18, 9.09; Aug. 24, 8.20; Nov. 10, 10.26.

18/3W-23K3. S. H. McIntosh. Mission Valley. Driven observation water-table well in alluvium of Recent age, diameter 2 inches, depth 20 feet. Land-surface datum is 26.8 feet above msl. Highest water level 4.76 below lsd, Mar. 11, 1937; lowest 15.33 below lsd, Oct. 11, 1951. Records available: 1927-54. Feb. 23, 11.72; May 18, 9.82; Aug. 24, 12.70; Nov. 10, 14.42.

Sweetwater River Basin

17/1W-19Q2. California Water & Telephone Co. Near Sunnyside. Drilled unused water-table well in alluvium of Recent age, diameter 12 inches, depth 40 feet. Land-surface datum is about 85 feet above msl. Highest water level 1.51 below lsd, Dec. 23, 1943; lowest 38.29 below lsd, Dec. 28, 1949. Records available: 1943-54. Feb. 23, 9.06; May 18, 5.70; Aug. 30, 7.39; Nov. 10, 7.74.

17/2W-35E1. Owner unknown. Near Chula Vista. Drilled domestic well in alluvium of Recent age, diameter 12 inches, depth 58 feet. Land-surface datum is about 35 feet above msl. Highest water level 8.62 below lsd, Nov. 10, 1954; lowest 12.55 below lsd, Dec. 30, 1953. Records available: 1953-54. Dec. 30, 1953, 12.55; Feb. 23, 1954, 11.98; May 18, 10.54; Aug. 30, 10.65; Nov. 10, 8.62.

Otay River Basin

18/1W-19D1. W. Ellerson. Near Otay. Drilled domestic water-table well in marine sand and gravel of Pliocene age, diameter 10 inches, reported depth 182 feet. Land-surface datum is about 130 feet above msl. Highest water level 55.40 below lsd, May 18, 1954; lowest 59.68 below lsd, Nov. 10, 1954. Records available: 1953-54. Dec. 9, 1953, 56.58; Feb. 24, 1954, 59.35; May 18, 55.40; Nov. 10, 59.68.

18/2W-22F1. Western Aire Motel. Near Otay. Drilled domestic well in alluvium of Recent age, diameter 10 inches, reported depth 150 feet. Land-surface datum is about 40 feet above msl. Highest water level 18.40 below lsd, Apr. 10, 1922; lowest 45.20 below lsd, Nov. 10, 1954. Records available: 1916-54. Feb. 24, 36.80; May 18, 35.05; Aug. 30, 41.95, water level below sea level; Nov. 10, 45.20, water level below sea level.

Tia Juana River Basin

18/2W-33L1. Robert Egger. Near Nestor. Driven observation water-table well in alluvium of Recent age, diameter 2 inches, depth 29 feet. Land-surface datum is 19.04 feet above msl. Highest water level 5.16 below lsd, May 15, 1941; lowest 22.43 below lsd, Nov. 10, 1954. Records available: 1927-54. Feb. 24, 18.75; May 18, 19.32, water level below sea level; Aug. 30, 21.58, water level below sea level; Nov. 10, 22.43, water level below sea level.

18/2W-34J1. C. Iguchi. Near Nestor. Driven observation water-table well in alluvium of Recent age, diameter 2 inches, depth 28 feet. Land-surface datum is 30.97 feet above msl. Highest water level 3.01 below lsd, Jan. 26, 1944; lowest 24.24 below lsd, Nov. 10, 1954. Records available: 1927-54. Feb. 24, 21.80; May 18, 19.15; Aug. 30, 22.42; Nov. 10, 24.24.

19/2W-1N1. State of California. Near San Ysidro. Drilled observation water-table well in alluvium of Recent age, diameter 8 inches, depth 68 feet. Land-surface datum is about 50 feet above msl. Highest water level 8.32 below lsd, May 18, 1954; lowest 12.40 below lsd, Nov. 10, 1954. Records available: 1953-54. Dec. 9, 1953, 12.22; Feb. 24, 1954, 11.13; May 18, 8.32; Aug. 30, 9.74; Nov. 10, 12.40.

19/2W-4A6. California Water & Telephone Co. Near Nestor. Drilled unused artesian well in alluvium of Recent age, diameter 12 inches, depth 90 feet. Land-surface datum is about 25 feet above msl. Highest water level 19.87 below lsd, May 18, 1954; lowest 28.83 below lsd, Nov. 10, 1954. Records available: 1953-54. Dec. 30, 1953, 27.83, nearby well being pumped; Feb. 24, 1954, 27.85, water level below sea level; May 18, 19.87; Aug. 30, 28.65, water level below sea level; Nov. 10, 28.83, water level below sea level.

San Joaquin County

Mokelumne River Basin

[Measurements furnished by East Bay Municipal Utility District are marked with an asterisk]

*3N/6-3K11. F. B. Mills Estate. About 1.8 miles west of Lodi. Drilled irrigation water-table well in Victor formation, diameter 12 inches, depth 120 feet. Land-surface datum is 41.03 feet above msl. Highest water level 11.62 below lsd, Jan. 2, 1951; lowest 22.01 below lsd, July 1, 1954. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	17.74	Apr. 1	19.20	July 1	22.01	Oct. 1	19.66
Feb. 1	18.23	May 3	18.99	Aug. 2	21.76	Nov. 1	19.37
Mar. 1	18.81	June 1	19.62	Sept. 1	20.48	Dec. 1	19.04

*3N/6-17D11. A. Delu. About 4.5 miles southwest of Lodi. Drilled irrigation water-table well in Victor formation, diameter 12 inches, depth 93 feet. Land-surface datum is 23.80 feet above msl. Highest water level 7.46 below lsd, May 1, 1952; lowest 24.80 below lsd, Sept. 1, 1954. Records available: 1949-54.

Jan. 4	16.83	Apr. 1	15.50	July 1	22.14	Nov. 1	21.34
Feb. 1	16.37	May 3	15.90	Sept. 1	24.80	Dec. 1	19.97
Mar. 1	15.89	June 1	18.25	Oct. 1	23.81		

*3N/6-25R11. E. E. Morse Estate. About 4.4 miles south of Lodi. Drilled domestic water-table well in Victor formation, diameter 10 inches, depth 93 feet. Land-surface datum is 40.55 feet above msl. Highest water level 26.15 below lsd, Jan. 5, 1953; lowest 36.14 below lsd, Oct. 4, 1950. Records available: 1948-54. Jan. 5, 28.59; Oct. 15, 33.29.

*3N/6-36R2. Leland W. Bunch. About 5.5 miles south of Lodi. Drilled domestic water-table well in Victor formation, diameter 8 inches, depth 85 feet. Land-surface datum is 37.97 feet above msl. Highest water level 11.72 below lsd, Apr. 8, 1938; lowest 33.32 below lsd, Oct. 5, 1949. Records available: 1926-29, 1935-54.

Jan. 5	26.90	Apr. 1	26.73	Sept. 1	29.80	Nov. 1	28.30
Feb. 1	26.79	May 3	27.10	Oct. 6	28.58	Dec. 1	28.06
Mar. 1	26.70						

3N/7-3C1. Jacob Knoll. About 4.0 miles east of Lodi. Drilled observation water-table well in Victor formation, diameter 8 inches, depth 48 feet, cased to 48, perforations 38-48. Land-surface datum is 80.45 feet above msl. Highest water level 25.31 below lsd, June 2, 1943; lowest 41.20 below lsd, Dec. 1, 1954. Records available: 1935-54.

Jan. 5	39.52	May 3	38.62	July 1	37.13	Oct. 7	40.71
Feb. 1	39.67	June 1	36.15	Aug. 2	39.04	Nov. 1	41.09
Mar. 1	39.88	3	35.64	Sept. 1	40.05	Dec. 1	41.20
Apr. 1	40.04						

3N/7-6M8. R. E. and Ruth F. Coker. About 215 feet east of Cherokee Lane and 2 feet north of Southern Pacific RR. right-of-way, Lodi. Drilled observation water-table well in Victor formation, diameter 4 inches, depth 40 feet, cased to 40, perforations 30-40. Land-surface datum is 53.35 feet above msl. Highest water level 17.82 below lsd, Apr. 30, 1943; lowest dry, May 3, July-Dec., 1954. Records available: 1935-54.

Jan. 4	26.24	Apr. 1	27.50	July 1	(f)	Oct. 6	(f)
8	25.93	May 3	(f)	Aug. 2	(f)	Nov. 1	(f)
Feb. 1	25.86	June 1	27.67	Sept. 1	(f)	Dec. 1	(f)
Mar. 1	25.92						

f Dry.

3N/7-7M1. J. and Rachel K. Goetken. East of Cherokee Lane, Lodi. Drilled irrigation water-table well in Victor formation, diameter 10 inches, depth 49 feet. Land-surface datum is 52.63 feet above msl. Highest water level 24.51 below lsd, Apr. 6, 1938; lowest 42.52 below lsd, May 1, 1950. Records available: 1935-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	32.31	Apr. 1	35.10	July 1	39.18	Oct. 6	37.43
Feb. 1	32.10	May 3	39.56	Aug. 2	39.12	Nov. 1	37.06
Mar. 1	32.54	June 1	38.36	Sept. 1	38.13	Dec. 1	36.14

3N/7-10L3. Edward Preszler. About 4.0 miles east of Lodi, and 6.5 feet west of well 3N/7-10L4. Drilled observation water-table well in Victor formation, diameter 10 inches, depth 57 feet, cased to 57, perforations 47-57. Land-surface datum is 72.59 feet above msl. Highest water level 35.33 below lsd, Jan. 12, 1939; lowest dry, Apr. 1, May 3, June 1, 1954. Records available: 1935-54.

Jan. 5	48.78	Apr. 1	(f)	July 1	44.37	Oct. 6	43.69
Feb. 1	48.88	May 3	(f)	Aug. 2	45.85	Nov. 1	45.16
Mar. 1	48.98	June 1	(f)	Sept. 1	43.13	Dec. 1	45.58

f Dry.

3N/7-10L4. Edward Preszler. About 4.0 miles east of Lodi, 6.5 feet east of well 3N/7-10L3. Drilled observation water-table well in Victor, Arroyo Seco, and Laguna formations, diameter 12 inches to 10 inches, depth 190 feet, cased to 190. Land-surface datum is 72.37 feet above msl. Highest water level 35.13 below lsd, Jan. 12, 1939; lowest 63.31 below lsd, July 1, 1954. Records available: 1935-54.

Jan. 5	49.37	May 3	59.72	Aug. 2	62.50	Oct. 6	57.66
Feb. 1	49.50	June 1	60.01	2	62.49	Nov. 1	56.28
Mar. 1	49.65	July 1	63.31	Sept. 1	60.36	Dec. 1	54.20
Apr. 1	53.30						

*3N/7-18N12. Joe Garnero. About 2.5 miles south of Lodi. Drilled domestic water-table well in Victor formation, diameter 6 inches, depth 78 feet. Land-surface datum is 47.44 feet above msl. Highest water level 29.86 below lsd, Feb. 2, 1953; lowest 44.40 below lsd, Aug. 1, 1950. Records available: 1946-54.

Jan. 5	31.85	Apr. 1	33.94	July 1	c42.52	Oct. 6	38.19
Feb. 1	31.48	May 3	37.47	Aug. 2	41.50	Nov. 1	37.08
Mar. 1	31.20	June 1	40.74	Sept. 1	40.20	Dec. 1	36.23

c Nearby well being pumped.

*3N/7-22C11. John Nietschke. About 4.6 miles southeast of Lodi. Drilled domestic water-table well, largely in Victor formation, but probably penetrating into underlying Arroyo Seco and Laguna formations, diameter 8 inches, depth 137 feet. Land-surface datum is 66.43 feet above msl. Highest water level 50.21 below lsd, Mar. 2, 1953; lowest 64.05 below lsd, Oct. 2, 1954. Records available: 1952-54.

Jan. 5	55.27	Apr. 1	53.17	Sept. 1	a67.43	Nov. 1	62.87
Feb. 1	54.11	June 1	61.75	Oct. 6	64.05	Dec. 1	60.53
Mar. 1	53.12						

a Pumping.

*3N/7-27F3. John F. Heitzmann. About 5.5 miles southeast of Lodi. Drilled observation water-table well in Victor formation, diameter 8 inches, depth 46 feet, deepened in May 1949 to 91 feet, cased to 63. Land-surface datum is 59.42 feet above msl. Highest water level 26.12 below lsd, Mar. 31, 1943; lowest 61.34 below lsd, Sept. 1, 1953. Records available: 1935-54.

Jan. 5	52.97	Apr. 1	49.40	July 1	56.12	Oct. 6	61.09
Feb. 1	51.74	May 3	50.00	Aug. 2	58.90	Nov. 1	59.78
Mar. 1	50.35	June 1	53.41	Sept. 1	60.76	Dec. 1	58.10

*4N/6-12R11. A. T. Carlson. About 4.5 miles north of Lodi. Drilled domestic and irrigation water-table well in Victor, Arroyo Seco, and Laguna formations, diameter 8 inches, reported depth 150 feet. Land-surface datum is 57.95 feet above msl. Highest water level 38.84 below lsd, May 1, 1952; lowest 59.02 below lsd, Aug. 2, 1954. Records available: 1948-54.

Jan. 4	44.36	Apr. 1	42.17	July 1	55.89	Oct. 6	55.24
Feb. 1	43.38	May 3	47.37	Aug. 2	59.02	Nov. 1	55.40
Mar. 1	42.61	June 1	51.32	Sept. 1	58.86	Dec. 1	50.70

*4N/6-13J11. Dorothy Woodworth. About 4.0 miles north of Lodi. Drilled domestic water-table well in Victor formation, diameter 6 inches, depth 74 feet. Land-surface datum is 59.43 feet above msl. Highest water level 38.53 below lsd, May 1, 1952; lowest 52.83 below lsd, Sept. 1, 1950. Records available: 1948-54.

Jan. 4	43.70	Apr. 1	41.75	Aug. 2	a58.09	Nov. 1	50.52
Feb. 1	42.89	May 3	44.48	Sept. 1	54.60	Dec. 1	49.08
Mar. 1	42.24	July 1	54.04	Oct. 6	51.87		

a Pumping.

4N/6-34R1. E. M. Smith. About 1.7 miles northwest of Lodi. Drilled unused water-table well in Victor formation, diameter 10 inches, depth reported 120 feet in 1926-29, reported 34 feet in 1935, and 19 feet in 1950. Land-surface datum is 43.28 feet above msl. Highest water level 2.60 below lsd, June 14, 1935; lowest dry at 18.5, Apr. 3, 1950. Records available: 1926-29, 1935-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	16.07	Apr. 1	16.64	July 1	(f)	Oct. 1	17.46
Feb. 1	16.93	May 3	17.48	Aug. 2	(f)	Nov. 1	14.81
Mar. 1	17.41	June 1	17.44	Sept. 1	(f)	Dec. 1	16.56

f Dry.

4N/6-36D1. D. D. Smith and S. H. and I. Zimmerman. About 1.6 miles north of Lodi. Drilled unused water-table well in Victor formation, diameter 6 inches, depth 35 feet. Land-surface datum is 49.90 feet above msl. Highest water level 15.02 below lsd, Mar. 31, 1943; lowest dry at 35, May 1, 1946. Records available: 1926-29, 1935-54.

Jan. 4	23.59	Apr. 1	23.64	July 1	29.68	Oct. 4	25.26
Feb. 1	23.89	May 3	26.13	Aug. 2	28.41	Nov. 1	24.87
Mar. 1	24.14	June 1	c29.73	Sept. 1	26.20	Dec. 1	25.46

c Nearby well being pumped.

4N/7-15B3. Robert L. Carter. About 6.0 miles northeast of Lodi. Drilled observation water-table well in Victor formation, diameter 8 inches, depth 64 feet, deepened in Feb. 1949 to 85 feet, cased to 69. Land-surface datum is 92.05 feet above msl. Highest water level 32.11 below lsd, Sept. 1, 1939; lowest 71.93 below lsd, Sept. 1, 1954. Records available: 1935-54.

Jan. 6	64.67	Apr. 1	62.37	July 1	67.77	Oct. 8	71.54
Feb. 1	63.94	May 3	62.39	Aug. 2	70.63	Nov. 1	71.03
Mar. 1	62.99	June 1	64.00	Sept. 1	71.93	Dec. 1	69.56

4N/7-22Q4. Adolphus Eddlemon. About 4.9 miles northeast of Lodi, and 5 feet north of well 4N/7-22Q5. Drilled observation water-table well in Victor formation and underlying unclassified sand and gravel, diameter 10 inches, depth 51 feet, cased to 51, perforations 39-49. Land-surface datum is 83.61 feet above msl. Highest water level 35.95 below lsd, Apr. 30, 1943; lowest dry at 50, July-Nov. 1949, June-Dec. 1950, July-Nov. 1951, Jan. 6, June-Dec. 1954. Records available: 1935-54.

Jan. 6	(f)	Apr. 1	48.36	July 1	(f)	Oct. 8	(f)
Feb. 1	48.94	May 3	(f)	Aug. 2	(f)	Nov. 1	(f)
Mar. 1	48.58	June 1	(f)	Sept. 1	(f)	Dec. 1	(f)

f Dry.

4N/7-22Q5. Adolphus Eddlemon. About 4.9 miles northeast of Lodi, 5 feet south of well 4N/7-22Q4. Drilled observation artesian well in Victor, Arroyo Seco, and Laguna formations, diameter 10 inches, depth 266 feet, cased at 0-79 and 129-149. Land-surface datum is 83.83 feet above msl. Highest water level 36.34 below lsd, Mar. 31, 1943; lowest 65.67 below lsd, Aug. 2, 1954. Records available: 1935-54.

Jan. 6	50.02	Apr. 1	49.70	July 1	65.07	Oct. 8	57.45
Feb. 1	49.71	May 3	c57.57	Aug. 2	65.67	Nov. 1	57.07
Mar. 1	49.43	June 1	62.15	Sept. 1	61.47	Dec. 1	54.74

c Nearby well being pumped.

4N/7-27P1. Frank H. and Leonard W. Buck. About 4.4 miles northeast of Lodi. Drilled observation water-table well in Victor formation, diameter 10 inches, depth 49 feet, cased to 49, perforations 39-49. Land-surface datum is 81.20 feet above msl. Highest water level 24.60 below lsd, June 3, 1938; lowest 37.84 below lsd, Sept. 1, 1954. Records available: 1935-54.

Jan. 6	36.16	Apr. 1	36.37	July 1	37.05	Oct. 8	37.58
Feb. 1	36.34	May 3	35.70	Aug. 2	37.71	Nov. 1	37.48
Mar. 1	36.26	June 1	35.61	Sept. 1	37.84	Dec. 1	37.19

*4N/7-30E4. Charles Weber. About 2.5 miles north of Lodi. Drilled unused water-table well in Victor formation, diameter 6 inches, depth 76 feet. Land-surface datum is 57.18 feet above msl. Highest water level 26.35 below lsd, Jan. 4, 1944; lowest 44.39 below lsd, Aug. 2, 1954. Records available: 1941-54.

Jan. 4	34.53	Apr. 1	34.97	July 1	43.46	Oct. 6	40.94
Feb. 1	34.19	May 3	37.35	Aug. 2	44.39	Nov. 1	39.80
Mar. 1	33.90	June 1	42.07	Sept. 1	43.38	Dec. 1	38.97

4N/7-31M3. Charles H. Woest. About 1.2 miles north of Lodi. Drilled domestic water-table well in Victor formation, diameter 6 inches, depth 50 feet. Land-surface datum is 57.78 feet above msl. Highest water level 15.94 below lsd, June 3, 1938; lowest 32.73 below lsd, Apr. 1, 1948. Records available: 1935-54.

Jan. 4	27.31	Apr. 1	27.82	July 1	28.88	Oct. 6	27.67
Feb. 1	26.73	May 3	30.03	Aug. 2	29.68	Nov. 1	28.01
Mar. 1	26.92	June 1	30.18	Sept. 1	27.80	Dec. 1	27.87

4N/7-31N5. Jacob Goehring. About 1.0 mile northeast of Lodi. Drilled observation water-table well in alluvium, diameter 4 inches, depth 25 feet, cased to 25, perforations 15-25. Land-surface datum is 44.12 feet above msl. Highest water level 1.73 below lsd, Apr. 30, 1943; lowest 14.63 below lsd, Mar. 1, 1948. Records available: 1935-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	11.69	Apr. 1	11.26	July 1	8.80	Oct. 6	10.22
Feb. 1	11.83	May 3	9.92	Aug. 2	9.88	Nov. 1	10.50
Mar. 1	11.95	June 1	9.40	Sept. 1	9.96	Dec. 1	12.12

*4N/7-34F11. John J. Schmiedt. About 4.2 miles east of Lodi. Drilled observation water-table well in alluvium, diameter 4 inches, depth 24 feet. Land-surface datum is 61.76 feet above msl. Highest water level 11.69 below lsd, July 1, 1953; lowest 15.93 below lsd, Sept. 1, 1954. Records available: 1952-54.

Jan. 5	14.92	Apr. 1	15.41	July 1	15.60	Oct. 7	15.62
Feb. 1	15.27	May 3	14.81	Aug. 2	15.60	Nov. 1	15.58
Mar. 1	15.38	June 1	14.25	Sept. 1	15.93	Dec. 1	15.35

Santa Barbara County

Carpinteria Basin

4/25-19F4. M. F. Lewis. Near Carpinteria. Drilled domestic and irrigation artesian well in older alluvium and Casitas formation, diameter 8 inches, depth 250 feet. Land-surface datum is about 106 feet above msl. Highest water level 77.10 below lsd, May 27, 1943; lowest 123.40 below lsd, Mar. 22, 1950. Records available: 1941-54.

Jan. 25	100.52	May 25	88.47	Aug. 26	98.05	Nov. 29	101.52
Mar. 31	92.59	June 28	90.88	Sept. 29	102.02	Dec. 30	99.16
Apr. 30	90.73						

4/25-19J5. Lyman & Young. Drilled unused artesian well in alluvium, diameter 8 inches, depth 100 feet. Land-surface datum is about 55 feet above msl. Highest water level 39.41 below lsd, Apr. 23, 1942; lowest 92.95 below lsd, Sept. 25, 1951. Records available: 1941-54.

Jan. 25	69.13	Apr. 30	58.60	July 29	c67.99	Oct. 29	73.14
Feb. 25	65.54	May 25	56.36	Aug. 26	c71.75	Nov. 29	70.01
Mar. 31	61.96	June 28	c63.79	Sept. 30	73.68		

c Nearby well being pumped.

4/25-20L4. Carpinteria County Water District. Drilled recharge water-table well in alluvium and Casitas formation, diameter 10 inches, depth 264 feet, cased to 254, perforations 62-254. Land-surface datum is about 111 feet above msl. Highest water level 106.73 below lsd, May 29, 1952; lowest 153.17 below lsd, Sept. 25, 1951. Records available: 1949-54. Jan. 25, 118.90; Mar. 31, 104.85, recharging; Sept. 30, 130.74; Oct. 29, 132.20.

4/25-21R1. Ben Moore. Drilled unused water-table well in Casitas formation, diameter 12 inches, depth 468 feet, cased to 434, perforations 82-90, 120-150, 170-176, 240, 289-304, 314-318, 341, 356-386, 412-416. Land-surface datum is about 127 feet above msl. Highest water level 64.47 below lsd, June 5, 1945; lowest 126.08 below lsd, Nov. 26, 1951. Records available: 1941-54.

Jan. 25	120.02	Apr. 30	117.42	July 29	c118.43	Oct. 29	119.65
Feb. 25	119.71	May 25	116.76	Aug. 26	119.26	Nov. 29	119.89
Mar. 31	117.93	June 28	117.38	Sept. 30	118.76	Dec. 30	119.58

c Nearby well being pumped.

4/25-26A1. Moses Mesa Associates Co. Drilled unused water-table well in Casitas formation, diameter 10 inches, depth 480 feet, cased to 480, perforations 228-480. Land-surface datum is about 412 feet above msl. Highest water level 230.09 below lsd, Feb. 8, 1946; lowest 369.70 below lsd, Oct. 31, 1951. Records available: 1946-54.

Jan. 25	343.69	Apr. 30	319.00	July 29	347.87	Nov. 29	354.85
Feb. 25	333.69	May 25	318.00	Sept. 30	356.35	Dec. 30	341.40
Mar. 31	325.32	June 28	337.02				

4/25-26C2. Shepard Mesa Mutual Water Co. Drilled unused water-table well in Casitas formation, diameter 10 inches, depth 450 feet. Land-surface datum is about 432 feet above msl. Highest water level 226.10 below lsd, May 6, 1946; lowest 353.99 below lsd, Nov. 26, 1951. Records available: 1946-54. Jan. 25, 332.47; Mar. 31, 316.22; Apr. 30, 307.67; May 25, 306.45; Nov. 29, 332.27; Dec. 30, 331.52, nearby well being pumped.

4/25-27Q2. A. F. Heimlich. Drilled unused artesian well in Casitas formation, diameter 10 inches, depth 198 feet. Land-surface datum is about 127 feet above msl. Highest water level 92.86 below lsd, Apr. 30, 1945; lowest 175.42 below lsd, Sept. 25, 1951. Records available: 1941-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	.....	.....	.....	.....	.....	146.08	h148.81	149.89	148.87
2	.....	.....	.....	.....	.....	.....	.....	.....	146.10	148.96	150.18	148.55
3	.....	.....	.....	.....	.....	.....	.....	.....	146.78	148.83	150.23	148.3[illegible]
4	.....	.....	.....	.....	.....	.....	.....	.....	146.73	148.71	150.26	148.37
5	.....	.....	.....	.....	.....	.....	.....	h143.54	146.81	148.72	150.32	148.3[illegible]
6	.....	.....	.....	.....	.....	.....	.....	143.45	146.73	148.79	150.01	148.2[illegible]
7	.....	.....	.....	.....	.....	.....	.....	143.50	146.68	148.96	149.96	148.0[illegible]
8	.....	.....	.....	.....	.....	.....	.....	143.48	146.68	149.37	149.91	147.9[illegible]
9	.....	.....	.....	.....	.....	.....	.....	143.48	146.88	149.61	150.15	147.7[illegible]
10	.....	.....	.....	.....	.....	.....	.....	143.54	147.08	149.61	150.15	147.8[illegible]
11	.....	.....	.....	.....	.....	.....	.....	144.19	147.08	149.61	150.05	147.9[illegible]
12	.....	.....	.....	.....	.....	.....	.....	144.48	147.16	149.67	149.83	147.6[illegible]
13	.....	.....	.....	.....	.....	.....	.....	144.75	147.98	149.90	149.46	147.4[illegible]
14	.....	.....	.....	.....	.....	.....	.....	144.98	148.38	150.10	149.33	147.3[illegible]
15	.....	.....	.....	.....	.....	.....	.....	145.11	148.30	150.10	149.34	147.31
16	.....	.....	.....	.....	.....	.....	.....	144.95	148.10	150.10	149.40	147.4[illegible]
17	.....	.....	.....	.....	.....	.....	.....	145.01	148.10	.....	149.55	147.4[illegible]
18	.....	.....	.....	.....	.....	.....	.....	145.30	148.10	.....	149.31	147.2[illegible]
19	.....	.....	.....	.....	.....	.....	.....	145.78	148.28	.....	149.15	147.0[illegible]
20	.....	.....	.....	.....	.....	.....	.....	145.93	148.58	.....	149.08	146.9[illegible]
21	.....	.....	.....	.....	.....	.....	.....	145.91	148.61	.....	149.10	146.8[illegible]
22	.....	.....	.....	.....	.....	.....	.....	146.03	148.61	.....	149.20	146.7[illegible]
23	.....	.....	.....	.....	.....	.....	.....	146.03	148.61	.....	149.20	146.8[illegible]
24	.....	.....	.....	.....	.....	.....	.....	145.73	148.60	.....	148.97	.....
25	h151.98	h151.07	.....	.....	h143.20	.....	.....	145.58	148.60	.....	148.84	.....
26	.....	.....	.....	.....	.....	.....	.....	145.53	148.68	.....	148.82	.....
27	.....	.....	.....	.....	.....	.....	.....	145.58	148.61	.....	148.77	.....
28	.....	.....	.....	.....	.....	h142.74	.....	145.73	148.66	.....	148.48	.....
29	.....	.....	.....	.....	.....	.....	h142.74	145.94	149.72	h149.66	148.46	.....
30	.....		.....	h146.70	.....	.....	.....	145.98	148.87	149.65	148.65	h146.45
31	.....		h149.42		.....		.....	145.98		149.89		.....

h Tape measurement.

4/25-27R2. W. H. Yule. Drilled irrigation artesian well in Casitas formation, diameter 12 to 10 inches, depth 421 feet, cased to 421, perforations 295-310, 350-378, 392-420. Land-surface datum is about 132 feet above msl. Highest water level 94.96 below lsd, Apr. 30, 1945; lowest 182.23 below lsd, Sept. 25, 1951. Records available: 1941-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	171.93	Mar. 31	162.79	May 25	158.20	Nov. 29	171.45
Feb. 25	166.50	Apr. 30	159.94	Oct. 29	177.60	Dec. 30	166.70

4/25-28J1. W. C. and C. A. Catlin. Drilled domestic and irrigation water-table well in alluvium, diameter 12 inches, depth 175 feet, cased to 175, perforations 59-175. Land-surface datum is about 89 feet above msl. Highest water level 23.0 below lsd, June 1919; lowest 124.64 below lsd, Nov. 23, 1953. Records available: 1919, 1930, 1937-38, 1940-54. Jan. 25, 118.94; Feb. 25, 115.05; Mar. 31, 112.05; Apr. 30, 108.69; May 25, 108.01; Nov. 29, 129.38, pumped recently; Dec. 30, 114.17.

4/25-28M1. Mrs. A. Baylor. Drilled unused artesian well in alluvium, diameter 2 inches, depth 96 feet. Land-surface datum is about 57 feet above msl. Highest water level 19.84 below lsd, Apr. 30, 1945; lowest dry, Aug. 30-Sept. 25, 1951. Records available: 1941-54.

Jan. 25	79.81	Apr. 30	70.53	July 29	83.46	Oct. 29	89.28
Feb. 25	76.17	May 25	70.03	Aug. 26	89.00	Nov. 29	81.19
Mar. 31	73.35	June 28	84.26	Sept. 30	87.02	Dec. 30	75.68

4/25-29D1. H. Sturmer. Drilled domestic and irrigation artesian well in alluvium, diameter 12 inches, depth 147 feet. Land-surface datum is about 17 feet above msl. Highest water level 1.48 below lsd, Apr. 23, 1942; lowest 57.28 below lsd, Sept. 25, 1951. Records available: 1928-29, 1938, 1941-54.

Jan. 25	31.51	Mar. 31	24.43	June 28	28.70	Nov. 29	38.79
Feb. 25	29.50	Apr. 30	21.06	Oct. 29	42.07	Dec. 30	29.14

4/25-29L1. A. P. Salzgeber. Drilled unused artesian well in alluvium, diameter 2 inches, depth 110 feet. Land-surface datum is about 18 feet above msl. Highest water level 12.26 below lsd, May 25, 1954; lowest 51.24 below lsd, Sept. 25, 1951. Records available: 1950-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	22.15	Apr. 30	14.00	July 29	28.37	Oct. 29	29.86
Feb. 25	19.23	May 25	12.26	Aug. 26	33.19	Nov. 29	24.32
Mar. 31	16.35	June 28	24.75	Sept. 30	31.76	Dec. 30	20.54

4/25-29R1. Carpinteria Union High School. Drilled unused artesian well in alluvium, diameter 10 inches, depth 176 feet. Land-surface datum is about 32 feet above msl. Highest water level 8.67 below lsd, Apr. 23, 1942; lowest 66.33 below lsd, Sept. 25, 1951. Records available: 1941-54.

Jan. 25	48.85	Apr. 30	42.78	July 29	c61.94	Oct. 29	65.81
Feb. 25	45.50	May 25	42.64	Aug. 26	c64.06	Nov. 29	51.22
Mar. 31	43.51	June 28	c58.37	Sept. 30	54.93	Dec. 30	46.91

c Nearby well being pumped.

4/25-30D1. Sandyland Beach Club. Drilled domestic artesian well in alluvium, diameter 10 inches, depth 210 feet. Land-surface datum is about 7 feet above msl. Highest water level flowing, May 6, 1938; lowest 48.73 below lsd, Nov. 26, 1951. Records available: 1938, 1941-54.

Jan. 25	20.25	Apr. 30	8.12	Aug. 26	19.88	Nov. 29	22.78
Feb. 25	12.44	May 25	5.81	Sept. 30	21.14	Dec. 30	19.95
Mar. 31	10.07	June 28	18.22	Oct. 29	25.20		

4/25-30D2. California State Highway Department. Drilled unused water-table well in alluvium, diameter 8 inches, depth 93 feet. Land-surface datum is about 18 feet above msl. Highest water level 11.98 below lsd, May 25, 1945; lowest 41.39 below lsd, Sept. 25, 1951. Records available: 1949-54.

Jan. 25	23.31	Apr. 30	14.61	July 29	25.89	Nov. 29	21.89
Feb. 25	19.98	May 25	11.98	Sept. 30	28.25	Dec. 30	20.22
Mar. 31	17.32	June 28	20.83	Oct. 29	26.30		

4/25-34F2. H. R. Hirsch. Formerly T. H. Canfield. Drilled gravel-packed unused water-table well in Santa Barbara formation, diameter 12 inches, depth 563 feet, cased to 563, perforations 83-563. Land-surface datum is 154.1 feet above msl. Highest water level 125.50 below lsd, June 2, 1949; lowest 141.20 below lsd, Dec. 30, 1954. Records available: 1949-54.

Jan. 25	139.22	Apr. 30	139.52	July 29	140.02	Oct. 29	140.70
Feb. 25	136.41	May 25	139.38	Aug. 26	140.22	Nov. 29	140.74
Mar. 31	138.29	June 28	139.88	Sept. 30	140.45	Dec. 30	141.20

4/25-35B1. E. R. Dickover. Drilled domestic water-table well in Casitas formation, diameter 12 inches, depth 140 feet. Land-surface datum is about 193 feet above msl. Highest water level 19.18 below lsd, Mar. 8, 1945; lowest 134.18 below lsd, Sept. 25, 1951. Records available: 1941-54.

Jan. 25	108.47	Apr. 30	81.54	July 29	bc102.10	Nov. 29	114.00
Feb. 25	101.37	May 25	76.98	Sept. 30	bc118.87	Dec. 30	111.68
Mar. 31	94.81	June 28	bc87.35	Oct. 29	c141.00		

b Pumped recently.
c Nearby well being pumped.

4/26-23A2. Frank Wymond. Drilled domestic and irrigation artesian well in Casitas formation, diameter 10 inches, depth 330 feet. Land-surface datum is about 63 feet above msl. Highest water level 45.44 below lsd, Apr. 25, 1950; lowest 85.00 below lsd, Apr. 23, 1951. Records available: 1941, 1947-54.

Jan. 25	51.09	Apr. 30	49.83	July 29	67.56	Oct. 29	61.85
Feb. 25	49.98	May 25	50.39	Aug. 26	67.83	Nov. 29	51.46
Mar. 31	50.08	June 28	54.36	Sept. 30	63.69	Dec. 30	50.10

Goleta Basin

4/27-6N1. John McCaughy. Drilled domestic and irrigation water-table well in Santa Barbara formation, diameter 10 inches, depth 180 feet, perforations 47-100. Land-surface datum is about 231 feet above msl. Highest water level 83.76 below lsd, May 22, 1942; lowest 116.10 below lsd, July 29, 1954. Records available: 1941-49, 1952-54. Jan. 25, 108.54; Feb. 25, 108.61; Mar. 31, 108.66; Apr. 30, 108.75; May 25, 110.82; June 28, 108.88; July 29, 116.10.

4/27-21B1. City of Santa Barbara. Victoria and Rancheria Sts. Drilled unused artesian well in older alluvium and Santa Barbara formation, diameter 16 inches, depth 454 feet, perforations 145-350. Land-surface datum is about 68 feet above msl. Highest water level 37.04 below lsd, Feb. 2, 1948; lowest 99.58 below lsd, Oct. 18-19, 1951. Records available: 1948-54.

4/27-21B1--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	66.13	63.05	61.21	.....	58.35	57.52	62.96	68.94	.....	.....	.....	.....
2	66.05	63.00	61.17	.....	58.37	57.51	62.79	69.20	.....	h70.37	.....	.....
3	65.96	62.90	61.18	59.68	58.28	57.54	62.60	69.44	h69.74	.....	.....	.....
4	65.83	62.67	61.16	59.63	58.31	57.56	62.44	69.64	.....	.....	.....	h58.11
5	65.61	62.83	61.10	59.61	58.33	57.65	62.26	.....	.....	.....	.....	.....
6	65.56	62.80	61.03	59.61	58.29	57.68	61.98	.....	.....	.....	h69.05	.....
7	65.45	62.74	60.96	59.53	58.27	57.70	61.84	.....	.....	.....	.....	.....
8	65.37	62.65	60.86	59.48	58.27	.....	61.90	.....	.....	.....	.....	.....
9	65.34	62.65	60.73	59.38	58.26	.....	62.20	.....	.....	h69.75	.....	.....
10	65.17	62.67	60.68	59.39	58.23	.....	62.63	.....	h68.60	.....	.....	.....
11	64.95	62.62	60.62	59.37	58.14	.....	63.10	.....	.....	.....	.....	.....
12	64.84	62.47	60.63	59.26	58.09	.....	63.41	.....	.....	.....	.....	.....
13	64.87	62.35	60.58	59.26	58.06	59.52	63.82	.....	.....	.....	h68.54	.....
14	64.86	62.38	60.42	59.26	58.06	59.92	64.00	.....	.....	.....	.....	.....
15	64.80	62.40	60.38	59.28	58.02	60.34	64.15	.....	.....	.....	.....	.....
16	64.63	62.31	60.40	59.29	57.95	60.78	64.32	.....	.....	h69.46	.....	.....
17	64.48	62.26	60.60	59.13	57.92	61.14	64.64	.....	.....	.....	.....	.....
18	64.20	62.22	60.75	59.08	57.87	61.60	64.98	.....	.....	.....	.....	h61.07
19	64.03	62.12	60.60	59.03	57.86	62.98	65.32	.....	.....	.....	.....	.....
20	64.14	62.01	60.59	58.96	57.84	62.36	65.60	.....	h67.70	.....	h66.49	.....
21	64.19	61.91	60.42	58.87	57.81	62.76	65.94	.....	.....	.....	.....	.....
22	64.05	61.87	60.32	58.83	57.81	63.18	66.18	.....	.....	.....	.....	.....
23	63.90	61.73	.....	58.80	57.78	63.48	66.55	.....	.....	h68.87	.....	h60.39
24	63.65	61.58	.....	58.78	57.72	63.84	66.80	.....	.....	.....	.....	.....
25	63.63	61.56	.....	58.74	57.67	64.04	67.06	.....	h70.36	.....	.....	.....
26	63.68	61.50	.....	58.67	57.68	63.96	67.18	.....	.....	.....	.....	.....
27	63.50	61.48	.....	58.56	57.66	63.80	67.45	.....	.....	.....	h64.75	.....
28	63.38	61.27	.....	58.48	57.61	63.58	67.66	.....	.....	.....	.....	.....
29	63.31		.....	58.45	57.59	63.39	67.94	.....	.....	.....	.....	.....
30	63.23		.....	58.33	57.62	63.16	68.28	.....	.....	h68.77	.....	.....
31	63.11		.....		57.58		68.60	.....		.....		h59.67

h Tape measurement.

4/28-2N2. County of Santa Barbara. Tuckers Grove. Drilled unused water-table well in Santa Barbara formation, diameter 6 inches, depth 100 feet. Land-surface datum is 177.65 feet above msl. Highest water level 12.94 below lsd, Apr. 30, 1954; lowest 61.34 below lsd, Nov. 26, 1951. Records available: 1943-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	43.40	Apr. 30	12.94	July 29	18.70	Oct. 29	13.69
Feb. 25	36.33	May 25	19.10	Aug. 26	17.63	Nov. 29	13.99
Mar. 31	23.74	June 28	16.24	Sept. 30	13.79	Dec. 30	14.27

4/26-3E2. Peter Cavaletto. Near Goleta. Drilled unused water-table well in alluvium, diameter 8 inches, depth 75 feet. Land-surface datum is 116.73 feet above msl. Highest water level 8.57 below lsd, Apr. 12, 1941; lowest 45.17 below lsd, Oct. 22, 1948. Records available: 1941-54.

Jan. 25	12.81	Apr. 30	12.17	July 29	c21.49	Oct. 29	16.03
Feb. 25	12.44	May 25	12.14	Aug. 26	16.35	Nov. 29	c14.81
Mar. 31	12.21	June 28	c26.83	Sept. 30	c22.99	Dec. 30	12.96

c Nearby well being pumped.

4/28-3M3. L. W. Fowler. Cathedral Oaks Rd. and Patterson Ave. Drilled unused water-table well in alluvium, diameter 8 inches, depth 171 feet. Land-surface datum is 118.40 feet above msl. Highest water level 113.01 below lsd, Dec. 26, 1947; lowest 145.24 below lsd, Sept. 30, 1949. Records available: 1947-54. Jan. 25, 122.42; Mar. 31, 121.26; Apr. 30, 121.06; May 25, 120.42; June 28, 121.82; Aug. 26, 126.87; Sept. 30, 133.59.

4/28-3Q2. A. J. Haverland. Old San Marcos Pass and Cathedral Oaks Rds. Drilled unused artesian well in Santa Barbara formation, diameter 12 inches, depth 360 feet, cased to 360, perforations 126-360. Land-surface datum is 120.57 feet above msl. Highest water level 84.69 below lsd, Jan. 27, 1948; lowest 154.64 below lsd, Sept. 25, 1951. Records available: 1941, 1943-54

Jan. 25	142.41	Apr. 30	139.64	July 29	c150.18	Oct. 29	c147.93
Feb. 25	141.40	May 25	139.13	Aug. 26	c148.75	Nov. 29	142.58
Mar. 31	140.99	June 28	c149.07	Sept. 30	c148.18	Dec. 30	141.00

c Nearby well being pumped.

4/28-4Q2. R. S. Rowe. Drilled unused artesian well in Santa Barbara formation, diameter 12 inches, depth 325 feet, perforations 243-258, 290-310. Land-surface datum is 88.45 feet above msl. Highest water level 61.24 below lsd, Apr. 30, 1945; lowest 117.92 below lsd, June 6, 1950. Records available: 1941-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	112.82	Apr. 30	107.15	July 29	c117.28	Oct. 29	114.43
Feb. 25	110.75	May 25	105.97	Aug. 26	c114.60	Nov. 29	113.34
Mar. 31	108.99	June 28	112.61	Sept. 30	116.70	Dec. 30	110.92

c Nearby well being pumped.

4/28-5R4. F. J. Ewing. Fairview and Stow Canyon Rds. Drilled irrigation artesian well in Santa Barbara formation, diameter 12 inches, depth 154 feet. Land-surface datum is 53.95 feet above msl. Highest water level 40.00 below lsd, June 1937; lowest 78.70 below lsd, Sept. 30, 1954. Records available: 1937-38, 1941, 1943-54.

Jan. 25	76.60	Apr. 30	b75.51	Sept. 30	78.70	Nov. 29	77.09
Feb. 25	76.14	May 25	75.25	Oct. 29	77.12	Dec. 30	76.60
Mar. 31	75.67	Aug. 26	77.90				

b Pumped recently.

4/28-9A3. L. M. Cavaletto. Southern Pacific RR. and Patterson Ave. Drilled unused water-table well in Santa Barbara formation, diameter 12 inches, depth 125 feet. Land-surface datum is 84.10 feet above msl. Highest water level 38.60 below lsd, Mar. 1943; lowest 71.51 below lsd, Sept. 30, 1954. Records available: 1941-54.

Jan. 25	62.97	May 25	59.07	Sept. 30	71.51	Nov. 29	58.53
Mar. 31	62.07	June 28	61.91	Oct. 29	60.03	Dec. 30	58.70
Apr. 30	59.82	Aug. 26	67.74				

4/28-9E1. A. T. Spaulding. Fairview and Encina Rds. Drilled domestic artesian well in Santa Barbara formation, diameter 12 inches, depth 310 feet. Land-surface datum is 43.58 feet above msl. Highest water level 27.64 below lsd, June 7, 1941; lowest 78.66 below lsd, Oct. 29, 1954. Records available: 1941, 1943-54. Jan. 25, 74.90; Feb. 25, 74.35, pumped recently; Mar. 31, 74.08; Apr. 30, 73.37; Oct. 29, 78.66; Nov. 29, 76.64; Dec. 30, 75.95.

4/28-10A1. John S. Greene. Turnpike Rd. and Loma Abaja Creek. Drilled unused water-table well in Santa Barbara formation, diameter 8 inches, depth 154 feet. Land-surface datum is 121.59 feet above msl. Highest water level 93.30 below lsd, May 2, 1944; lowest 142.55 below lsd, June 25, 1953. Records available: 1941-54.

Jan. 25	136.05	Apr. 30	134.78	July 29	c129.25	Oct. 29	104.35
Feb. 25	138.90	May 25	134.07	Aug. 26	c151.20	Nov. 29	102.72
Mar. 31	136.60	June 28	c145.29	Sept. 30	110.25	Dec. 30	102.32

c Nearby well being pumped.

4/28-10F1. J. S. Edwards. Patterson Ave. and Maria Ygnacio Creek. Drilled domestic and irrigation artesian well in Santa Barbara formation, diameter 12 inches, depth 459 feet, cased to 459, perforations 72-198, 312-459. Land-surface datum is 79.90 feet above msl. Highest water level 56.44 below lsd, Apr. 28, 1943; lowest 98.55 below lsd, Oct. 31, 1951. Records available: 1932-33, 1937-38, 1941-54.

Jan. 25	85.38	Apr. 30	83.58	July 29	87.26	Oct. 29	87.22
Feb. 25	84.70	May 25	83.50	Aug. 26	89.30	Nov. 29	85.41
Mar. 31	84.19	June 28	87.31	Sept. 30	89.04	Dec. 30	83.75

4/28-10K2. W. G. Troup. Southern Pacific RR. and San Marcos Pass Rd. Drilled domestic and irrigation artesian well in alluvium, diameter 10 inches, depth 215 feet. Land-surface datum is 85.47 feet above msl. Highest water level 82.90 below lsd, Apr. 24, 1942; lowest 142.11 below lsd, June 28, 1954. Records available: 1941-54.

Jan. 25	131.63	Apr. 30	128.78	July 29	141.59	Oct. 29	132.55
Feb. 25	130.09	May 25	128.48	Aug. 26	134.04	Nov. 29	131.60
Mar. 31	129.42	June 28	142.11	Sept. 30	130.66	Dec. 30	130.06

4/28-11K4. Giovanni Cavalli. Drilled irrigation artesian well in Santa Barbara formation, diameter 12 inches, depth 297 feet. Land-surface datum is about 67 feet above msl. Highest water level 67.72 below lsd, Mar. 7, 1947; lowest 119.95 below lsd, Aug. 26, 1954. Records available: 1947-54.

Jan. 26	110.45	Apr. 30	107.44	July 29	110.25	Oct. 29	111.96
Feb. 25	109.41	May 25	107.04	Aug. 26	119.95	Nov. 29	110.99
Mar. 31	108.99	June 28	110.58	Sept. 30	119.10	Dec. 30	108.46

4/28-16F2. John Begg. U. S. Highway 101 and Goleta Beach Rd. Drilled unused artesian well in Santa Barbara formation, diameter 6 inches, depth 148 feet. Land-surface datum is about 22 feet above msl. Highest water level 26.26 below lsd, June 3, 1944; lowest 98.85 below lsd, Apr. 23, 1951. Records available: 1941, 1943-54.

4/28-16F2--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 25	66.25	Apr. 30	61.95	July 29	75.27	Oct. 29	66.90
Feb. 25	62.08	May 25	61.39	Aug. 26	70.87	Nov. 29	65.81
Mar. 31	61.85	June 28	68.89	Sept. 30	70.26	Dec. 30	61.54

4/28-16R1. Pacific Lighting Corp. Drilled domestic and industrial water-table well in alluvium and Santa Barbara formation, diameter 10 inches, depth 140 feet, perforations 37-47, 67-97, 107-138. Land-surface datum is about 24 feet above msl. Highest water level 7.77 below lsd, Apr. 30, 1945; lowest dry, June 25, 1953. Records available: 1941, 1945-54.

Jan. 25	38.84	May 25	34.64	July 29	31.64	Oct. 29	30.95
Mar. 31	37.95	June 9	38.34	Aug. 26	31.96	Nov. 29	30.49
Apr. 30	34.48	28	33.42	Sept. 30	30.60	Dec. 30	30.13

4/28-17H3. Elmo Little. Mathews Ave. and Fairview Rd. Drilled domestic water-table well in alluvium, diameter 12 inches, depth 12 feet. Land-surface datum is about 11 feet above msl. Highest water level 1.49 below lsd, Mar. 1, 1944; lowest dry, Sept. 25-Dec. 24, 1951. Records available: 1941-54.

Jan. 25	8.25	Apr. 30	5.62	July 29	7.12	Oct. 29	6.40
Feb. 25	7.00	May 25	5.94	Aug. 26	7.34	Nov. 29	6.56
Mar. 31	6.15	June 28	6.60	Sept. 30	6.55	Dec. 30	5.26

4/28-17H11. Mrs. L. Oakley and Mrs. M. Bonetti. Nectarine Ave. and San Jose Creek. Drilled domestic and irrigation artesian well in Santa Barbara formation, diameter 6 inches, depth 119 feet. Land-surface datum is about 10 feet above msl. Highest water level 9.97 below lsd, Apr. 24, 1942; lowest 44.67 below lsd, Sept. 24, 1951. Records available: 1941-54.

Jan. 25	40.70	Apr. 30	37.20	July 29	41.84	Oct. 29	39.64
Feb. 25	37.99	May 25	36.82	Aug. 26	42.55	Nov. 29	38.90
Mar. 31	37.94	June 28	39.43	Sept. 30	42.31	Dec. 30	36.92

4/28-18G2. T. B. Bishop Co. Drilled unused artesian well in Santa Barbara formation, diameter 16 inches, depth 395 feet, cased to 395, perforations 123-139, 159-179, 199-255, 275-395. Land-surface datum is about 7 feet above msl. Highest water level 18.44 below lsd, Dec. 30, 1954; lowest 45.99 below lsd, Aug. 2, 1949. Records available: 1941-54.

Feb. 25	21.82	May 25	20.31	Aug. 26	22.88	Nov. 29	19.60
Mar. 31	21.43	June 28	21.58	Sept. 30	22.49	Dec. 30	18.44
Apr. 30	20.49	July 29	23.26	Oct. 26	20.85		

4/29-13G3. T. B. Bishop Co. Hollister Ave. and Storke Rd. Drilled irrigation water-table well in Santa Barbara formation, diameter 12 inches, depth 189 feet, cased to 189, perforations 164-189. Land-surface datum is about 41 feet above msl. Highest water level 65.98 below lsd, May 28, 1953; lowest 72.59 below lsd, Nov. 26, 1951. Records available: 1951-54.

Jan. 25	65.04	Apr. 30	62.86	July 29	61.94	Oct. 29	61.31
Feb. 25	64.46	May 25	62.48	Aug. 26	61.49	Dec. 30	60.99
Mar. 31	63.50	June 28	62.12	Sept. 30	60.90		

4/29-14A3. Frank Baker. Glen Annie Rd. and Southern Pacific RR. Drilled domestic and irrigation water-table well in Santa Barbara formation, diameter 12 inches, depth 126 feet. Land-surface datum is about 51 feet above msl. Highest water level 71.40 below lsd, Apr. 30, 1945; lowest 87.46 below lsd, July 30, 1951. Records available: 1941-54.

Jan. 25	78.87	Apr. 30	77.76	July 29	76.80	Oct. 29	81.18
Feb. 25	78.78	May 25	77.52	Aug. 26	80.85	Nov. 29	80.32
Mar. 31	78.26	June 28	77.30	Sept. 30	81.22	Dec. 30	74.70

San Antonio Valley

8/32-30K2. John Parma. Los Alamos. U. S. Highway 101 and Den St. Drilled unused artesian well in alluvium, diameter 16 inches, depth 100 feet. Land-surface datum is about 555 feet above msl. Highest water level 1.16 above lsd, Feb. 29, 1944; lowest 24.68 below lsd, Aug. 25, 1953. Records available: 1943-54.

Daily highest water level from recorder graph

Jan. 27	h9.74	May 27	12.30	June 5	21.45	June 14	18.71
Feb. 24	h7.70	28	14.80	6	20.00	15	19.33
Mar. 31	h6.57	29	16.90	7	19.95	16	20.65
Apr. 28	h6.57	30	18.06	8	19.98	24	20.20
May 22	13.60	31	19.09	9	20.00	25	20.16
23	13.74	June 1	20.15	10	20.27	26	21.73
24	12.55	2	21.29	11	20.15	27	21.70
25	12.34	3	21.20	12	20.03	28	21.70
26	12.07	4	20.78	13	19.20	29	22.34

8/32-30K2--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 30	21.50	July 8	21.50	July 15	24.30	July 22	25.77
July 1	20.24	9	22.20	16	25.08	28	h20.12
2	20.86	10	22.20	17	25.60	Aug. 27	h21.64
3	19.55	11	22.22	18	24.58	Sept. 29	h24.26
4	19.44	12	22.00	19	24.74	Oct. 28	h17.11
5	19.70	13	22.00	20	25.90	Nov. 27	h16.25
6	20.85	14	23.20	21	25.80	Dec. 28	h12.32
7	20.90						

h Tape measurement.

8/33-20K1. Virginia Barca Estate. Near Los Alamos. Drilled unused artesian well in alluvium and Paso Robles formation, diameter 16 inches, depth 351 feet, perforations 10-97, 215-235. Land-surface datum is about 410 feet above msl. Highest water level 4.27 below lsd, Feb. 29, 1944; lowest 38.15 below lsd, Apr. 29, 1947. Records available: 1943-54.

Jan. 27	24.41	Apr. 28	24.28	July 28	34.39	Oct. 28	27.40
Feb. 24	24.57	May 27	28.90	Aug. 27	27.88	Nov. 27	c28.38
Mar. 31	c24.01	June 30	c39.32	Sept. 29	26.71	Dec. 28	29.37

c Nearby well being pumped.

8/33-20R1. Virginia Barca Estate. Near Los Alamos. Drilled domestic water-table well in alluvium, diameter 10 inches, depth 75 feet. Land-surface datum is about 410 feet above msl. Highest water level 21.20 below lsd, Jan. 30, 1947; lowest 36.32 below lsd, Sept. 27, 1950. Records available: 1943-54. Jan. 27, 26.65, pumped recently; Feb. 24, 23.08; Apr. 28, 24.57, pumped recently; May 27, 26.16; Sept. 29, 25.72; Oct. 28, 26.20; Dec. 28, 26.30.

8/34-23B1. Josephine Harris Estate. Near Los Alamos. Harris-Los Alamos Rd. and State Highway 1. Drilled unused artesian well in alluvium, diameter 12 inches, depth 150 feet. Land-surface datum is about 310 feet above msl. Highest water level 12.19 below lsd, Feb. 29, 1944; lowest 20.30 below lsd, Mar. 27, 1953. Records available: 1943-54.

Jan. 27	16.51	Apr. 28	c18.80	July 28	c23.09	Oct. 28	c17.60
Feb. 24	c16.28	May 27	c18.74	Aug. 27	c18.60	Nov. 27	c17.41
Mar. 31	c16.14	June 30	c19.85	Sept. 29	c17.91	Dec. 28	17.30

c Nearby well being pumped.

Santa Maria Valley

9/32-7N1. Valerio Tognazzini. Near Sisquoc. State Highway 140 and Pacific Coast Ry. Drilled irrigation water-table well in Paso Robles formation, diameter 16 inches, depth 204 feet, perforations 82-97, 105-145, 162-185. Land-surface datum is about 422 feet above msl. Highest water level 34.62 below lsd, Apr. 27, 1944; lowest 113.95 below lsd, Oct. 30, 1951. Records available: 1924, 1930, 1932-33, 1938-54.

Jan. 1	g74.68	Mar. 30	75.56	Sept. 28	84.14	Nov. 27	85.81
27	75.41	Apr. 1	g75.56	Oct. 1	g84.20	Dec. 28	86.30
Feb. 23	75.45	July 1	g80.10	28	84.69		

g Measurement by Santa Maria Valley Water Conservation District.

9/32-17G1. Caldrone Estate. Near Sisquoc. Tepusquet Creek Rd. and State Highway 140. Drilled domestic water-table well in alluvium and Paso Robles formation, diameter 6 inches, depth 107 feet. Land-surface datum is about 447 feet above msl. Highest water level 11.22 below lsd, Apr. 5, 1943; lowest 66.33 below lsd, June 1, 1950. Records available: 1941-54. Jan. 27, 43.02; June 30, 44.87; July 28, 46.22; Aug. 27, 46.65.

9/33-2A1. Santa Maria Realty Co. Garey. Wicks and Andrews Aves. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 12 inches, depth 168 feet. Land-surface datum is 378.72 feet above msl. Highest water level 23.62 below lsd, June 4, 1941; lowest 83.50 below lsd, Jan. 1, 1952. Records available: 1930-33, 1936, 1938-54.

Jan. 1	g63.22	Mar. 30	61.20	May 26	59.05	Oct. 1	g65.50
27	63.99	Apr. 1	g61.23	July 1	bg60.15	Nov. 27	67.19
Feb. 23	62.92	27	58.88	Sept. 28	65.38	Dec. 28	68.01

b Pumped recently.

g Measurement by Santa Maria Valley Water Conservation District.

9/34-6K2. Associated Oil Co. Near Orcutt. Highway 1 and Casmalia Rd. Drilled unused water-table well in Orcutt formation, diameter 12 inches, depth 139 feet. Land-surface datum is about 161 feet above msl. Highest water level 59.22 below lsd, Mar. 26, 1942; lowest 84.65 below lsd, Sept. 29, 1954. Records available: 1942, 1951-54.

Jan. 27	78.52	Apr. 28	80.89	July 28	83.73	Oct. 28	84.26
Feb. 24	80.60	May 27	81.49	Aug. 26	83.73	Nov. 26	84.03
Mar. 31	80.99	June 30	83.96	Sept. 29	84.65	Dec. 28	83.92

9/34-8K1. C. Muscio. Near Orcutt. Casmalia and Orcutt-Casmalia Rds. Drilled domestic and irrigation water-table well in Orcutt and Paso Robles formations, diameter 14 inches, depth 231 feet. Land-surface datum is about 257 feet above msl. Highest water level 144.54 below lsd, Jan. 30, 1947; lowest 199.39 below lsd, May 29, 1954. Records available: 1942, 1947-54. Feb. 24, 199.27; Mar. 31, 199.24; Apr. 28, 199.25; May 29, 199.39.

10/33-7P1. P. T. Bonetti. Suey Rd. and Main St. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 18 inches, depth 365 feet, cased to 330. Land-surface datum is about 260 feet above msl. Highest water level 112.76 below lsd, Oct. 28, 1952; lowest 132.72 below lsd, Oct. 30, 1951. Records available: 1951-54. Jan. 26, 120.96; Feb. 23 122.40, pumped recently; Mar. 30, 119.09; Apr. 27, 119.14; Oct. 28, 125.47; Nov. 27, 123.69; Dec. 28, 122.60.

10/33-7R2. Mrs. Lucy Howard. Near Santa Maria. Drilled domestic water-table well in alluvium, diameter 8 inches, reported depth 140 feet. Land-surface datum is about 272 feet above msl. Highest water level 63.91 below lsd, June 29, 1944; lowest 124.90 below lsd, Mar. 1, 1950. Records available: 1944-50, 1952-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 23	105.82	Apr. 27	109.02	June 30	111.79	Nov. 27	109.05
Mar. 30	b108.97	May 26	b112.95	Sept. 28	109.32	Dec. 28	104.08

b Pumped recently.

10/33-18G1. La Brea Securities Co. well 8. Near Santa Maria. Suey Rd. and Santa Maria Valley RR. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 436 feet, cased to 424, perforations 132-142, 288-320, 336-340, 408-422. Land-surface datum is about 273 feet above msl. Highest water level 66.75 below lsd, July 1, 1943; lowest 132.10 below lsd, Apr. 1, 1951. Records available: 1939-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 110.60; Apr. 1, 110.08; July 1, 110.08; Oct. 1, 117.92, pumped recently.

10/33-19B1. Owen T. Rice. Near Santa Maria. Battles and East Stowell Rds. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 307 feet, perforations 92-97, 116-125, 190-215, 238-248. Land-surface datum is about 275 feet above msl. Highest water level 73.31 below lsd, Sept. 2, 1943; lowest 157.46 below lsd, June 27, 1951. Records available: 1927, 1929-54.

Jan. 1	g116.55	Apr. 1	g112.10	July 28	115.42	Oct. 28	115.80
26	111.78	27	117.95	Aug. 27	116.35	Nov. 27	115.82
Feb. 23	113.43	June 30	115.11	Sept. 28	115.80	Dec. 28	115.50
Mar. 30	112.22	July 1	g125.00	Oct. 1	g115.85		

g Measurement by Santa Maria Valley Water Conservation District.

10/33-21N2. Frank Costa, Jr. Near Santa Maria. Santa Maria Valley RR. and State Highway 140. Drilled domestic water-table well in Paso Robles formation, diameter 16 inches, depth 215 feet. Land-surface datum is about 307 feet above msl. Highest water level 67.14 below lsd, June 29, 1944; lowest 140.92 below lsd, Sept. 25, 1951. Records available: 1930, 1944-54.

Jan. 27	106.71	May 26	110.68	July 28	c115.44	Nov. 27	112.59
Feb. 23	106.55	June 30	c112.73	Sept. 28	c114.89	Dec. 28	111.84
Apr. 27	108.39						

c Nearby well being pumped.

10/33-27G1. W. C. Adam. Near Santa Maria. State Highway 140 and Pacific Coast Ry. Drilled stock and irrigation water-table well in Paso Robles formation, diameter 16 inches, depth 272 feet, perforations 140-180, 240-260. Land-surface datum is about 338 feet above msl. Highest water level 26.00 below lsd, July 1, 1938; lowest 119.50 below lsd, July 1, 1951. Records available: 1929-33, 1936, 1938-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 62.90; Apr. 1, 58.00; July 1, 52.30, pumped recently; Oct. 1, 59.60.

10/33-27K1. L. H. Adam. Near Santa Maria. State Highway 140 and Pacific Coast Ry. Drilled unused water-table well in alluvium and Paso Robles formation, diameter 12 inches, depth 300 feet. Land-surface datum is about 345 feet above msl. Highest water level 25.08 below lsd, May 19, 1941; lowest 109.56 below lsd, Sept. 27, 1950. Records available: 1941-54.

Jan. 27	63.79	June 30	64.30	Sept. 28	59.51	Nov. 27	66.23
Feb. 23	61.15	July 28	58.34	Oct. 28	60.59	Dec. 28	65.81
Mar. 30	64.32	Aug. 27	58.79				

10/33-28A1. Joe Soares. Near Santa Maria. Drilled irrigation water-table well in Paso Robles formation, diameter 18 inches, depth 374 feet, perforations 100-215, 242-335. Land-surface datum is about 325 feet above msl. Highest water level 31.99 below lsd, July 1, 1938; lowest 114.52 below lsd, Sept. 25, 1951. Records available: 1929-54.

Jan. 1	bg68.70	Apr. 1	g68.03	July 1	bg63.45	Oct. 1	bg68.25
27	68.19	June 30	62.00	Sept. 28	67.52	Nov. 27	68.30
Mar. 30	68.03						

b Pumped recently.

g Measurement by Santa Maria Valley Water Conservation District.

10/33-30G1. Lillian Cook. Near Santa Maria. Drilled public-supply water-table well in Paso Robles formation, diameter 16 inches, depth 676 feet, perforations 325-370, 397-432, 454-486, 505-512, 529-561, 575-585, 612-662. Land-surface datum is about 320 feet above msl. Highest water level 170.42 below lsd, Jan. 1, 1953; lowest 189.35 below lsd, July 1, 1952. Records available: 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 177.50; Apr. 1, 172.50; July 1, 186.84, pumped recently; Oct. 1, 178.65.

10/33-30H1. John Prell. Near Santa Maria. Drilled irrigation water-table well in Paso Robles formation, diameter 22 inches, depth 758 feet, perforations 158-716. Land-surface datum is about 310 feet above msl. Highest water level 151.51 below lsd, Apr. 1, 1952; lowest 178.50 below lsd, Oct. 1, 1952. Records available: 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 171.00; Apr. 1, 167.00; July 1, 173.00, pumped recently; Oct. 1, 177.00.

10/33-30J2. Ross J. Martinez. Near Santa Maria. Drilled domestic water-table well in Paso Robles formation, diameter 8 inches, depth 234 feet. Land-surface datum is about 315 feet above msl. Highest water level 156.17 below lsd, Apr. 1, 1952; lowest 167.25 below lsd, Oct. 1, 1952. Records available: 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 159.06; Apr. 1, 157.10; July 1, 161.70; Oct. 1, 160.75.

10/33-30L1. R. R. Bush Oil Co. Near Santa Maria. Drilled industrial water-table well in Paso Robles formation, diameter 16 inches, depth 500 feet, perforations 190-210, 218-244, 268-286, 310-315, 327-342, 385-418, 450-485. Land-surface datum is about 310 feet above msl. Highest water level 174.00 below lsd, Jan. 1, 1953; lowest 194.25 below lsd, Aug. 1, 1951. Records available: 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 182.20; Apr. 1, 174.90; July 1, 188.83; Oct. 1, 183.33.

10/33-30R1. Santa Maria Berry Farms. Near Santa Maria. Rice School Rd. and Section 8 Rd. Drilled irrigation water-table well in Orcutt and Paso Robles formations, diameter 16 to 14 inches, depth 544 feet, cased to 538, perforations 82-538. Land-surface datum is about 335 feet above msl. Highest water level 165.38 below lsd, Jan. 1, 1953; lowest 184.00 below lsd, Oct. 1, 1951. Records available: 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 171.00, pumped recently; Apr. 1, 162.90; July 1, 171.58, pumped recently; Oct. 1, 167.17.

10/33-33H1. E. L. Sargent. Near Santa Maria. Sisquoc and Bradley Canyon Rds. Drilled domestic and stock water-table well in Paso Robles formation, diameter 16 inches, depth 290 feet, perforations 204-232, 245-250, 270-280. Land-surface datum is about 402 feet above msl. Highest water level 179.50 below lsd, Jan. 27, 1947; lowest 224.01 below lsd, Oct. 28, 1954. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	216.92	Mar. 30	208.43	May 26	214.90	Oct. 28	224.01
Feb. 23	209.60	Apr. 27	209.80	Sept. 28	222.36	Nov. 27	217.77

10/34-2R1. Gracio Apalatequi. Near Santa Maria. U. S. Highway 101 and Donovan Rd. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 14 inches, depth 294 feet, cased to 284, perforations 106-130, 180-190, 221-226. Land-surface datum is about 230 feet above msl. Highest water level 69.16 below lsd, June 1, 1943; lowest 136.16 below lsd, July 27, 1951. Records available: 1929-30, 1933, 1938-54.

Jan. 1	g120.10	Apr. 1	g121.40	July 1	g125.20	Oct. 28	124.75
26	119.78	27	122.38	Sept. 28	125.28	Nov. 27	124.21
Feb. 23	122.06	June 30	125.01	Oct. 1	g122.60	Dec. 28	123.64
Mar. 30	121.48						

g Measurement by Santa Maria Valley Water Conservation District.

10/34-4R1. Gerald Donovan. Near Santa Maria. Donovan and North Blosser Rds. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 192 feet, cased to 182, perforations 90-108, 133-174, 182-184. Land-surface datum is about 192 feet above msl. Highest water level 72.89 below lsd, Mar. 1, 1945; lowest 124.19 below lsd, Nov. 27, 1954. Records available: 1930, 1942, 1945-54. Jan. 26, 117.38; Feb. 23, 116.88; Mar. 30, 116.44; Apr. 27, 117.68; July 28, 123.59; Nov. 27, 124.19.

10/34-6N1. Grisingher & Signorelli. Near Santa Maria. State Highway 166 and Bonita Rd. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 190 feet. Land-surface datum is about 152 feet above msl. Highest water level 48.40 below lsd, Apr. 1, 1943; lowest 96.01 below lsd, Sept. 25, 1951. Records available: 1930, 1934, 1936-54.

Jan. 1	g87.67	Mar. 31	84.78	June 30	92.44	Oct. 1	g95.75
27	86.10	Apr. 1	g84.85	July 1	bg92.70	Dec. 28	91.67
Feb. 24	85.51	28	86.05	Sept. 29	95.35		

b Pumped recently.

g Measurement by Santa Maria Valley Water Conservation District.

10/34-9F1. Mrs. A. E. Preisker. Near Santa Maria. State Highway 166 and North Blosser Rd. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 224 feet, perforations 130-147, 160-210, 217-221. Land-surface datum is about 189 feet above msl. Highest water level 70.62 below lsd, Apr. 1, 1944; lowest 119.20 below lsd, Oct. 1, 1954. Records available: 1942-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 115.87; Apr. 1, 113.70; July 1, 117.63; Oct. 1, 119.20.

10/34-14E3. City of Santa Maria. Santa Maria Valley RR. and U. S. Highway 101. Drilled unused water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 160 feet, cased to 182, perforations 87-109, 164-181. Land-surface datum is about 225 feet above msl. Highest water level 58.67 below lsd, Dec. 22, 1918; lowest 155.56 below lsd, Oct. 10, 1954. Records available: 1917-54. Measurement by city of Santa Maria.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	145.27	Apr. 11	143.64	July 11	152.60	Oct. 10	155.56
10	145.19	18	144.06	18	151.33	17	155.10
17	144.71	25	143.85	25	151.00	24	155.54
24	144.52	27	g143.88	28	g154.07	27	g152.34
27	g144.45	May 2	145.20	Aug. 1	152.58	31	152.85
31	144.39	9	145.10	8	151.75	Nov. 7	151.21
Feb. 7	144.65	16	146.35	15	151.71	14	151.79
13	144.39	23	146.47	22	151.34	21	151.54
21	144.46	26	g146.36	27	153.95	27	g150.25
24	g144.42	30	146.75	29	g150.01	28	152.19
Mar. 7	144.46	June 6	146.93	Sept. 5	151.98	Dec. 5	151.08
14	144.51	13	147.45	12	151.98	12	152.03
21	144.94	20	148.70	19	151.46	19	150.40
28	144.54	27	151.16	26	152.81	26	150.02
30	g143.44	30	g148.41	29	g151.70	28	g149.18
Apr. 4	143.47	July 4	151.29	Oct. 3	152.73		

g Measurement by U. S. Geol. Survey.

10/34-20H1. Ulisse Tognazzini. Near Santa Maria. Casmalia Rd. and Santa Maria Valley RR. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 246 feet, cased to 242, perforations 90-130, 140-176, 196-238. Land-surface datum is about 182 feet above msl. Highest water level 66.57 below lsd, Mar. 1, 1945; lowest 112.30 below lsd, Sept. 29, 1954. Records available: 1930, 1942, 1944-54. Jan. 27, 105.57; Feb. 24, 104.62; Mar. 31, 104.41; Apr. 28, 105.67; May 27, 105.05, pumped recently; Sept. 29, 112.30.

10/34-22R1. George J. Wheat. Near Santa Maria. Stowell Rd. and U. S. Highway 101. Drilled industrial water-table well in alluvium and Paso Robles formation, diameter 16 inches, depth 252 feet, cased to 245, perforations 118-242. Land-surface datum is about 217 feet above msl. Highest water level 93.19 below lsd, Mar. 1, 1945; lowest 147.32 below lsd, Sept. 28, 1954. Records available: 1931, 1934, 1938-54.

Jan. 1	g136.42	Apr. 1	bg135.01	July 1	bg138.80	Oct. 1	g138.25
27	135.97	27	135.73	Sept. 28	147.32	Nov. 27	146.29
Mar. 30	b135.01	June 30	139.87				

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

10/34-23H1. Marion B. Rice. Near Santa Maria. Stowell and South Nance Rds. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 18 inches, depth 218 feet, cased to 208. Land-surface datum is about 242 feet above msl. Highest water level 100.65 below lsd, Apr. 1, 1943; lowest 155.25 below lsd, July 1, 1952. Records available: 1929-30, 1933, 1938-54.

Jan. 1	g151.42	Mar. 30	148.49	July 1	bg152.00	Oct. 1	g151.25
26	150.56	Apr. 1	g148.83	Sept. 28	152.35	Nov. 27	151.30
Feb. 23	150.07	27	150.79				

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

10/34-24K1. Union Oil Co. of Calif. Near Santa Maria. Drilled unused water-table well in Paso Robles formation, diameter 12 inches, depth 714 feet, perforations 650-657, 692-710. Land-surface datum is about 245 feet above msl. Highest water level 75.32 below lsd, Dec. 30, 1941; lowest 124.55 below lsd, Aug. 1, 1951. Records available: 1941, 1951-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 117.55; Apr. 1, 115.15; July 1, 125.43, pumped recently; Oct. 1, 120.24.

10/35-7F1. M. J. Ellis. Near Guadalupe. Drilled domestic and irrigation artesian well in alluvium and Paso Robles formation, diameter 12 inches, depth 249 feet, perforations 140-145, 200-225. Land-surface datum is about 48 feet above msl. Highest water level flowing, Dec. 30, 1943, Feb. 29, 1944; lowest 20.09 below lsd, June 25, 1953. Records available: 1929-36, 1938-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g11.80	Apr. 1	g7.70	July 1	bg25.29	Oct. 1	bg18.53
27	8.25	May 27	17.98	28	18.37	28	18.75
Feb. 24	9.32	June 30	19.72	Aug. 27	18.66	Dec. 28	10.52
Mar. 31	7.70						

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

10/35-7G3. John Jenkins. Near Guadalupe. Drilled unused artesian well in alluvium and Paso Robles formation, diameter 16 inches, depth 286 feet. Land-surface datum is about 53 feet above msl. Highest water level 3.24 below lsd, Feb. 29, 1944; lowest 31.41 below lsd, June 30, 1954. Records available: 1942-54.

Jan. 27	17.67	Apr. 28	c24.65	July 28	29.86	Oct. 28	27.63
Feb. 24	20.27	May 27	26.90	Aug. 27	28.76	Nov. 27	22.88
Mar. 31	17.03	June 30	31.41	Sept. 29	28.26	Dec. 28	20.28

c Nearby well being pumped.

10/35-9F1. Waller-Franklin Seed Co. Near Guadalupe. State Highway 166 and Southern Pacific RR. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 198 feet. Land-surface datum is about 88 feet above msl. Highest water level 13.61 below lsd, May 19, 1942; lowest 52.33 below lsd, June 27, 1951. Records available: 1930, 1933, 1935-36, 1938-54.

Jan. 1	g37.43	Mar. 31	32.10	Aug. 27	48.51	Oct. 28	45.48
27	32.97	Apr. 1	g32.11	Sept. 29	45.72	Nov. 27	41.62
Feb. 24	34.85	July 1	bg53.26	Oct. 1	g44.71	Dec. 28	37.20

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

10/35-9N1. Agnes King. Guadalupe. Drilled irrigation artesian well in Paso Robles formation, diameter 16 inches, depth 285 feet. Land-surface datum is about 87 feet above msl. Highest water level 13.30 below lsd, Apr. 1, 1945; lowest 51.35 below lsd, Oct. 1, 1951. Records available: 1930, 1938-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 37.80; Apr. 1, 30.70; July 1, 56.54, pumped recently; Oct. 1, 46.70.

10/35-12M1. E. and G. Le Roy. Near Santa Maria. State Highway 166 and Bonita Rd. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 210 feet, perforations 133-148, 173-185. Land-surface datum is about 138 feet above msl. Highest water level 23.43 below lsd, Jan. 23, 1924; lowest 83.70 below lsd, Oct. 1, 1954. Records available: 1924, 1927, 1930-32, 1938-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 76.60; Apr. 1, 70.70; July 1, 84.40, pumped recently; Oct. 1, 83.70.

10/35-21B1. Mathison & Shaw. Near Guadalupe. Corralillos Canyon Rd. and Southern Pacific RR. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 310 feet, perforations 102-118, 134-136, 145-175, 246-248, 251-300. Land-surface datum is about 94 feet above msl. Highest water level 7.85 below lsd, Feb. 29, 1944; lowest 57.66 below lsd, Aug. 27, 1954. Records available: 1938-54.

Jan. 1	g36.36	Mar. 31	26.74	June 30	46.13	Oct. 1	bg47.65
27	27.67	Apr. 1	g26.80	July 1	g47.42	Dec. 28	34.07
Feb. 24	27.97	May 27	31.66	Aug. 27	57.66		

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

10/35-24B1. Union Sugar Co. Near Santa Maria. Corralillos Canyon and Ray Rds. Drilled irrigation artesian well in alluvium and Paso Robles formation, diameter 16 inches, depth 290 feet, perforations 122-153, 169-175, 178-288. Land-surface datum is about 144 feet above msl. Highest water level 42.55 below lsd, Feb. 29, 1944; lowest 87.20 below lsd, Oct. 1, 1954. Records available: 1934, 1938-54.

Jan. 1	g82.05	May 27	c86.22	Aug. 27	87.00	Oct. 28	85.88
27	76.70	June 30	84.43	Sept. 29	87.02	Nov. 26	85.66
Mar. 31	75.75	July 1	g88.39	Oct. 1	g87.20	Dec. 28	82.66
Apr. 1	g77.52						

c Nearby well being pumped.
g Measurement by Santa Maria Valley Water Conservation District.

11/34-19Q1. Frank Silva. Near Santa Maria. Drilled domestic water-table well in Orcutt and Paso Robles formations, diameter 6 inches, depth 315 feet. Land-surface datum is about 305 feet above msl. Highest water level 223.77 below lsd, Jan. 30, 1947; lowest 254.12 below lsd, Aug. 29, 1951. Records available: 1947-54. Jan. 27, 240.85; Feb. 24, 242.30; Mar. 31, 242.10; Apr. 28, 245.07; May 27, 249.07; Aug. 27, 253.84; Nov. 27, 248.81.

11/34-30Q1. Mary Bolton. Near Santa Maria. Bonita and Guadalupe-Nipomo Rds. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 180 feet. Land-surface datum is about 148 feet above msl. Highest water level 34.59 below lsd, May 16, 1941; lowest 87.20 below lsd, Sept. 29, 1954. Records available: 1930, 1933, 1936, 1938-54. Jan. 1, 83.10; Apr. 1, 81.60; Apr. 28, 82.00; May 27, 82.49; July 1, 83.30, pumped recently; Sept. 29, 87.20; Oct. 1, 85.80.

11/34-34J1. L. O. Fox. Near Santa Maria. Drilled domestic and stock water-table well in alluvium, diameter 8 inches, depth 103 feet. Land-surface datum is about 209 feet above msl. Highest water level 62.37 below lsd, Apr. 30, 1942; lowest 126.75 below lsd, Nov. 27, 1954. Records available: 1930, 1942, 1947-54. Jan. 26, 104.41; Feb. 23, 105.80; Sept. 28, 115.33; Nov. 27, 126.75; Dec. 28, 124.89.

11/35-20E1. Union Sugar Co. Near Guadalupe. Southern Pacific RR. and Oso Flaco Lake Rd. Drilled irrigation artesian well in Paso Robles formation, diameter 18 inches, depth 525 feet, cased to 444, perforations 150-444. Land-surface datum is about 49 feet above msl. Highest water level flowing, Feb. 29, 1944; lowest 29.50 below lsd, Apr. 1, 1941. Records available: 1938-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g13.60	Mar. 31	9.29	July 1	bg19.40	Oct. 1	g17.50
27	9.82	Apr. 1	g9.83	Sept. 29	17.00	Dec. 28	18.91
Feb. 24	10.01	28	18.00				

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

11/35-25H1. M. J. Mendoza. Near Santa Maria. Bonita and Guadalupe-Nipomo Rds. Drilled unused water-table well in alluvium, diameter 16 inches, depth 129 feet. Land-surface datum is about 135 feet above msl. Highest water level 33.42 below lsd, June 29, 1944; lowest 63.88 below lsd, Nov. 27, 1954. Records available: 1942, 1944-54.

Jan. 27	61.80	Apr. 28	60.98	July 28	62.45	Oct. 28	63.75
Feb. 24	61.71	May 27	61.45	Aug. 27	62.84	Nov. 27	63.88
Mar. 31	61.17	June 30	61.90	Sept. 29	63.34		

11/35-26M2. Sam Tognazzini. Near Guadalupe. Oso Flaco Lake and Guadalupe-Nipomo Rds. Drilled unused artesian well in alluvium and Paso Robles formation, diameter 14 inches, depth 324 feet, perforations 112-125, 254-280, 300-320. Land-surface datum is about 106 feet above msl. Highest water level 28.92 below lsd, Nov. 29, 1944; lowest 65.99 below lsd, July 26 1950. Records available: 1930, 1944-54.

Jan. 27	51.74	Apr. 28	55.76	July 28	c73.30	Oct. 28	60.80
Feb. 24	d51.62	May 27	c68.24	Aug. 27	c72.60	Nov. 27	57.26
Mar. 31	50.62	June 30	c72.09	Sept. 29	c69.46	Dec. 28	55.82

c Nearby well being pumped.
d Nearby well pumped recently.

11/35-28M1. Union Sugar Co. Near Guadalupe. Oso Flaco Lake Rd. and Southern Pacific RR. Drilled irrigation artesian well in Paso Robles formation, diameter 16 inches, depth 376 feet, perforations 235-239, 272-276, 300-372. Land-surface datum is about 77 feet above msl. Highest water level 11.09 below lsd, Dec. 30, 1943; lowest 50.15 below lsd, July 1, 1954. Records available: 1934, 1938-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 34.75; Apr. 1, 28.75; July 1, 50.15; Oct. 1, 41.10.

11/35-33G1. H. E. Pezzoni. Near Guadalupe. Southern Pacific RR. and Guadalupe-Nipomo Rd. Drilled irrigation artesian well in alluvium, diameter 10 inches, depth 141 feet. Land-surface datum is about 91 feet above msl. Highest water level 16.49 below lsd, Feb. 29, 1944; lowest 52.65 below lsd, Aug. 27, 1954. Records available: 1930, 1933-34, 1938-54.

Jan. 1	g42.80	Apr. 1	g37.80	Aug. 27	52.65	Oct. 28	47.01
27	38.37	May 27	48.75	Sept. 29	48.13	Nov. 27	46.75
Feb. 24	38.64	July 1	bg53.86	Oct. 1	g49.60	Dec. 28	42.24
Mar. 31	37.51						

b Pumped recently.
g Measurement by Santa Maria Valley Water Conservation District.

11/35-35A1. Elmer A. Runels. Near Guadalupe. Bonita and Nipomo-Guadalupe Rds. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 195 feet, perforations 125-189. Land-surface datum is about 123 feet above msl. Highest water level 24.50 below lsd, Feb. 24, 1925; lowest 70.50 below lsd, Oct. 1, 1954. Records available: 1925, 1930, 1938-54. Measurement by Santa Maria Valley Water Conservation District. Jan. 1, 64.53; Apr. 1, 61.57; July 1, 68.95, pumped recently; Oct. 1, 70.50.

Santa Ynez Valley

6/30-6A1. Sam Torrence. Near Santa Ynez. Telephone Rd. and Baseline Ave. Drilled irrigation water-table well in terrace deposits, diameter 16 inches, depth 262 feet, perforations 42-260. Land-surface datum is about 669 feet above msl. Highest water level 42.02 below lsd, Apr. 8, 1943; lowest 100.92 below lsd, June 30, 1953. Records available: 1942-54. Jan. 26, 76.93; Feb. 23, 75.50; Mar. 29, 75.33; Sept. 30, 98.90; Oct. 19, 91.79; Nov. 29, 87.05; Dec. 29, 87.20.

6/30-7K1. Mrs. W. Anderson. Santa Ynez. Drilled public-supply water-table well in terrace deposits, diameter 10 inches, depth 70 feet. Land-surface datum is about 614 feet above msl. Highest water level 38.22 below lsd, Mar. 3, 1944; lowest dry, Dec. 29, 1953. Records available: 1941-54. Mar. 29, 48.29. Measurement discontinued.

6/30-9N1. San Lucas Ranch. Near Santa Ynez. Drilled stock water-table well in Paso Robles(?) formation, diameter 8 inches, depth 160 feet. Land-surface datum is about 653 feet above msl. Highest water level 30.71 below lsd, Sept. 1, 1944; lowest 39.71 below lsd, May 26, 1954. Records available: 1941-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	38.79	Apr. 28	38.63	July 27	38.77	Oct. 18	39.61
Feb. 23	38.70	May 26	39.71	Sept. 30	38.80	Dec. 29	38.92
Mar. 29	38.58	June 29	38.82				

6/30-21B2. Rancho Juan y Lolita. Near Santa Ynez. Drilled irrigation water-table well in river-channel deposits, diameter 14 inches, reported depth 70 feet. Land-surface datum is about 495 feet above msl. Highest water level 12.35 below lsd, Apr. 28, 1954; lowest 19.98 below lsd, Sept. 29, 1953. Records available: 1952-54.

Jan. 26	15.92	Mar. 29	13.79	May 26	14.18	Nov. 29	18.79
Feb. 23	13.47	Apr. 28	12.35	Oct. 18	19.12	Dec. 29	18.69

6/30-29E1. Rancho Juan y Lolita. Near Santa Ynez. Drilled unused water-table well in alluvium, diameter 10 inches, depth 52 feet. Land-surface datum is about 461 feet above msl. Highest water level 7.90 below lsd, Mar. 10, 1941; lowest 24.00 below lsd, May 20-21, 1951. Records available: 1933-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.38	22.52	15.93	13.54	.....	.....	15.55	19.19	20.79	21.42	22.04	22.61
2	22.37	22.51	15.77	13.59	.....	12.20	15.69	19.34	20.86	21.44	22.06	22.64
3	22.39	22.50	15.73	13.63	.....	12.23	15.85	19.48	20.92	21.47	22.08	22.64
4	22.40	22.48	15.24	13.68	.....	12.33	16.00	19.60	20.95	21.47	22.10	22.70
5	22.40	22.46	15.06	13.73	.....	12.44	16.21	19.74	20.96	21.48	22.13	22.70
6	22.42	22.37	14.89	13.80	.....	12.53	16.39	19.85	20.99	21.52	22.15	22.70
7	22.43	22.31	14.76	13.83	.....	12.62	16.54	19.95	21.01	21.54	22.17	22.73
8	22.44	22.21	14.58	13.90	.....	12.70	16.67	20.05	21.03	21.56	22.20	22.73
9	22.44	22.10	14.45	13.96	.....	12.79	16.80	20.15	21.05	21.58	22.22	22.75
10	22.44	21.96	14.33	14.00	.....	12.84	16.94	20.25	21.07	21.60	22.24	22.79
11	22.44	21.77	14.22	14.06	.....	12.88	17.08	20.35	21.10	21.62	22.26	22.78
12	22.44	21.55	14.14	14.10	.....	12.97	17.08	20.45	21.11	21.64	22.29	22.78
13	22.47	21.30	14.07	14.15	.....	13.10	17.22	20.59	21.12	21.66	22.30	22.79
14	22.47	21.02	13.97	14.21	.....	13.20	16.47	20.64	21.14	21.69	22.32	22.80
15	22.49	20.73	13.90	14.26	h12.81	13.32	16.47	20.73	21.15	21.71	22.33	22.81
16	22.51	.....	13.80	14.34	.....	13.44	16.73	20.81	21.16	21.73	22.35	22.84
17	22.51	.....	13.73	14.39	.....	13.57	16.99	20.89	21.19	21.75	22.38	22.86
18	22.51	.....	13.65	14.44	.....	13.70	17.25	20.97	21.22	21.77	22.40	22.91
19	22.50	.....	13.57	14.48	.....	13.83	17.48	21.05	21.22	21.80	22.43	22.90
20	22.53	18.98	13.49	14.56	.....	13.95	17.69	20.40	21.23	21.81	22.45	22.91
21	22.56	18.60	13.41	14.63	.....	14.10	17.89	19.60	21.24	21.83	22.45	22.93
22	22.56	18.21	13.35	14.70	.....	14.25	18.06	19.61	21.26	21.85	22.45	22.95
23	22.56	17.81	13.32	14.77	.....	14.40	18.19	19.75	21.28	21.87	22.48	22.96
24	22.55	17.43	13.32	.....	.....	14.55	18.25	19.90	21.30	21.87	22.49	23.00
25	22.55	17.10	13.33	.....	.....	14.70	18.37	20.02	21.35	21.90	22.51	23.00

6/30-29E1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	22.58	16.80	13.38	.....	.....	14.83	18.49	20.17	21.35	21.93	22.53	23.00
27	22.59	16.52	13.37	.....	.....	14.97	18.56	20.30	21.36	21.95	22.58	23.01
28	22.58	16.21	13.37	.....	.....	15.12	18.63	20.44	21.37	21.97	22.58	23.04
29	22.59		13.39	.....	.....	15.26	18.76	20.53	21.38	21.99	22.58	23.05
30	22.55		13.43	.....	.....	15.40	18.92	20.62	21.40	22.01	22.58	23.05
31	22.54		13.51		.....		19.03	20.70		22.03		23.05

h Tape measurement.

6/31-2K1. Sam de la Cuesta. Near Ballard. Drilled domestic and irrigation water-table well in alluvium, diameter 10 inches, depth 75 feet. Land-surface datum is about 627 feet above msl. Highest water level 23.02 below lsd, Jan. 9, 1942; lowest 49.60 below lsd, Sept. 21, 1951. Records available: 1942, 1947-54. Jan. 26, 38.17; Feb. 23, 37.59; Mar. 29, 36.50; Aug. 30, 50.10, pumped recently; Sept. 30, 40.60; Nov. 29, 39.30; Dec. 29, 42.30, pumped recently.

6/31-13D1. Mrs. W. E. Parker. Near Santa Ynez. Refugio Pass Rd. and State Highway 150. Drilled domestic water-table well in Paso Robles formation, diameter 10 inches, depth 170 feet. Land-surface datum is about 608 feet above msl. Highest water level 102.58 below lsd, Mar. 9, 1942; lowest 120.64 below lsd, Dec. 30, 1949. Records available: 1941-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	112.82	Apr. 28	112.82	July 27	115.67	Oct. 19	114.70
Feb. 23	112.69	May 26	113.23	Aug. 30	114.47	Nov. 29	114.80
Mar. 29	112.58	June 29	114.25	Sept. 30	114.50	Dec. 29	114.70

6/31-16N2. H. G. Peterson. Near Solvang. Drilled irrigation water-table well in river-channel deposits, diameter 16 inches, depth 47 feet. Land-surface datum is about 368 feet above msl. Highest water level 5.93 below lsd, May 1, 1941; lowest 23.01 below lsd, Oct. 30, 1951. Records available: 1941-42, 1949-54.

Jan. 26	10.33	Mar. 29	10.25	Aug. 30	20.84	Nov. 29	19.00
Feb. 23	10.31	Apr. 28	10.27	Nov. 5	21.52	Dec. 29	14.89
Mar. 9	10.20	May 26	9.98				

6/31-17F1. John R. Orton. Near Buellton. Dug domestic water-table well in alluvium, diameter 12 inches, depth 43 feet. Land-surface datum is 362.90 feet above msl. Highest water level 14.80 below lsd, Apr. 9, 1941; lowest 29.68 below lsd, July 27, 1951. Records available: 1931-54.

Jan. 26	23.64	Apr. 28	a22.00	July 27	a27.65	Oct. 19	a26.73
Feb. 23	22.25	May 26	a24.85	Aug. 30	a25.92	Nov. 29	26.68
Mar. 29	21.58	June 29	25.88	Sept. 30	26.86	Dec. 29	27.65

a Pumping.

6/31-21H2. Petan Dairy Ranch. Near Solvang. Santa Ynez River and Alisal Rd. Drilled unused water-table well in alluvium, diameter 8 inches, depth 13 feet. Land-surface datum is about 407 feet above msl. Highest water level 0.70 below lsd, Mar. 7, 1941; lowest 13.46 below lsd, Sept. 30, 1954. Records available: 1931-54.

Jan. 26	12.25	Apr. 28	c12.30	July 27	c13.60	Oct. 18	13.21
Feb. 23	12.29	May 26	c12.31	Aug. 30	c13.97	Nov. 29	13.43
Mar. 29	c12.19	June 29	c12.82	Sept. 30	13.46	Dec. 29	13.28

c Nearby well being pumped.

6/32-6K1. Manuel P. Domingos. Formerly Mrs. Minnie Barker. Near Buellton. Drilled domestic and stock water-table well in alluvium, diameter 12 inches, depth 74 feet. Land-surface datum is about 390 feet above msl. Highest water level 10.50 below lsd, July 9, 1932; lowest 22.90 below lsd, Oct. 29, 1953. Records available: 1932-34, 1941-54.

Jan. 26	19.55	May 26	a25.52	July 27	19.80	Oct. 21	a31.20
Apr. 28	22.82	June 29	a23.20	Aug. 30	20.29	Dec. 29	21.66

a Pumping.

6/32-9A1. Owen E. Hollister. Near Buellton. Drilled domestic water-table well in alluvium, diameter 8 inches, depth 58 feet. Land-surface datum is 309.33 feet above msl. Highest water level 26.20 below lsd, Jan. 21, 1942; lowest 37.69 below lsd, Aug. 6, 1942. Records available: 1932-54. June 29, 36.06, pumped recently; July 27, 36.70; Sept. 27, 35.10; Nov. 12, 34.67; Nov. 29, 34.47; Dec. 12, 34.48.

6/32-11A1. Thomas O'Neill. Formerly William Hunt. Near Buellton. Drilled unused water-table well in Paso Robles(?) formation, diameter 8 inches, depth 125 feet. Land-surface datum is 341.88 feet above msl. Highest water level 39.24 below lsd, Apr. 25, 1952; lowest 50.86 below lsd, Sept. 29, 1953. Records available: 1950-54.

Jan. 26	44.72	Mar. 29	44.15	May 26	44.26	July 27	48.20
Feb. 23	44.31	Apr. 28	44.33	June 29	46.67	Aug. 18	47.30

6/32-11N1. Doty & Mercer. Near Buellton. Drilled domestic water-table well in alluvium, diameter 8 inches, depth 50 feet. Land-surface datum is 332.74 feet above msl. Highest water level 24.77 below lsd, Apr. 9, 1952; lowest 36.80 below lsd, Dec. 2, 1954. Records available: 1932, 1941, 1949-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 17	34.74	May 27	34.32	Aug. 31	33.15	Dec. 2	36.80
Mar. 30	34.44	June 30	32.27	Nov. 5	36.46	28	36.50
Apr. 29	34.38	July 28	32.20				

6/32-12J2. A. Bodine. Buellton. Drilled unused water-table well in Paso Robles formation, diameter 6 inches, depth 126 feet. Land-surface datum is 356.96 feet above msl. Highest water level 22.98 below lsd, Sept. 11, 1941; lowest 38.47 below lsd, Sept. 28, 1949. Records available: 1941-54.

Jan. 26	32.75	Apr. 28	33.89	July 27	36.85	Oct. 19	32.95
Feb. 23	33.18	May 26	33.70	Aug. 30	36.56	Nov. 29	32.76
Mar. 29	33.15	June 29	34.78	Sept. 30	33.00	Dec. 29	32.30

6/32-16P3. Channing Peake. Near Buellton. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 70 feet. Land-surface datum is about 293 feet above msl. Highest water level 41.82 below lsd, Feb. 24, 1943; lowest 53.68 below lsd, Mar. 27, 1951. Records available: 1941-54.

Jan. 27	43.60	Mar. 30	43.40	May 27	44.24	Nov. 12	47.92
Feb. 24	43.62	Apr. 29	43.85	June 30	44.71	Dec. 28	44.86

6/32-18H1. T. J. Donovan. Near Buellton. Drilled domestic and stock water-table well in alluvium, diameter 8 inches, depth 50 feet. Land-surface datum is about 266 feet above msl. Highest water level 25.80 below lsd, Oct. 18, 1941; lowest 40.16 below lsd, Nov. 28, 1951. Records available: 1932-42, 1949-54.

Jan. 27	33.10	Apr. 29	33.09	July 28	35.00	Oct. 20	36.30
Feb. 24	32.98	May 27	33.03	Aug. 31	35.80	Nov. 30	35.40
Mar. 30	32.92	June 30	33.80	Sept. 28	35.70	Dec. 28	35.96

6/33-8J1. Hollister Estate. Near Lompoc. Drilled domestic water-table well in alluvium, diameter 10 inches, depth 62 feet. Land-surface datum is about 202 feet above msl. Highest water level 40.76 below lsd, Mar. 27, 1952; lowest 52.14 below lsd, Sept. 24, 1951. Records available: 1941-42, 1949-54.

Jan. 27	42.84	Apr. 29	42.80	July 28	45.50	Dec. 2	43.94
Feb. 24	42.37	May 27	42.65	Nov. 17	45.05	28	43.60
Mar. 30	42.22	June 30	43.20				

6/33-9P1. Hollister Estate. Near Lompoc. Drilled unused water-table well in alluvium, diameter 16 inches, depth 83 feet. Land-surface datum is about 200 feet above msl. Highest water level 21.80 below lsd, Apr. 3, 1941; lowest 54.61 below lsd, Nov. 30, 1950. Records available: 1932-54.

Jan. 27	40.67	Apr. 29	43.60	July 28	44.96	Oct. 21	41.21
Feb. 24	39.71	May 27	c42.85	Aug. 31	43.70	Nov. 30	41.20
Mar. 30	39.82	June 30	c43.99	Sept. 28	42.00	Dec. 28	40.40

c Nearby well being pumped.

6/33-11M1. William Rennie. Drilled irrigation water-table well in river-channel deposits and alluvium, diameter 16 inches, depth 65 feet, cased to 63, perforations 4-30, 56-63. Land-surface datum is about 207 feet above msl. Highest water level 4.29 below lsd, Feb. 27, 1950; lowest 16.39 below lsd, Nov. 7, 1951. Records available: 1947, 1949-54.

Jan. 27	8.24	Apr. 29	8.31	Sept. 28	10.58	Nov. 29	10.72
Feb. 24	8.20	July 22	10.51	Oct. 20	10.80	Dec. 28	10.02
Mar. 30	7.81	Aug. 18	10.22				

6/34-1P1. Hollister Estate. Near Lompoc. Santa Rosa Rd. and Salsipuedes Creek. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 164 feet, cased to 164, perforations 54-72, 127-162. Land-surface datum is about 154 feet above msl. Highest water level 36.46 below lsd, Mar. 27, 1952; lowest 45.41 below lsd, July 26, 1951. Records available: 1949-54.

Jan. 27	41.20	Apr. 29	39.32	July 22	44.07	Nov. 30	41.38
Feb. 24	40.28	June 10	41.97	Oct. 22	42.15	Dec. 28	41.06
Mar. 30	39.75	30	41.04				

6/34-2A6. Hattie Madsen. Near Lompoc. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 185 feet, cased to 185, perforations 56-66, 107-178. Land-surface datum is 129.96 feet above msl. Highest water level 36.40 below lsd, Dec. 30, 1952; lowest 44.72 below lsd, July 6, 1949. Records available: 1948-54.

Jan. 26	37.62	Apr. 28	37.15	Aug. 30	38.35	Nov. 29	39.29
Feb. 23	37.42	May 26	36.87	Sept. 30	38.62	Dec. 29	39.01
Mar. 29	36.63	July 27	37.95	Oct. 28	39.14		

6/34-4F3. City of Lompoc. West Olive and O Sts. Drilled unused water-table well in alluvium, diameter 16 inches, depth 81 feet, perforations 60-77. Land-surface datum is about 95 feet above msl. Highest water level 43.44 below lsd, Jan. 27, 1954; lowest 58.17 below lsd, Apr. 24, 1951. Records available: 1950-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	43.44	Apr. 29	51.93	July 28	48.10	Oct. 25	46.75
Feb. 24	44.73	May 27	47.66	Aug. 31	48.04	Nov. 30	46.00
Mar. 30	44.58	June 30	48.57	Sept. 28	47.48	Dec. 28	45.39

6/34-6C2. Bank of America. Near Lompoc. Ocean and Legge Aves. Drilled domestic and stock artesian well in Careaga sand, diameter 12 inches, depth 185 feet, perforations 115-155. Land-surface datum is 99.80 feet above msl. Highest water level 47.88 below lsd, Feb. 24, 1943; lowest 76.78 below lsd, Apr. 24, 1951. Records available: 1930-39, 1943-54. Jan. 27, 57.78; pumped recently; Mar. 30, 56.15; Apr. 29, 58.35; June 30, 63.95; July 28, 65.95; Nov. 30, 57.99.

6/34-12F2. Hollister Estate. Near Lompoc. Santa Rosa Rd. and Salsipuedes Creek. Drilled unused water-table well in alluvium, diameter 6 inches, depth 50 feet. Land-surface datum is about 151 feet above msl. Highest water level 34.21 below lsd, June 29, 1953; lowest 40.18 below lsd, Dec. 26, 1951. Records available: 1942, 1949-54.

Jan. 27	39.02	May 27	37.92	Sept. 28	37.76	Nov. 30	39.35
Feb. 24	38.65	June 30	36.75	Oct. 22	38.92	Dec. 28	39.00
Apr. 29	37.76	July 28	36.39				

7/31-23P1. F. L. Mattei. Los Olivos. Drilled domestic and irrigation water-table well in Paso Robles formation, diameter 8 inches, depth 141 feet. Land-surface datum is about 827 feet above msl. Highest water level 8.09 below lsd, Aug. 7, 1942; lowest 65.46 below lsd, Oct. 30, 1951. Records available: 1942-54.

Jan. 26	25.48	Apr. 28	28.72	Aug. 30	44.29	Nov. 29	43.60
Feb. 23	25.49	May 26	34.20	Sept. 30	44.78	Dec. 29	41.18
Mar. 29	25.52	June 29	39.49	Oct. 20	44.51		

7/31-25L1. Dr. Ina M. Richter and Mrs. Virginia Lee. Near Los Olivos. Drilled domestic water-table well in Paso Robles formation, diameter 12 inches, depth 200 feet. Land-surface datum is about 806 feet above msl. Highest water level 55.83 below lsd, Apr. 27, 1944; lowest 92.39 below lsd, Oct. 20, 1954. Records available: 1942-54.

Jan. 26	89.04	Apr. 28	a90.25	July 27	91.60	Oct. 20	92.39
Feb. 23	88.94	May 26	90.46	Aug. 30	91.94	Dec. 29	92.37
Mar. 29	89.00	June 29	91.00	Sept. 30	92.28		

a Pumping.

7/31-36G2. Laura Grossi. Near Ballard. Roblar and Grand (Refugio) Aves. Drilled unused water-table well in Paso Robles formation, diameter 8 inches, depth 127 feet. Land-surface datum is about 731 feet above msl. Highest water level 30.65 below lsd, Jan. 31, 1947; lowest 56.08 below lsd, Sept. 29, 1953. Records available: 1947-54. Jan. 26, 53.88. Measurement discontinued.

7/31-36L2. D. B. Kilbourne. Near Ballard. Baseline and Grand (Refugio) Aves. Drilled domestic and irrigation water-table well in Paso Robles formation, diameter 12 inches, depth 230 feet. Land-surface datum is about 715 feet above msl. Highest water level 16.54 below lsd, Apr. 7, 1943; lowest 62.08 below lsd, Sept. 30, 1954. Records available: 1942-54.

Jan. 26	47.88	Apr. 28	46.17	Sept. 30	62.08	Nov. 29	55.03
Feb. 23	46.18	May 26	55.64	Oct. 20	58.00	Dec. 29	51.80
Mar. 29	44.71	Aug. 30	58.18				

7/33-30C1. John Valla. Near Lompoc. Orcutt Rd. and State Highway 150. Drilled unused water-table well in Paso Robles formation, diameter 8 inches, depth 183 feet. Land-surface datum is about 233 feet above msl. Highest water level 150.41 below lsd, Feb. 1, 1946; lowest 157.26 below lsd, Aug. 30, 1954. Records available: 1941-54.

Jan. 26	c156.84	May 26	156.87	Aug. 30	157.26	Nov. 29	157.06
Mar. 29	156.58	June 29	c156.87	Sept. 30	157.03	Dec. 29	157.07
Apr. 28	c156.83	July 27	156.84	Oct. 27	157.20		

c Nearby well being pumped.

7/34-9H3. U. S. Geol. Survey, Union Oil Co., Purisima Lease. Near Lompoc. Drilled observation water-table well in Orcutt formation, diameter 8 inches, depth 103 feet, cased to 103. Land-surface datum is about 275 feet above msl. Highest water level 9.32 below lsd, Oct. 10, 1948, Sept. 3, 1949; lowest 11.85 below lsd, Oct. 29, 1954. Records available: 1948-54. Recording gage removed Apr. 17, 1954.

Daily highest water level from recorder graph*

Day	Jan.	Feb.	Mar.	Apr.	May	Oct.
1	11.12	11.00	10.81	10.86	.....	.....
2	11.13	11.00	10.79	10.88	.....	.....
3	11.12	11.00	10.79	10.90	.....	.....
4	11.12	10.99	10.79	10.91	.....	.....
5	11.13	10.99	10.82	10.92	.....	.....

7/34-9H3--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	Oct.
6	11.13	10.98	10.84	10.92	.....	.....
7	11.12	10.98	10.82	10.93	.....	.....
8	11.11	10.98	10.81	10.91	.....	.....
9	11.10	10.96	10.79	10.88	.....	.....
10	11.10	10.94	10.77	10.86	.....	.....
11	11.09	10.93	10.76	10.86	.....	.....
12	11.02	10.91	10.76	10.86	.....	.....
13	10.99	10.85	10.76	10.85	.....	.....
14	10.99	10.83	10.76	10.82	.....	.....
15	10.99	10.83	10.76	10.82	h10.78	.....
16	11.03	10.84	10.72	10.85	.....	.....
17	11.06	10.86	10.70	10.88	.....	.....
18	11.03	10.88	10.70	.....	.....	.....
19	10.95	10.90	10.71	.....	.....	.....
20	10.90	10.93	10.71	.....	.....	.....
21	10.90	10.94	10.71	.....	.....	.....
22	10.94	10.93	10.71	.....	.....	.....
23	10.99	10.92	10.70	.....	.....	.....
24	10.94	10.89	10.68	.....	.....	.....
25	10.92	10.87	10.68	.....	.....	.....
26	10.92	10.85	10.74	.....	.....	.....
27	10.94	10.84	10.83	.....	.....	.....
28	10.99	10.84	10.76	.....	.....	.....
29	11.01		10.86	.....	.....	h11.85
30	11.01		10.84	.....	.....	.....
31	11.01		10.84		.....	.....

* No record for June, July, August, September, November, and December.
h Tape measurement.

7/34-12E1. U. S. Geol. Survey, Union Oil Co., Purisima Lease. Near Lompoc. Drilled observation water-table well in Careaga sand, diameter 8 to 6 inches, depth 385 feet, cased to 385, perforations 345-385. Land-surface datum is 385.83 feet above msl. Highest water level 301.70 below lsd, June 25, 1949; lowest 304.52 below lsd, Dec. 27, 1954. Records available: 1949-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	303.94	.....	303.77	.....	303.94	304.06	304.11	304.19	.....	304.24	.....	304.30
2	303.96	.....	303.79	.....	304.10	304.01	304.11	304.17	.....	.....	.....	304.39
3	304.06	.....	303.89	.....	304.01	304.03	304.10	304.18	304.25	.....	.....	304.21
4	304.06	.....	304.07	.....	304.00	304.14	304.12	304.27	.....	.....	.....	304.29
5	303.88	303.97	304.10	.....	303.98	304.17	304.23	304.21	.....	.....	.....	304.43
6	303.89	303.97	304.10	.....	303.97	304.19	304.19	304.33	.....	.....	.....	304.39
7	303.94	303.97	304.12	.....	303.94	304.10	304.16	.....	.....	.....	304.20	304.33
8	303.92	304.02	304.06	304.02	303.95	304.06	304.14	.....	.....	.....	304.22	304.29
9	304.04	303.96	304.05	303.90	303.99	304.07	304.00	.....	.....	.....	304.21	304.07
10	303.84	303.96	303.98	303.90	304.11	304.13	304.00	.....	.....	.....	304.11	304.22
11	303.60	304.00	304.03	304.02	304.01	304.05	304.02	.....	.....	.....	304.11	304.44
12	303.60	303.91	304.03	304.00	303.96	304.03	304.03	.....	.....	.....	304.40	304.41
13	303.85	303.74	304.11	303.88	303.96	304.05	304.04	.....	.....	.....	304.27	304.29
14	304.01	303.79	304.00	303.85	304.01	304.07	304.04	.....	.....	.....	304.21	304.23
15	304.16	304.03	303.92	304.00	304.05	304.05	304.02	.....	.....	.....	304.18	304.22
16	303.96	304.09	303.74	.....	304.04	304.04	304.03	.....	.....	.....	304.41	304.26
17	303.90	304.05	303.81	304.02	304.01	304.03	304.10	.....	.....	.....	304.50	304.46
18	303.63	304.11	304.02	303.92	304.01	304.06	304.11	.....	.....	.....	304.45	304.40
19	303.44	304.15	303.88	303.92	304.05	303.98	304.12	.....	.....	.....	304.42	304.34
20	303.64	304.07	303.90	303.97	304.06	303.94	304.13	.....	.....	.....	304.42	304.28
21	304.13	304.02	303.93	303.89	304.03	303.97	304.09	.....	.....	.....	304.42	304.20
22	304.12	304.02	303.76	303.86	304.03	304.06	304.09	.....	.....	.....	304.42	304.14
23	.....	304.02	303.75	303.88	304.07	304.13	304.10	.....	.....	.....	304.37	304.20
24	.....	303.80	303.86	303.93	304.05	304.10	304.14	.....	.....	.....	304.34	304.24
25	.....	303.80	304.05	304.02	304.00	304.09	304.25	.....	.....	.....	304.22	304.28
26	.....	303.84	304.22	304.04	304.01	304.10	304.24	.....	.....	.....	304.21	304.34
27	.....	303.89	304.15	303.97	304.02	304.18	304.08	.....	.....	.....	304.23	304.52
28	.....	303.93	303.99	303.97	303.95	304.11	304.06	.....	.....	.....	304.11	304.51
29	.....		303.90	303.97	303.95	304.09	304.07	.....	.....	304.26	304.09	304.35
30	.....		303.94	303.92	304.00	304.09	304.13	.....	.....	.....	304.18	304.38
31	.....		304.02		304.14		304.20	.....		.....		304.23

7/34-14F1. Walter F. Ziesche. Near Lompoc. Drilled unused water-table well in Paso Robles formation, diameter 12 inches, depth 250 feet. Land-surface datum is 268.32 feet above msl. Highest water level 194.94 below lsd, Oct. 23, 1947; lowest 199.80 below lsd, Nov. 29, 1954. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	199.29	Apr. 28	199.26	July 27	199.48	Oct. 27	199.61
Feb. 23	199.23	May 26	199.33	Aug. 30	199.51	Nov. 29	199.80
Mar. 29	199.28	June 29	199.43	Sept. 30	199.60	Dec. 29	199.60

7/34-21E1. U. S. Geol. Survey, Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled observation artesian well in Orcutt formation, diameter 8 inches, depth 145 feet, cased to 145, perforations 73-93. Land-surface datum is about 82 feet above msl. Highest water level 17.97 below lsd, Apr. 1, 1949; lowest 25.02 below lsd, Aug. 10, 1951. Records available: 1948-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.28	19.86	19.26	18.97	19.59	20.60	21.10	21.89	21.50	21.15	20.91	20.57
2	20.30	19.87	19.31	18.95	19.64	20.60	21.20	21.89	21.51	21.20	20.94	20.56
3	20.32	19.84	19.38	18.91	19.60	20.63	21.24	21.96	21.56	21.16	20.95	20.47
4	20.30	19.82	19.44	18.91	19.64	20.73	21.25	21.99	21.55	21.08	20.94	20.55
5	20.28	19.83	19.42	18.91	19.71	20.82	21.17	21.99	21.52	21.06	20.92	20.50
6	20.32	19.80	19.41	18.85	19.76	20.81	21.23	21.96	21.41	21.09	20.91	20.45
7	20.41	19.81	19.41	18.84	19.83	20.69	21.13	21.96	21.37	21.00	20.91	20.41
8	20.43	19.73	19.38	18.84	19.88	20.74	21.15	21.88	21.36	21.12	20.89	20.41
9	20.50	19.73	19.41	18.80	19.99	20.80	21.18	21.84	21.36	21.09	20.86	20.30
10	20.44	19.74	19.39	18.81	19.87	20.85	21.26	21.82	21.36	21.03	20.82	20.39
11	20.37	19.71	19.40	18.90	19.89	20.85	21.27	21.76	21.34	21.02	20.85	20.43
12	20.36	19.66	19.40	18.78	19.91	20.85	21.26	21.75	21.31	21.04	20.86	20.37
13	20.50	19.59	19.42	18.76	19.99	20.78	21.33	21.77	21.30	21.06	20.82	20.30
14	20.50	19.63	19.33	18.76	20.06	20.75	21.43	21.77	21.26	21.10	20.76	20.28
15	20.43	19.68	19.31	18.87	20.04	20.81	21.52	21.66	21.25	21.07	20.73	20.28
16	20.28	19.65	19.29	18.87	19.97	20.84	21.59	21.64	21.25	21.12	20.80	20.29
17	20.26	19.61	19.38	18.85	19.94	20.87	21.65	21.59	21.25	21.09	20.74	20.31
18	20.10	19.64	19.37	18.86	20.02	20.89	21.59	21.58	21.25	21.06	20.68	20.28
19	20.05	19.57	19.27	18.89	20.13	20.82	21.57	21.61	21.25	21.00	20.64	20.23
20	20.28	19.50	19.27	18.99	20.19	20.75	21.64	21.58	21.22	21.00	20.60	20.21
21	20.22	19.48	19.20	19.02	20.24	20.77	21.68	21.59	21.22	21.00	20.60	20.20
22	20.15	19.48	19.10	19.07	20.30	20.81	21.71	21.64	21.19	20.98	20.58	20.15
23	20.03	19.44	19.11	19.17	20.29	20.87	21.78	21.62	21.17	20.97	20.60	20.16
24	19.94	19.35	19.15	19.25	20.29	20.89	21.85	21.62	21.17	20.94	20.58	20.13
25	19.96	19.37	19.20	19.34	20.37	20.88	21.81	21.58	21.23	20.93	20.53	20.18
26	20.10	19.40	19.22	19.37	20.48	20.91	21.80	21.57	21.15	20.92	20.50	20.17
27	20.00	19.41	19.02	19.40	20.59	20.87	21.81	21.57	21.13	20.96	20.54	20.20
28	19.95	19.28	18.99	19.44	20.61	20.85	21.81	21.58	21.10	20.99	20.47	20.14
29	19.97		18.94	19.53	20.62	20.91	21.90	21.51	21.14	20.92	20.47	20.08
30	19.93		19.00	19.56	20.66	21.01	21.93	21.47	21.11	20.92	20.56	20.16
31	19.84		18.98		20.65		21.96	21.47		20.89		20.15

7/34-22H1. H. E. Harris. Near Lompoc. Rucker Crossing of Santa Ynez River. Drilled domestic artesian well in alluvium and Orcutt formation, diameter 12 inches, depth 208 feet, cased to 193, perforations 87-100, 167-190. Land-surface datum is about 97 feet above msl. Highest water level 20.80 below lsd, Mar. 7, 1941; lowest 31.75 below lsd, May 28, 1951. Records available: 1941-42, 1946-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	28.32	Apr. 28	29.06	July 27	30.39	Oct. 27	28.92
Feb. 23	28.04	May 26	30.94	Aug. 30	27.98	Nov. 29	28.61
Mar. 30	28.74	June 29	30.03	Sept. 30	29.03	Dec. 29	28.63

7/34-22Q4. U. S. Geol. Survey, A. Scolari property. Near Lompoc. Rucker Crossing Rd. and A St. Drilled observation water-table well in alluvium, diameter 2 inches, depth 24 feet, cased to 24, screen 21-24. Land-surface datum is 82.72 feet above msl. Highest water level 12.82 below lsd, Jan. 6, 1953; lowest dry, Aug. 28, 1950-Dec. 26, 1951. Records available: 1947-54.

Jan. 27	17.87	Apr. 29	14.83	July 28	17.23	Oct. 26	19.31
Feb. 24	15.96	May 28	14.90	Aug. 31	18.25	Nov. 30	19.51
Mar. 30	14.73	June 30	16.30	Sept. 28	18.82	Dec. 28	19.73

7/34-24E2. J. F. de Costa. Near Lompoc. Drilled irrigation water-table well in Paso Robles formation, diameter 16 inches, depth 191 feet, perforations 119-140. Land-surface datum is 178.25 feet above msl. Highest water level 103.17 below lsd, Nov. 27, 1938; lowest 109.80 below lsd, Aug. 30, 1954. Records available: 1938, 1947, 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 27, 1938	g103.17	Aug. 13, 1953	108.78	May 26, 1954	108.30	Sept. 30, 1954	109.00
Sept. 23, 1947	103.51	Oct. 2	108.39	June 29	108.65	Nov. 29	108.15
Jan. 30, 1953	108.65	Mar. 5, 1954	108.16	Aug. 30	109.80	Dec. 29	108.20

g Measurement by Jack Alexander, well driller.

7/34-24N1. La Purisima Mission State Park. Near Lompoc. Drilled irrigation water-table well in Paso Robles formation, diameter 16 inches, depth 183 feet, perforations 130-143. Land-surface datum is 130.4 feet above msl. Highest water level 51.2 below lsd, May 26, 1930; lowest 61.60 below lsd, July 27, 1954. Records available: 1930-35, 1949, 1953-54.

Jan. 26	58.93	May 26	60.80	Sept. 30	60.30	Nov. 29	59.86
Mar. 29	59.25	July 27	61.60	Oct. 27	60.89	Dec. 29	59.35
Apr. 28	60.40						

7/34-26C2. J. Maxwell Wilson. Near Lompoc. State Highway 150 and Orcutt Rd. Drilled unused water-table well in alluvium and Paso Robles formation, diameter 16 inches, reported depth 150 feet. Land-surface datum is about 110 feet above msl. Highest water level 32.53 below lsd, Apr. 29, 1953; lowest 37.00 below lsd, Jan. 18, 1952. Records available: 1951-54. Jan. 26, 34.03; Feb. 23, 34.06; Mar. 29, 34.05. Measurement discontinued.

7/34-26H3. R. C. Lilly. Near Lompoc. Drilled unused water-table well in alluvium, diameter 16 inches, depth 123 feet. Land-surface datum is about 115 feet above msl. Highest water level 40.13 below lsd, Mar. 9, 1950; lowest 45.10 below lsd, Aug. 1, 11, 1952. Records available: 1950-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.70	41.45	41.12	41.96	42.26	42.85	43.17	44.00	44.01	43.69	43.26	42.67
2	41.73	41.44	41.17	41.85	42.16	42.78	43.12	43.97	43.96	43.65	43.23	42.63
3	41.76	41.39	41.23	41.75	42.10	42.73	43.06	44.05	43.85	43.60	43.20	42.56
4	41.70	41.39	41.27	41.72	.....	42.71	43.15	44.07	43.78	43.55	43.26	42.60
5	41.65	41.39	41.26	41.67	.....	42.79	43.29	43.91	43.73	43.52	43.33	42.64
6	41.73	41.38	41.29	41.63	.....	42.79	43.25	43.79	43.65	43.48	43.36	42.60
7	41.72	41.42	41.29	41.56	.....	42.74	43.69	43.74	43.58	43.45	43.37	42.57
8	41.89	41.32	41.28	41.61	42.51	42.84	43.88	43.73	43.53	43.44	43.34	42.55
9	42.05	41.33	41.36	41.58	42.48	42.90	43.96	43.74	43.51	43.38	43.38	42.48
10	41.92	41.36	41.56	41.64	42.36	42.94	43.88	43.70	43.51	43.33	43.41	42.48
11	41.85	41.33	41.79	.....	42.20	43.03	43.65	43.68	43.51	43.30	43.34	42.50
12	41.81	41.29	42.21	.....	.....	43.04	43.63	43.66	43.55	43.30	43.36	42.47
13	41.83	41.22	42.44	.....	.....	42.89	43.80	43.67	43.50	43.32	43.19	42.40
14	41.78	41.30	41.38	.....	.....	42.84	43.83	43.69	43.50	43.34	43.11	42.39
15	41.75	41.33	41.36	.....	42.45	42.94	43.84	43.79	43.42	43.54	43.09	42.39
16	41.61	41.28	41.29	.....	42.30	43.09	44.05	43.76	43.42	43.37	43.09	42.39
17	41.60	41.26	41.17	42.06	42.34	43.27	44.05	43.84	43.45	43.27	43.05	42.38
18	41.53	41.30	40.92	42.03	42.32	43.39	43.91	44.00	43.58	43.25	42.98	42.38
19	41.46	41.25	40.85	42.15	42.31	43.22	43.88	44.03	43.70	43.25	42.93	42.37
20	41.62	41.21	41.81	42.10	42.37	43.04	43.92	43.86	43.80	43.30	42.91	42.37
21	41.68	41.24	41.74	42.04	42.23	43.04	43.93	43.89	43.90	43.48	42.91	42.33
22	41.55	41.26	41.64	42.06	42.20	43.05	43.90	43.93	43.95	43.60	42.89	42.30
23	41.52	41.21	41.64	.....	42.17	43.04	44.02	43.86	43.99	43.65	42.89	42.28
24	41.45	41.13	41.72	42.22	42.13	43.02	44.03	43.85	43.99	43.53	42.84	42.26
25	41.49	41.18	41.88	42.45	42.08	43.00	43.98	43.90	44.00	43.46	42.79	42.26
26	41.60	41.20	42.06	42.29	42.10	43.15	43.78	43.84	43.87	43.50	42.76	42.26
27	41.52	41.22	42.13	42.33	42.28	43.08	44.07	43.91	43.40	43.48	42.73	42.27
28	41.45	41.14	42.06	42.29	42.66	42.96	44.19	44.07	43.75	43.37	42.68	42.24
29	41.49		41.93	42.29	42.75	42.98	44.25	43.88	43.77	43.33	42.66	42.13
30	41.46		41.93	.....	42.76	43.02	44.30	43.80	43.74	43.29	42.66	42.14
31	41.40		41.84		42.72		44.19	43.94		43.27		42.17

7/34-27A4. U. S. Geol. Survey, L. H. Schuyler property. Near Lompoc. North A St. and Santa Ynez River. Drilled observation water-table well in alluvium, diameter 2 inches, depth 30 feet. Land-surface datum is 79.19 feet above msl. Highest water level 8.19 below lsd, Feb. 24, 1953; lowest dry, Aug. 28, 1950-Dec. 26, 1951. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	12.88	Apr. 29	11.27	July 28	11.12	Oct. 26	12.47
Feb. 24	12.78	May 28	11.22	Aug. 31	11.73	Nov. 30	12.95
Mar. 30	12.03	June 30	10.92	Sept. 28	12.35	Dec. 28	13.16

7/34-27L1. Mrs. Susan Van Clief. Near Lompoc. North Ave. and A St. Drilled irrigation water-table well in alluvium, diameter 12 inches, depth 66 feet. Land-surface datum is about 97 feet above msl. Highest water level 25.68 below lsd, Apr. 25, 1941; lowest 48.75 below lsd, May 29, 1951. Records available: 1941-53. Measurement discontinued.

7/34-28H2. T. M. Parks. Near Lompoc. Central Ave. and H St. Drilled unused artesian well in alluvium, diameter 6 inches, depth 78 feet. Land-surface datum is 89.55 feet above msl. Highest water level 21.74 below lsd, Mar. 10, 1943; lowest 43.14 below lsd, May 28, 1951. Records available: 1930-39, 1942-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	30.96	May 27	36.03	Aug. 31	32.63	Nov. 30	c33.58
Mar. 30	29.31	June 30	34.96	Sept. 28	33.07	Dec. 28	c34.66
Apr. 29	32.83	July 28	37.43	Oct. 26	33.87		

c Nearby well being pumped.

7/34-28R1. W. A. Burpee. Near Lompoc. North Ave. and H St. Drilled unused artesian well in alluvium, diameter 12 inches, depth 146 feet, cased to 146, perforations 106-146. Land-surface datum is 69.68 feet above msl. Highest water level 2.09 below lsd, Apr. 23, 1941; lowest 24.31 below lsd, Mar. 27, 1951. Records available: 1930-54.

Mar. 2	11.28	July 28	15.80	Sept. 28	13.11	Nov. 30	12.61
30	10.01	Aug. 31	16.87	Nov. 2	12.27	Dec. 28	12.87
June 30	15.98						

7/34-28R2. U. S. Geol. Survey, W. A. Burpee property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, original depth 16 feet, deepened to 19. Land-surface datum is 69.50 feet above msl. Highest water level 2.70 below lsd, Mar. 2, 1944; lowest dry, June 28-Dec. 26, 1951. Records available: 1943-54.

Jan. 27	13.02	Apr. 29	c11.62	July 28	12.82	Nov. 2	13.00
Feb. 24	11.80	May 27	11.97	Aug. 31	13.10	30	12.82
Mar. 30	11.57	June 30	12.41	Sept. 28	12.99	Dec. 28	12.47

c Nearby well being pumped.

7/34-29E4. W. H. Sanor. Near Lompoc. Central and Floradale Aves. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 176 feet. Land-surface datum is 67.71 feet above msl. Highest water level 18.48 below lsd, Dec. 29, 1946; lowest 42.26 below lsd, Mar. 27, 1951. Records available: 1945-54.

Jan. 27	21.19	Apr. 29	28.40	July 28	31.86	Nov. 30	23.90
Feb. 24	20.29	May 27	33.83	Sept. 28	24.23	Dec. 28	22.74
Mar. 30	20.42	June 30	34.93	Nov. 1	23.18		

7/34-29E5. U. S. Geol. Survey, W. H. Sanor property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 27 feet, cased to 27. Land-surface datum is 67.74 feet above msl. Highest water level 18.21 below lsd, Oct. 12, 1945; lowest dry, June 28, 1951-Feb. 28, 1952. Records available: 1945-54.

Jan. 27	20.48	Apr. 29	20.56	July 28	22.38	Nov. 1	21.73
Feb. 24	20.03	May 27	21.28	Aug. 31	22.21	30	21.51
Mar. 30	19.96	June 30	21.89	Sept. 28	21.92	Dec. 28	21.30

7/34-30L3. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 27 feet, cased to 27. Land-surface datum is 58.79 feet above msl. Highest water level 15.83 below lsd, Dec. 29, 1946; lowest dry, May 28-Sept. 24, 1951. Records available: 1945-54.

Jan. 27	17.23	Apr. 29	19.23	July 28	22.27	Nov. 3	19.28
Feb. 24	16.43	May 27	18.33	Aug. 31	21.51	30	18.88
Mar. 30	17.01	June 30	21.13	Sept. 28	20.43	Dec. 28	18.27

7/34-30L4. Union Sugar Co. Near Lompoc. Legge and Central Aves. Drilled irrigation artesian well in alluvium, diameter 14 inches. Land-surface datum is about 59 feet above msl. Highest water level 16.56 below lsd, Jan. 27, 1953; lowest 36.10 below lsd, Mar. 30, 1953. Records available: 1951-54.

Jan. 27	17.68	June 30	34.06	Aug. 31	23.32	Nov. 3	19.80
Apr. 29	25.75	July 28	29.50	Sept. 28	20.94	30	19.50

7/34-31C2. Union Sugar Co. Near Lompoc. Ocean and Legge Aves. Drilled irrigation artesian well in alluvium, diameter 14 inches. Land-surface datum is 64.72 feet above msl. Highest water level 8.56 below lsd, Apr. 16, 1941; lowest 46.38 below lsd, Sept. 24, 1948. Records available: 1941, 1947-54.

Jan. 27	20.95	Apr. 29	28.82	Aug. 31	25.63	Nov. 30	22.68
Feb. 24	19.25	June 30	35.12	Sept. 28	24.10	Dec. 28	b21.68
Mar. 30	20.22	July 28	b33.15	Nov. 3	22.60		

b Pumped recently.

7/34-31C3. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 28 feet. Land-surface datum is 64.68 feet above msl. Highest water level 12.24 below lsd, Apr. 29, 1953; lowest 21.97 below lsd, Dec. 26, 1951. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	17.67	Apr. 29	17.65	Aug. 31	18.14	Nov. 30	19.12
Feb. 24	17.68	June 28	17.28	Sept. 28	18.60	Dec. 28	d19.22
Mar. 30	16.83	July 28	16.90	Nov. 3	18.99		

d Nearby well pumped recently.

7/34-32A1. Mrs. May Clemmens. Near Lompoc. Pine Ave. and 13th Rd. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 180 feet, cased to 175, perforations 147-174. Land-surface datum is about 79 feet above msl. Highest water level 17.6 below lsd, Apr. 11, May 2, 1941; lowest 43.57 below lsd, July 27, 1949. Records available: 1939-42, 1947-54. Jan. 27, 29.54; Feb. 24, 28.33; Mar. 30, 28.74; July 28, 40.70; Nov. 1, 30.49.

7/34-32A4. U. S. Geol. Survey, O. F. Benn property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 31 feet. Land-surface datum is 79.28 feet above msl. Highest water level 24.21 below lsd, Dec. 31, 1947; lowest dry, July 27, 1950-Jan. 30, 1951, Mar. 27, 1951-Dec. 29, 1952. Records available: 1947-54.

Jan. 27	29.63	Apr. 29	29.30	July 28	c27.73	Nov. 1	28.48
Feb. 24	29.24	May 27	29.30	Aug. 31	c28.60	30	c28.12
Mar. 30	29.17	June 30	c28.39	Sept. 28	c28.60	Dec. 28	c27.38

c Nearby well being pumped.

7/34-32P5. U. S. Geol. Survey, J. Bodger & Sons property. Near Lompoc. Ocean and Bailey Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 37 feet. Land-surface datum is 77.60 feet above msl. Highest water level 24.47 below lsd, Feb. 1, 1949; lowest 35.50 below lsd, May 28, 1951. Records available: 1947-54.

Jan. 27	28.55	Apr. 29	27.03	July 28	29.57	Nov. 2	29.70
Feb. 29	28.30	May 27	28.06	Aug. 31	29.64	30	29.59
Mar. 30	28.22	June 30	26.35	Sept. 28	29.58	Dec. 28	29.87

7/34-34H1. Johns-Manville Corp. Formerly Mrs. Margaret Balaam. Lompoc. Pine Ave. and First St. Drilled irrigation water-table well in alluvium, diameter 12 inches, depth 160 feet, perforations 118-156. Land-surface datum is 112.10 feet above msl. Highest water level 33.46 below lsd, May 8, 1941; lowest 56.71 below lsd, July 26, 1951. Records available: 1941-54.

Jan. 27	45.17	June 30	42.74	Sept. 27	45.50	Nov. 29	45.84
Apr. 29	41.60	July 28	44.33	Oct. 26	45.77	Dec. 28	44.49
May 27	43.36						

7/34-35F2. Valla Bros. Near Lompoc. Drilled unused water-table well in alluvium, diameter 15 inches, depth 140 feet, perforations 30-54, 96-136. Land-surface datum is 100.33 feet above msl. Highest water level 9.53 below lsd, Mar. 6, 1941; lowest 32.92 below lsd, Nov. 29, 1951. Records available: 1930-54.

Jan. 26	25.82	Apr. 28	c17.12	July 27	19.77	Oct. 25	26.86
Feb. 23	20.79	May 28	c17.04	Aug. 30	24.93	Nov. 29	27.04
Mar. 30	17.01	June 29	21.10	Sept. 30	25.85	Dec. 29	27.03

c Nearby well being pumped.

7/34-35F6. U. S. Geol. Survey, M. Schuyler property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 55 feet, cased to 55. Land-surface datum is 119.46 feet above msl. Highest water level 35.91 below lsd, Feb. 23, 1944; lowest dry several times, 1945-51. Records available: 1943-54.

Jan. 27	46.43	Apr. 29	38.83	July 28	44.86	Oct. 25	47.82
Feb. 24	43.17	May 27	38.70	Aug. 31	45.94	Nov. 29	47.99
Mar. 30	39.25	June 30	c52.60	Sept. 28	46.83	Dec. 28	48.02

c Nearby well being pumped.

7/34-35F16. M. Schuyler. Near Lompoc. North First St. and College Ave. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 173 feet, cased to 170, perforations 119-170. Land-surface datum is 119.5 feet above msl. Highest water level 39.42 below lsd, Dec. 30, 1952; lowest 61.15 below lsd, July 26, 1951. Records available: 1947-54.

Jan. 27	47.15	Apr. 29	41.12	Aug. 31	47.14	Nov. 29	48.88
Feb. 24	44.25	May 27	40.90	Sept. 28	47.02	Dec. 28	48.65
Mar. 30	40.92	July 28	47.31	Oct. 25	48.70		

7/34-35K2. Mrs. M. McDonald. Near Lompoc. Drilled unused water-table well in alluvium, diameter 10 inches, depth 28 feet. Land-surface datum is 96.01 feet above msl. Highest water level 4.67 below lsd, Mar. 13, Apr. 10, 1941; lowest 19.98 below lsd, May 4, 1950. Records available: 1930-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 26	12.71	Apr. 28	10.76	July 27	12.30	Oct. 25	14.14
Feb. 23	11.80	May 28	10.86	Aug. 30	13.98	Nov. 29	15.90
Mar. 29	11.13	June 29	11.35	Sept. 30	15.56	Dec. 29	13.71

7/34-35P1. W. P. and N. L. Robinson. Near Lompoc. Drilled unused water-table well in alluvium, diameter 8 inches, depth 63 feet. Land-surface datum is 121.3 feet above msl. Highest water level 29.32 below lsd, Mar. 6, 1941; lowest 51.90 below lsd, Mar. 5, 1948. Records available: 1931-50, 1953-54.

Jan. 26	42.68	May 26	37.16	Aug. 30	43.54	Nov. 29	51.20
Feb. 23	39.11	June 29	40.34	Sept. 30	45.04	Dec. 29	49.68
Apr. 28	37.12	July 27	41.30	Oct. 25	48.96		

7/35-20J1. Department of the Army, Camp Cooke Military Reservation. Surf. Drilled unused artesian well in alluvium, diameter 6 inches, depth 108 feet. Land-surface datum is 19.07 feet above msl. Highest water level 4.91 below lsd, Mar. 27, 1952; lowest 31.27 below lsd, July 15, 1930. Records available: 1930-54.

Jan. 27	7.05	Apr. 29	8.69	July 28	8.98	Nov. 2	8.68
Feb. 24	6.95	May 27	8.13	Aug. 31	8.89	30	8.45
Mar. 30	6.55	June 30	8.87	Sept. 28	8.87	Dec. 28	8.12

7/35-22J1. Union Sugar Co. Near Lompoc. Ocean and Renwick Aves. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 185 feet, perforations 133-180. Land-surface datum is 32.04 feet above msl. Highest water level 6.80 below lsd, Apr. 10, 1941; lowest 24.03 below lsd, Apr. 24, 1951. Records available: 1930-35, 1941-42, 1945-54.

Jan. 27	9.81	Apr. 29	13.77	Aug. 31	14.24	Nov. 30	10.73
Feb. 24	8.97	May 26	15.07	Sept. 27	12.72	Dec. 28	10.09
Mar. 30	8.66	June 30	14.21	Nov. 3	11.21		

7/35-22M1. Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 180 feet. Land-surface datum is 28.84 feet above msl. Highest water level 2.87 below lsd, Mar. 27, 1952; lowest 18.51 below lsd, July 27, 1950. Records available: 1947-54. Jan. 27, 7.21; Feb. 24, 5.55; Mar. 30, 6.20; June 30, 9.81; Sept. 28, 9.21; Dec. 28, 6.91.

7/35-22M2. U. S. Geol. Survey, Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 22 feet. Land-surface datum is 28.20 feet above msl. Highest water level 5.14 below lsd, Mar. 27, 1952; lowest 14.95 below lsd, Dec. 31, 1947, Oct. 21, 1948. Records available: 1947-54.

Jan. 27	8.41	Apr. 29	8.26	June 30	8.68	Sept. 28	9.94
Feb. 24	7.45	May 27	7.70	July 28	c8.70	Dec. 28	10.39
Mar. 30	7.14						

c Nearby well being pumped.

7/35-23E2. Union Sugar Co. Near Lompoc. Ocean and Union Sugar Aves. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 212 feet, perforations 170-190. Land-surface datum is 36.59 feet above msl. Highest water level 11.86 below lsd, Mar. 27, 1952; lowest 33.06 below lsd, July 27, 1949. Records available: 1930-35, 1941-43, 1945-54.

Jan. 27	14.21	Mar. 30	13.55	July 28	21.16	Nov. 30	b15.08
Feb. 24	13.96	June 30	16.86	Aug. 31	17.03	Dec. 28	15.98

b Pumped recently.

7/35-23E4. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Ocean and Union Sugar Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 28 feet. Land-surface datum is 36.90 feet above msl. Highest water level 12.22 below lsd, Mar. 27, 1952; lowest 22.67 below lsd, July 22, 1948. Records available: 1947-54.

Jan. 27	16.06	Apr. 29	15.75	July 28	15.70	Nov. 3	16.40
Feb. 24	14.73	May 27	12.80	Aug. 31	16.75	30	15.68
Mar. 30	14.23	June 30	14.32	Sept. 28	16.57	Dec. 28	16.18

7/35-23J2. Union Sugar Co. Near Lompoc. Central and Artesia Aves. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 158 feet. Land-surface datum is 43.93 feet above msl. Highest water level 11.94 below lsd, Jan. 27, 1953; lowest 29.92 below lsd, Aug. 26, 1948. Records available: 1947-54.

Jan. 27	13.53	Apr. 29	19.39	Sept. 28	17.80	Nov. 30	14.25
Feb. 24	12.82	May 27	19.40	Nov. 3	16.58	Dec. 28	13.52
Mar. 30	12.70						

7/35-23J3. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 32 feet, cased to 32. Land-surface datum is 43.43 feet above msl. Highest water level 14.28 below lsd, Jan. 27, 1953; lowest 26.56 below lsd, Oct. 27, 1951. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	16.24	Apr. 29	15.36	July 28	c19.30	Nov. 3	18.25
Feb. 24	15.25	May 27	16.43	Aug. 31	c19.79	30	16.92
Mar. 30	15.43	June 30	c18.33	Sept. 28	19.30	Dec. 28	15.95

c Nearby well being pumped.

7/35-24J1. T. M. Parks. Near Lompoc. Drilled unused artesian well in alluvium, diameter 12 inches, depth 171 feet. Land-surface datum is 59.40 feet above msl. Highest water level 18.26 below lsd, May 6, 1941; lowest 35.83 below lsd, Apr. 27, 1948. Records available: 1941-43, 1947-50, 1952-54.

Jan. 27	24.76	Apr. 29	24.44	July 28	c24.96	Nov. 3	25.25
Feb. 24	24.65	May 27	24.66	Aug. 31	c25.15	30	25.18
Mar. 30	24.38	June 30	24.75	Sept. 28	c25.22	Dec. 28	25.04

c Nearby well being pumped.

7/35-24J2. U. S. Geol. Survey, T. M. Parks property. Near Lompoc. Central and Douglass Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 33 feet. Land-surface datum is 58.98 feet above msl. Highest water level 18.25 below lsd, June 30, 1954; lowest dry several times, 1949, 1951-52. Records available: 1947-54.

Jan. 27	21.37	Apr. 29	22.50	June 30	18.25	Nov. 30	20.25
Feb. 24	21.74	May 27	22.69	Nov. 3	19.78	Dec. 28	20.60
Mar. 30	22.27						

7/35-25F5. Union Sugar Co. Near Lompoc. Central and De Wolfe Aves. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 180 feet, perforations 145-175. Land-surface datum is 47.44 feet above msl. Highest water level 10.13 below lsd, Jan. 27, 1953; lowest 26.86 below lsd, June 5, 1950. Records available: 1945-48, 1952-54. Jan. 27, 11.53; Feb. 24, 10.60; Mar. 30, 11.23; Apr. 29, 22.75; May 27, 23.90; June 30, 24.93; July 28, 23.15.

7/35-25F6. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Central and De Wolf Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 19 feet. Land-surface datum is 47.70 feet above msl. Highest water level 6.09 below lsd, May 2, 1946; lowest 15.90 below lsd, Nov. 28, 1951. Records available: 1945-54.

Jan. 27	12.23	May 27	10.06	Aug. 31	12.80	Nov. 3	13.52
Feb. 24	11.84	June 30	8.99	Sept. 28	13.30	30	13.49
Mar. 30	10.34	July 28	11.45	Oct. 26	13.75	Dec. 28	13.27
Apr. 29	9.44						

7/35-26F1. Union Sugar Co. Near Lompoc. Central and Union Sugar Aves. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 186 feet, perforations 117-176. Land-surface datum is 36.84 feet above msl. Highest water level 0.32 below lsd, Apr. 7, 1941; lowest 27.09 below lsd, July 6, 1949. Records available: 1941, 1947-54.

Jan. 27	8.15	Apr. 29	c16.82	July 28	18.90	Nov. 3	10.83
Feb. 24	7.87	May 27	c17.64	Aug. 31	c18.35	30	9.69
Mar. 30	7.75	June 30	c19.46	Sept. 28	c15.50	Dec. 28	9.13

c Nearby well being pumped.

7/35-26F3. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Union Sugar and Central Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 18 feet. Land-surface datum is 34.70 feet above msl. Highest water level 6.19 below lsd, Jan. 27, 1953; lowest 13.29 below lsd, July 27, 1949. Records available: 1947-54.

Jan. 27	7.27	Apr. 29	c8.14	July 28	8.75	Nov. 30	8.97
Feb. 24	7.43	May 26	c8.95	Sept. 28	c8.47	Dec. 28	8.70
Mar. 30	6.70	June 30	c8.90	Nov. 3	8.95		

c Nearby well being pumped.

7/35-26J4. County of Santa Barbara, Artesia School District. Near Lompoc. Artesia and Central Aves. Drilled public-supply artesian well in alluvium, diameter 8 inches, depth 141 feet, perforations 132-140. Land-surface datum is 40.86 feet above msl. Highest water level 7.50 below lsd, Jan. 27, 1953; lowest 33.63 below lsd, July 26, 1951. Records available: 1947-54.

Jan. 27	8.54	May 27	19.12	Aug. 31	18.70	Nov. 3	12.40
Feb. 24	7.69	June 30	21.00	Sept. 28	14.06	30	9.96
Mar. 30	7.97	July 28	20.27	Oct. 29	11.57	Dec. 28	8.93
Apr. 29	17.80						

7/35-27C3. County National Bank and Trust Co. Near Lompoc. Drilled unused water-table well in Orcutt(?) formation, diameter 12 inches, depth 158 feet, perforations 74-95, 106-158. Land-surface datum is 28.42 feet above msl. Highest water level 0.64 below lsd, Apr. 2, 1941; lowest 24.14 below lsd, June 30, 1939. Records available: 1932-34, 1939-42, 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	c8.46	Apr. 29	11.80	July 28	c15.90	Nov. 2	c10.90
Feb. 24	5.66	May 27	11.55	Aug. 31	c11.59	30	7.76
Mar. 30	c7.60	June 30	c11.34	Sept. 27	9.60	Dec. 28	7.45

c Nearby well being pumped.

7/35-28H2. Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled stock artesian well in Paso Robles formation, diameter 12 inches, depth 67 feet. Land-surface datum is 38.55 feet above msl. Highest water level flowing, Jan. 29, 1953, Jan. 27, Mar. 30, 1954; lowest 22.45 below lsd, Apr. 15, 1931. Records available: 1930-34, 1941, 1953-54. Jan. 27, flowing; Mar. 30, flowing; Apr. 29, 1.18; May 27, 2.40; June 30, 5.88; Aug. 31, 8.44.

7/35-35A3. Gus Aquistapace. Near Lompoc. Ocean and Artesia Aves. Drilled irrigation artesian well in Orcutt(?) formation, diameter 14 inches, depth 100 feet, cased to 98, perforations 78-92. Land-surface datum is 45.58 feet above msl. Highest water level 8.60 below lsd, Mar. 27, 1952; lowest 25.81 below lsd, July 27, 1950. Records available: 1947-54.

Jan. 27	10.11	May 27	16.80	Aug. 31	19.45	Nov. 2	11.09
Feb. 24	9.24	June 30	16.54	Sept. 28	12.54	30	10.52
Mar. 30	8.94	July 28	20.10	Oct. 26	11.70	Dec. 28	9.90
Apr. 29	11.17						

7/35-35A4. U. S. Geol. Survey, Gus Aquistapace property. Near Lompoc. Ocean and Artesia Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 23 feet. Land-surface datum is 45.88 feet above msl. Highest water level 2.51 below lsd, Mar. 27, 1952 lowest 16.95 below lsd, Oct. 29, 1951. Records available: 1947-54.

Jan. 27	6.26	May 27	9.44	Aug. 31	12.00	Nov. 2	11.72
Feb. 24	6.73	June 30	11.43	Sept. 28	12.05	30	11.29
Mar. 30	4.31	July 28	10.08	Oct. 26	11.74	Dec. 28	10.13
Apr. 29	7.00						

7/35-35C2. Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled irrigation artesian well in Orcutt formation, diameter 16 inches, depth 122 feet, perforations 77-112. Land-surface datum is 36.37 feet above msl. Highest water level 0.32 below lsd, Mar. 30, 1954; lowest 10.42 below lsd, May 28, 1951. Records available: 1947-54. Jan. 27, 0.75; Feb. 24, 0.48; Mar. 30, 0.32. Measurement discontinued.

7/35-35C4. U. S. Geol. Survey, Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Ocean and Union Sugar Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 9 feet, cased to 9. Land-surface datum is 36.68 feet above msl. Highest water level 1.65 below lsd, Mar. 30, 1954; lowest 4.79 below lsd, Feb. 26, 1951. Records available: 1947-54.

Jan. 27	1.93	Apr. 29	3.25	July 28	2.84	Nov. 2	4.65
Feb. 24	2.38	May 27	2.74	Aug. 31	3.83	30	3.93
Mar. 30	1.65	June 30	2.73	Sept. 28	4.08	Dec. 28	2.79

7/35-36J3. Ted Holden. Near Lompoc. Drilled irrigation artesian well in older alluvium, diameter 16 inches, depth 102 feet, perforations 71-95. Land-surface datum is 58.76 feet above msl. Highest water level 4.56 below lsd, Apr. 16, 1941; lowest 31.71 below lsd, Apr. 10, 1953. Records available: 1930-42, 1953-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.43	20.89	20.61	.....	.....	.....	27.72	28.34	25.34	23.63	22.51	21.97
2	22.38	20.87	20.77	.....	.....	26.75	27.85	28.22	25.69	23.58	22.50	21.94
3	22.65	20.82	20.93	.....	.....	26.78	27.69	28.08	25.71	23.69	22.46	21.84
4	22.78	20.81	21.04	.....	.....	26.36	27.09	27.44	25.29	23.43	22.55	21.78
5	22.93	20.80	21.04	.....	.....	26.86	26.79	27.19	25.15	23.35	22.65	21.78
6	23.45	20.78	21.03	.....	.....	26.35	26.66	26.89	24.85	23.30	22.85	21.70
7	23.80	20.75	21.02	.....	.....	26.24	26.23	26.62	24.64	23.20	22.85	21.65
8	24.08	20.68	21.04	.....	.....	26.49	26.95	26.31	24.49	23.10	22.73	21.60
9	24.52	20.67	21.06	.....	.....	26.59	27.43	26.06	24.36	22.97	22.61	21.46
10	c27.32	20.70	21.02	.....	.....	26.53	27.86	25.94	24.27	22.88	22.74	21.45
11	c27.83	20.70	21.05	.....	.....	26.54	28.36	26.09	24.15	22.85	22.53	21.46
12	24.38	20.60	21.08	.....	.....	26.26	27.81	26.13	24.00	22.91	22.47	21.46
13	23.35	20.50	21.27	.....	.....	25.56	28.90	25.88	23.93	22.64	22.51	21.40
14	22.80	20.50	21.60	.....	.....	25.18	29.57	25.73	24.00	22.90	22.43	21.35
15	22.53	20.52	22.45	.....	.....	25.49	29.44	25.56	23.95	23.15	22.45	21.15

7/35-36J3--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	22.34	20.50	23.17	.....	.....	25.64	29.41	25.65	23.75	23.17	22.42	21.16
17	22.09	20.45	22.12	.....	.....	25.96	29.76	25.86	23.69	23.06	22.26	.....
18	21.87	20.44	21.45	.....	.....	26.12	30.29	25.90	23.65	22.93	22.15	21.33
19	21.66	20.39	21.00	.....	.....	26.50	30.27	26.31	23.63	22.84	22.08	21.30
20	21.67	20.32	20.85	.....	.....	26.38	29.50	26.65	23.55	22.78	21.98	21.28
21	21.65	20.30	20.67	.....	.....	26.21	29.75	26.64	23.55	22.76	21.95	21.28
22	21.51	20.28	20.49	.....	.....	26.22	29.55	26.69	23.52	22.71	21.92	21.24
23	21.38	20.27	20.47	.....	.....	26.68	29.51	26.49	23.44	22.59	21.92	21.24
24	21.27	20.23	20.38	.....	.....	28.78	29.34	26.50	23.36	22.56	21.89	21.29
25	21.22	20.23	20.38	.....	.....	27.66	29.00	26.57	23.36	22.55	21.89	21.29
26	21.17	20.27	20.36	.....	.....	27.54	29.09	26.37	23.72	22.92	21.85	21.29
27	21.12	20.32	20.25	.....	.....	30.58	29.17	26.22	23.71	22.70	21.86	21.29
28	21.07	20.44	.....	.....	.....	30.62	29.42	26.04	23.73	22.66	21.86	21.29
29	23.02		.....	.....	.....	30.45	29.11	25.45	23.72	22.70	22.05	21.29
30	20.99		.....	.....	.....	28.47	28.85	25.19	23.70	22.70	21.97	21.29
31	20.92		.....		.....		28.62	25.07		22.56		21.29

c Nearby well being pumped.

7/35-36J6. Ted Holden. Formerly Denholm Seed Co. Near Lompoc. Ocean and Douglass Aves. Drilled irrigation artesian well in alluvium, diameter 16 inches, depth 102 feet. Land-surface datum is 58.50 feet above msl. Highest water level 20.05 below lsd, Mar. 27, 1952; lowest 38.15 below lsd, July 27, 1950. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 27	21.48	Apr. 29	24.29	Sept. 28	24.29	Nov. 30	22.08
Feb. 24	20.36	July 28	b30.95	Nov. 2	22.77	Dec. 28	21.36
Mar. 30	20.24	Aug. 31	25.79				

b Pumped recently.

7/35-36J7. U. S. Geol. Survey, Denholm Seed Co. property. Near Lompoc. Ocean and Douglass Aves. Drilled observation water-table well in alluvium, diameter 2 inches, depth 32 feet. Land-surface datum is 58.50 feet above msl. Highest water level 19.17 below lsd, Jan. 27, 1953; lowest 31.32 below lsd, July 27, 1950. Records available: 1947-54.

Jan. 27	21.39	Apr. 29	20.98	July 28	26.08	Nov. 2	22.46
Feb. 24	20.49	May 27	c23.80	Aug. 31	24.59	30	21.95
Mar. 30	20.15	June 30	c24.84	Sept. 28	23.40	Dec. 28	21.40

c Nearby well being pumped.

Cuyama Valley

7/24-13C2. Ventura County, Apache School District. Near Camp Ozena at Apache School. Drilled domestic water-table well in alluvium, diameter 8 inches, depth 165 feet. Land-surface datum is about 3,418 feet above msl. Highest water level 18.92 below lsd, May 27, 1952; lowest 47.23 below lsd, May 28, 1951. Records available: 1950-54.

Jan. 26	26.06	Apr. 27	21.25	July 27	24.09	Oct. 27	28.05
Feb. 23	24.00	May 26	21.48	Aug. 26	25.60	Nov. 26	28.57
Mar. 30	22.29	June 29	22.55	Sept. 28	27.00	Dec. 29	28.13

8/24-8L1. Hickey Bros. Land Co. Drilled unused water-table well in alluvium and older continental deposits, diameter 12 inches, depth 290 feet. Land-surface datum is about 3,050 feet above msl. Highest water level 122.19 below lsd, Sept. 28, 1953; lowest 151.51 below lsd, Jan. 28, 1952. Records available: 1950-54.

Jan. 26	126.39	Apr. 27	127.14	July 27	c124.38	Oct. 27	128.17
Feb. 23	126.75	May 26	c126.02	Aug. 26	c125.19	Nov. 26	128.90
Mar. 30	126.89	June 29	c123.87	Sept. 28	c127.10	Dec. 29	130.44

c Nearby well being pumped.

9/24-19Q1. Sam Knittle. Drilled unused water-table well in alluvium, diameter 6 inches, depth 90 feet. Land-surface datum is 2,784.19 feet above msl. Highest water level 16.13 below lsd, May 30, 1944; lowest 77.12 below lsd, Nov. 26, 1954. Records available: 1941-54.

Jan. 26	75.21	Apr. 27	74.85	July 27	c75.65	Oct. 27	76.27
Feb. 23	74.97	May 26	74.92	Aug. 26	c76.41	Nov. 26	77.12
Mar. 30	74.70	June 29	75.31	Sept. 28	76.23	Dec. 29	75.48

c Nearby well being pumped.

9/24-33M1. Walter C. Barnes. Drilled unused water-table well in older continental deposits, diameter 12 inches, depth 233 feet. Land-surface datum is about 3,049 feet above msl. Highest water level 170.81 below lsd, May 1, 1950; lowest 187.31 below lsd, Mar. 27, 1952. Records available: 1950-54.

Jan. 26	182.32	Apr. 27	181.75	July 26	181.63	Oct. 27	182.13
Feb. 23	182.12	May 26	181.65	Aug. 26	182.59	Nov. 26	182.90
Mar. 30	181.92	June 29	181.58	Sept. 28	181.86	Dec. 29	182.38

9/25-2N1. Julius Broden. Near Cuyama. Drilled unused water-table well, diameter 8 inches, depth 254 feet. Land-surface datum is about 2,550 feet above msl. Highest water level 139.14 below lsd, Mar. 26, 1953; lowest 147.05 below lsd, Nov. 26, 1954. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 23	140.51	May 26	140.87	Aug. 26	142.15	Nov. 26	147.05
Mar. 30	140.66	June 29	140.96	Sept. 28	141.49	Dec. 29	141.94
Apr. 27	140.72	July 27	141.70	Oct. 27	140.01		

9/25-13B1. William B. Farry. Near Cuyama. Drilled domestic water-table well, diameter 10 inches, depth 120 feet. Land-surface datum is about 2,700 feet above msl. Highest water level 101.82 below lsd, July 8, 1952; lowest 104.59 below lsd, Sept. 28, 1954. Records available: 1952-54. Jan. 26, 104.51; Feb. 23, 104.51; Mar. 30, 104.45; Apr. 27, 104.50; May 26, 104.51, pumped recently; June 29, 104.52, pumped recently; Sept. 28, 104.59.

10/25-21G1. E. H. Mettler. Near Cuyama. Cuyama River and State Highway 166. Drilled irrigation water-table well in alluvium and older continental deposits, diameter 16 to 10 inches, depth 657 feet, cased to 657, perforations 108-348, 354-655. Land-surface datum is about 2,357 feet above msl. Highest water level 77.41 below lsd, Jan. 29, 1947; lowest 127.50 below lsd, Dec. 29, 1954. Records available: 1947-54. Jan. 26, 114.37; Feb. 23, 113.57; Mar. 30, 114.81; Nov. 26, 123.00; Dec. 29, 127.50.

10/25-24E1. E. H. Mettler & Sons. Near Cuyama. Drilled domestic water-table well in older continental deposits, diameter 16 inches, reported depth 600 feet. Land-surface datum is about 2,470 feet above msl. Highest water level 198.00 below lsd, May 31, 1950; lowest 217.59 below lsd, Sept. 28, 1954. Records available: 1950, 1952-54. Jan. 26, 213.90; Mar. 30, 213.85; Apr. 27, 214.36; May 26, 215.09; June 29, 215.61; July 26, 216.19; Sept. 28, 217.59.

10/25-29P1. Oscar Schaeffer. Near Cuyama. Drilled irrigation water-table well, diameter 16 inches, depth 403 feet. Land-surface datum is about 2,370 feet above msl. Highest water level 122.36 below lsd, Feb. 24, 1953; lowest 147.93 below lsd, Sept. 28, 1954. Records available: 1952-54. Jan. 26, 127.22; Feb. 23, 126.39; Sept. 28, 147.93; Nov. 26, 146.89; Dec. 28, 133.9[illegible].

10/25-30F1. Adolph Kirschenmann. Drilled irrigation water-table well in alluvium and older continental deposits, diameter 16 inches, depth 376 feet, cased to 374, perforations 124-160, 170-187, 196-202, 229-232, 241-250, 265-268, 274-313, 332-370. Land-surface datum is about 2,311 feet above msl. Highest water level 47.36 below lsd, Apr. 24, 1945; lowest 94.80 below lsd, Sept. 28, 1954. Records available: 1941-54. Sept. 28, 94.80; Nov. 26, 87.41; Dec. 29, 84.09.

10/26-16Q1. H. S. Russell. Near Cuyama. Drilled irrigation well, diameter 14 inches. Land-surface datum is about 2,205 feet above msl. Highest water level 33.33 below lsd, Feb. 23, 1954; lowest 45.74 below lsd, Aug. 26, 1954. Records available: 1954.

Jan. 26	33.77	Apr. 27	35.87	July 27	41.50	Oct. 27	42.56
Feb. 23	33.33	May 26	40.07	Aug. 26	45.74	Nov. 26	42.11
Mar. 30	33.82	June 29	40.51	Sept. 28	44.40	Dec. 29	36.00

10/26-22A1. W. C. Ramelli. Drilled unused artesian well in alluvium and older continental deposits, diameter 12 inches, depth 423 feet, cased to 423, perforations 103-115, 124-145, 176-187, 208-237, 250-305, 327-343, 355-391, 402-423. Land-surface datum is about 2,200 feet above msl. Highest water level 0.51 above lsd, Mar. 1, 1944; lowest 37.40 below lsd, Aug. 26, 1954. Records available: 1941-54.

Jan. 26	9.75	Apr. 27	27.80	July 27	35.22	Oct. 27	18.29
Feb. 23	9.88	May 26	30.68	Aug. 26	37.40	Nov. 26	17.25
Mar. 30	17.70	June 29	28.57	Sept. 28	31.29	Dec. 29	12.59

10/27-11C1. A. P. Anderson. Near Cuyama. Drilled domestic and irrigation water-table well in alluvium and older continental deposits, diameter 14 inches, depth 378 feet, plugged back to 127, perforations 36-117. Land-surface datum is about 1,963 feet above msl. Highest water level 23.94 below lsd, June 17, 1942; lowest 41.38 below lsd, Sept. 28, 1954. Records available: 1942, 1947-54. Mar. 30, 27.45; Sept. 28, 41.38; Dec. 29, 28.99.

10/27-11H1. Walt Smith. Near Cuyama. Drilled irrigation well, diameter 14 inches. Land surface datum is about 1,995 feet above msl. Highest water level 21.14 below lsd, Feb. 23, 1954; lowest 24.79 below lsd, Dec. 29, 1954. Records available: 1954. Jan. 26, 22.08; Feb. 23, 21.14 Mar. 30, 22.18; Dec. 29, 24.79.

10/27-12R1. William Kirschenmann Estate. Drilled domestic and irrigation water-table well in alluvium, diameter 12 inches, depth 131 feet, cased to 131, perforations 53-128. Land-surface datum is about 2,036 feet above msl. Highest water level 38.58 below lsd, Apr. 28, 1942; lowest 57.52 below lsd, Sept. 28, 1954. Records available: 1941-54.

Jan. 26	49.24	Apr. 27	47.39	Aug. 26	53.67	Nov. 26	55.29
Feb. 23	48.54	May 26	49.11	Sept. 28	57.52	Dec. 29	52.29
Mar. 30	47.80	July 29	52.27	Oct. 27	55.77		

HAWAII

By K. J. Takasaki

Scope of Water-Level Program

Investigation of ground-water resources in Hawaii in 1954 was continued in cooperation with the Hawaii Division of Hydrography. Water-level measurements were made in 156 wells, 64 of which were measured periodically. In addition, chloride determinations were made on water from 270 wells. Two recording gages and three nonrecording gages were maintained. The Honolulu Board of Water Supply made water-level measurements in 77 wells on the Island of Oahu. The Board maintained recording gages on 17 wells. Figures 35-39 show the location of observation wells on the Islands of Hawaii, Kauai, Maui, Molokai and Lanai, and Oahu.

Precipitation

The low rainfall period which persisted throughout the Territory during the last half of 1953 continued into January and part of February. Total precipitation for the Territory as a whole was slightly above normal for the year. The winter and early spring and autumn seasons are generally wetter than the rest of the year, but in 1954 there was a deviation from the usual rainfall distribution pattern; the 1953 deficiency continued into the early months of 1954, and the summer was wetter than usual. The year ended with rainfall well above normal in December and part of November. In the Honolulu intake area, distribution of rainfall during 1954 was in general similar to that of the Territory as a whole.

The following table shows percentage of normal monthly rainfall in the ground-water recharge area near Honolulu in 1954. The figures were compiled by the Honolulu Board of Water Supply and are based on records of ten stations in the recharge area. Rainfall records for the area for the 10-year period ending in 1954 are shown in figure 40.

Percentage of normal rainfall in Honolulu area, 1954

Month	Percentage of normal rainfall	Month	Percentage of normal rainfall	Month	Percentage of normal rainfall
January	41	May	82	September	60
February	98	June	76	October	87
March	90	July	192	November	159
April	68	August	110	December	223
				Percentage of normal	107

Pumpage

The total pumpage of ground water during 1954 in the Territory of Hawaii was about 204,000 million gallons or an average of about 560 mgd (million gallons per day). This represents a decrease of about 47,500 million gallons (130 mgd) from the 1953 total of 252,000 million gallons (690 mgd), which was the highest on record in the Territory. All the islands showed some decrease in pumpage. Oahu with a decrease of 27,284 million gallons (75 mgd) and Maui with 18,544 million gallons (51 mgd) accounted for about 97 percent of the total decrease for the Territory. The pumping rate on Maui was about 219 mgd, 80 percent of which was drawn from aquifers in the Maui Isthmus. In addition to the ground water pumped, 78,357 million gallons (215 mgd) was delivered to the Maui Isthmus in East Maui Irrigation Co. ditches. Oahu pumped at a rate of 302 mgd, 60 percent of which was drawn from basalts of the Koolau volcanic series in the Pearl Harbor area. Oahu and Maui accounted for 93 percent of the total ground-water pumpage for the Territory.

Pumpage, in millions of gallons, from wells and tunnels in the Territory of Hawaii, 1954

Island of Hawaii		
Hamakua Mill Co.		
Paauilo well (shaft 5)		951
Hawaiian Agricultural Co.		
Pahala shaft (shaft 8)		518
Hutchinson Sugar Plantation Co.		
Honuapo well (10)		e531
Kaiwiki Sugar Co.		
Domestic tunnel (shaft 6)	e90	
Cane cleaning plant tunnel (shaft 6)	440	530
Kohala Sugar Co.		
Hoea pump (shaft 2)	688	
Kohala pump (shaft 4)	2,082	
Waikane pump (shaft 1)	314	
Honokane tunnel	e799	
Halaula domestic well	109	3,992
Olaa Sugar Co.		
Olaa shaft (shaft 7)		915
Pepeekeo Sugar Co.		e65
Total		7,502
Island of Kauai		
County of Kauai		
Hanapepe shaft	65	
Waimea shaft	107	
Kekaha shaft	42	
Koloa well (16)	22	236
Kekaha Sugar Co.		
Well 9 (27)	106	
Wells K-1 to K-5 (32)	1,170	
Wells M-1 to M-12 (45)	1,323	
Kekaha pump	298	
Mana pump	120	
Waiawa pump	1,179	4,196
Lihue Plantation		
Domestic shaft	e500	
Kealia wells (2)	e100	
Hanamaulu shaft	e3	603
Olokele Sugar Co.		
Domestic shaft		e540
Total		p5,575
Island of Lanai		
Hawaiian Pineapple Co.		
Tunnel 1	71	
Shaft 2	51	
Well 1 (Palawai)	48	
2 (Hii Bench)	94	
3 (Kapano)	140	
4 (Soules Bench)	35	
5 (Waiakeakua)	95	534
Total		534

Island of Maui		
Hawaiian Commercial & Sugar Co.		
Pump 1 (14)	1,319	
2A-B (25)	4,517	
3A-B (15)	5,689	
4 (24)	2,856	
5 (19)	2,920	
6A-B (18)	6,694	
7A-B (16)	8,569	
8 (17)	4,424	
9 (22)	4,160	
Central Power Plant (20)	144	
Pump 11A-B (32)	.....	
12 (31)	1,514	
13A-B (29)	4,428	
16A, B, D (30)	4,576	
17 (28)	3,150	
18A-B (27)	4,654	
19	2,381	61,995
Pioneer Mill Co.		
Pump A (9) Lahaina	2,194	
B (8) Lahaina	1,080	
C (7) Mill	2,736	
D (3) Kaanapali	1,717	
F (2) Honokawai	1,041	
G (4) Hahakea	859	
H (3) Kaanapali	1,956	
L (6) Wahikuli	111	
M (5) Kahoma	1,911	
N (10) Olowalu	670	
O (11) Olowalu	38	
P (12) Ukumehame	305	
R Honokawai shaft	943	15,562
Maui Pineapple Co.		
Kahului Cannery (13)		e300
Wailuku Sugar Co.		
Wailuku shaft		2,228
Total		80,085
Island of Molokai		
County of Maui		
Conant-Kawela (shaft 4)	69	
Kalae tunnel (tunnel 5)	3	
Ualapue well (shaft 6)	31	103
California Packing Corp.		
Kualapuu (15)	22	
Kalualohe (17)	123	145
Hawaiian Homes Commission		
Kauluwai (16)		e24
Total		272
Island of Oahu		
Ewa Plantation Co.		
Pump 2 (257)	852	
3 (264)	3,230	
4 (264)	2,886	
5 (259)	2,228	
6 (259)	2,382	
7 (263)	2,349	

Pumpage, in millions of gallons, from wells and tunnels in the Territory of Hawaii, 1954--Continued

Island of Oahu--Continued		
Ewa Plantation Co.--Continued		
Pump 8 (270)	762	
10 (276)	2,586	
11 (276)	1,420	
12 (276)	1,229	
13 (276)	20	
15 (shaft 3)	2,926	
16 (shaft 3)	4,280	
20 (dug well 20)	395	
21 (dug well 21)	265	
22 (dug well 22)	175	
23 (dug well 23)	e1,732	
24 (dug well 24)	354	
25 (254)	403	30,474
California Packing Corp.		
Kunia well (330-5)		50
Hawaiian Electric Co.		
Tunnel (shaft 8)	2,357	
Wells (199-1)	1,489	
Kaluaoopu Spring	2,178	6,024
Honolulu Board of Water Supply		
Kalihi station (shaft 6)	2,954	
Waialae station (shaft 7)	140	
Halawa station (shaft 12)	4,637	
Kaimuki station (7)	1,065	
Beretania station (88)	1,980	
Kalihi station (128)	1,563	12,339
Honolulu Suburban Water System		
Aiea (190-1B)	16	
Pearl City (shaft 9)	127	
Waipahu (241)	118	
Nanakuli (dug well 16)	1	
Lualualei (shaft 2)	67	
Makaha (shaft 1)	75	
Wahiawa (330-3, 330-6)	463	
Waialua (333)	67	
Hauula (394)	31	
Kaaawa (shaft 10)	52	
Haiku tunnel	735	
Kahaluu tunnel	758	
Luluku tunnel and springs	55	
Kahanaiki (422)	5	
Waimanalo		
City and County tunnel	129	
Plantation tunnel	40	
Waialee Training School (337-1 & 2)	25	
Waianae		
City and County tunnel	(s)	
Other tunnels	(s)	2,764
Kahuku Plantation Co.		
Pump 1 (353)	878	
2 (341)	2,672	
3 (362)	1,521	
5 (352)	1,601	
6 (362-1)	236	
7 (363)	128	
8 (357)	217	
12 (361)	112	
14 (338)	e534	

Island of Oahu--Continued		
Kahuku Plantation Co.--Continued		
Pump 15 (348)	104	
17 (362	99	
20 (377)	920	
23 (387)	110	
25 (373)	96	
26 (392)	10	
27 (396)	62	
Mill Pump (355)	e728	10,030
Oahu Sugar Co.		
Waipahu section		
Pump 1 (247)	384	
2 (249)	2,199	
3 (249)	1,554	
4 & 4B (248 & tunnel)	1,443	
5 (274)	3,058	
6 & 6B (239)	2,454	
7 (246)	3,074	
8 (Waikele Spring)	1,892	
9 (Waiawa Spring)	468	
Aiea section		
Pump 1 (185)	303	
2 (196)	0	
3 (186)	731	
4 (197)	2,768	
5 & 5B (189)	1,097	
6 (Kalauao Spring)	822	
16 (199-1)	(q)	
21 & 21B (shaft 13)	928	23,175
Private wells in Honolulu		r4,015
Territorial Hospital, Kaneohe (416)		63
U. S. Army		
Schofield (shaft 4)		842
U. S. Navy		
Aiea (shaft 5)	199	
Red Hill (shaft 11)	457	
Barber's Point (shaft 14)	543	
Aiea wells (187)	10	
Wahiawa Radio Station (330-2)	0	
Pearl City wells	11	
Lualualei tunnel	116	
Waiawa (shaft 16)	5,046	6,383
Waialua Agricultural Co.		
Pump 1 (321)	389	
2 (322A to I)	1,699	
2A (322J to N)	1,694	
3A & B (331)	1,564	
4 (334)	1,002	
5 (285)	945	
6A, B, & C (298, 299, & 301)	2,139	
7 (324)	700	
8 (329)	159	
9 (327)	113	
10 (323)	1,073	
11 (296)	78	

Pumpage, in millions of gallons, from wells and tunnels in the Territory of Hawaii, 1954--Continued

Island of Oahu--Continued			Island of Oahu--Continued		
Waialua Agricultural Co.--Continued			Waianae Development Co.		
Pump 12 (332)	134		City and County tunnel	e850	
13 (328)	142		Other tunnels	e330	1,180
15 (317)	18				
16 (316)	40		Total		110,342
17 (shaft 17)	419				
Mill pump (319)	2,506	12,891	Grand total		204,310
Waimano Home					
(196-1)	17				
(196-1B)	95	112			

e Estimated.

p Pumpage for McBryde Sugar Co. not included. Three pumps in Hanapepe and one in Lawai Valley pump both surface and ground water. It is not possible to separate ground-water draft from surface water.

q Pumpage from Pump 16 (199-1) included with that of Hawaiian Electric Co.

r Reported by Honolulu Board of Water Supply. Includes pumpage from wells belonging to military establishments in Honolulu.

s Flow from city and county tunnel and other Waianae tunnels included with that of Waianae Development Co.

Interpretation of Water-Level Fluctuations

During most of 1954, water levels in observation wells on Oahu continued the steady decline from the high stages of late 1951 and early 1952. Deficient rainfall combined with heavy pumping kept water levels from reaching the usual high winter and early spring stages at the close of 1953 and the beginning of 1954. Above-normal rainfall in the summer of 1954 and the accompanying decrease in the usual heavy summer pumpage probably kept water levels from reaching lower stages. Lowest water levels on record were recorded in test borings 24 (area 4) and 27 (area 6) and in well 356 in area 8. The year ended with sharp rises in water levels as the result of above-normal rainfall and below-normal pumpage during November and December. As in 1953, water levels in 1954 were modified somewhat from the usual pattern of high winter and early spring stages. The greatest deviation during 1954 from the usual annual pattern was the reduction in the range of water level between the high winter stage and the low stage in the summer months. There were slight increases in the chloride content of the water in observation wells in areas 7, 8, and 10; elsewhere on Oahu there were no significant changes. An exception is test boring 2 in area 7 which showed an increase of 500 percent in chloride content over 1953. This increase may be local in nature and induced by pumpage of a well and shaft nearby. (See figs. 40 and 41.) The observation wells on Maui showed definite signs of recovering from the low stages of 1953. The chloride content of the water in wells on the Maui Isthmus remained about the same during the year. Water in shafts along the west coast of Maui showed marked increases in chloride content over 1953, despite small annual gains in water levels throughout the area. On Molokai, water levels showed some gains in 1954. Rainfall three times the normal in December of 1954 on the Island of Hawaii caused water levels in shaft 7 to rise as much as 8 feet during the month. (See fig. 42.) There was some increase in the chloride content of the water in shaft 6 on Hawaii during most of 1954 but a marked change to the good quality of former years occurred as the year ended. On the Island of Kauai, water levels were generally slightly higher and the chloride content of the water in wells slightly lower than in 1953.

Month of high and low heads in artesian wells and net gain or loss in static head, in feet, in typical wells on the Island of Oahu, 1954

Area	Name	Well	High	Low	Net gain or loss
1	St. Louis Heights	2	December	June	+1.23
2	Makiki-Pacific Heights	36A	December	September	+1.56
3	Kapalama	132	December	September	+1.63
4	Moanalua	T-24	December	October	+1.80
5	Wilhelmina Rise	T-44	February	June	-.57
6	Pearl Harbor	201	December	June	+2.52
		244	December	September	+3.95
		266	December	June	+4.86
7	Waialua	326	December	June	+.50
8	Kahuku	356	December	June	+.33
		396	December	July	+1.36
9	Kahana	405	December	January	+2.00
10	Kaaawa	406	December	January	+1.31
11	Gilbert	T-5	December	July	+.40
12	Mokuleia	286	February	June	-.25
		308	December	May	-.10

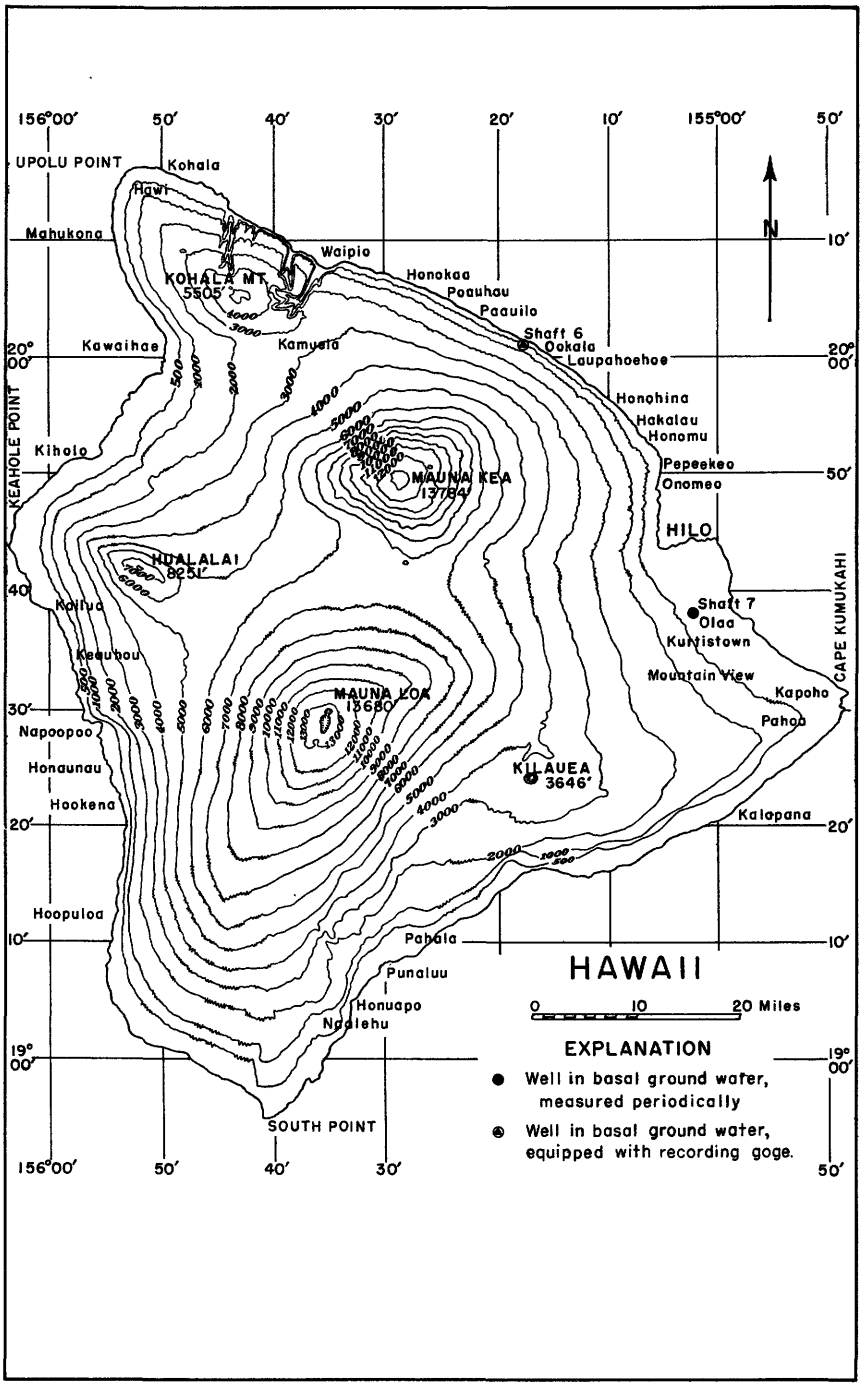


Figure 35. --Location of observation wells on Island of Hawaii, 1954.

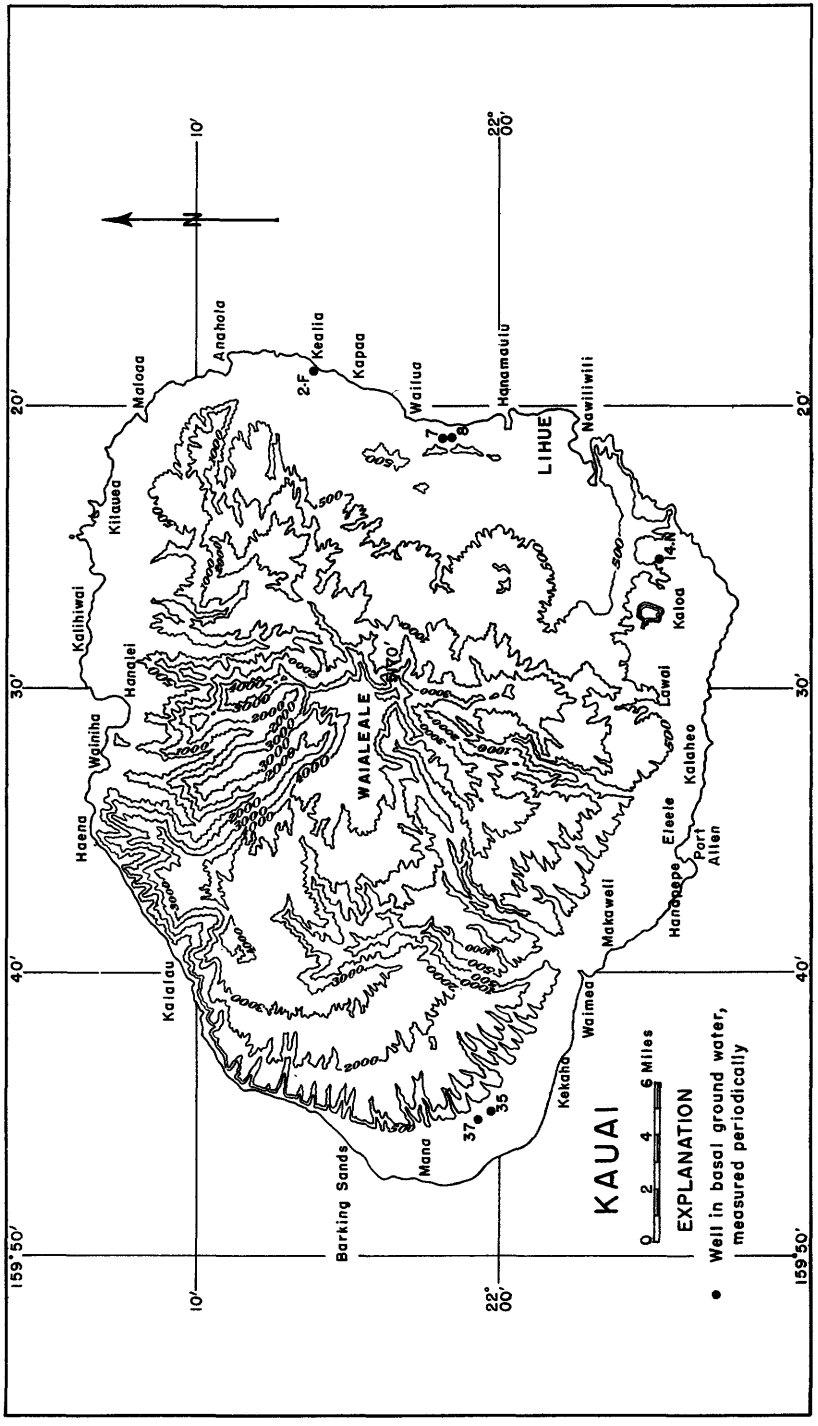


Figure 33.--Location of observation wells on Island of Kauai, 1954.

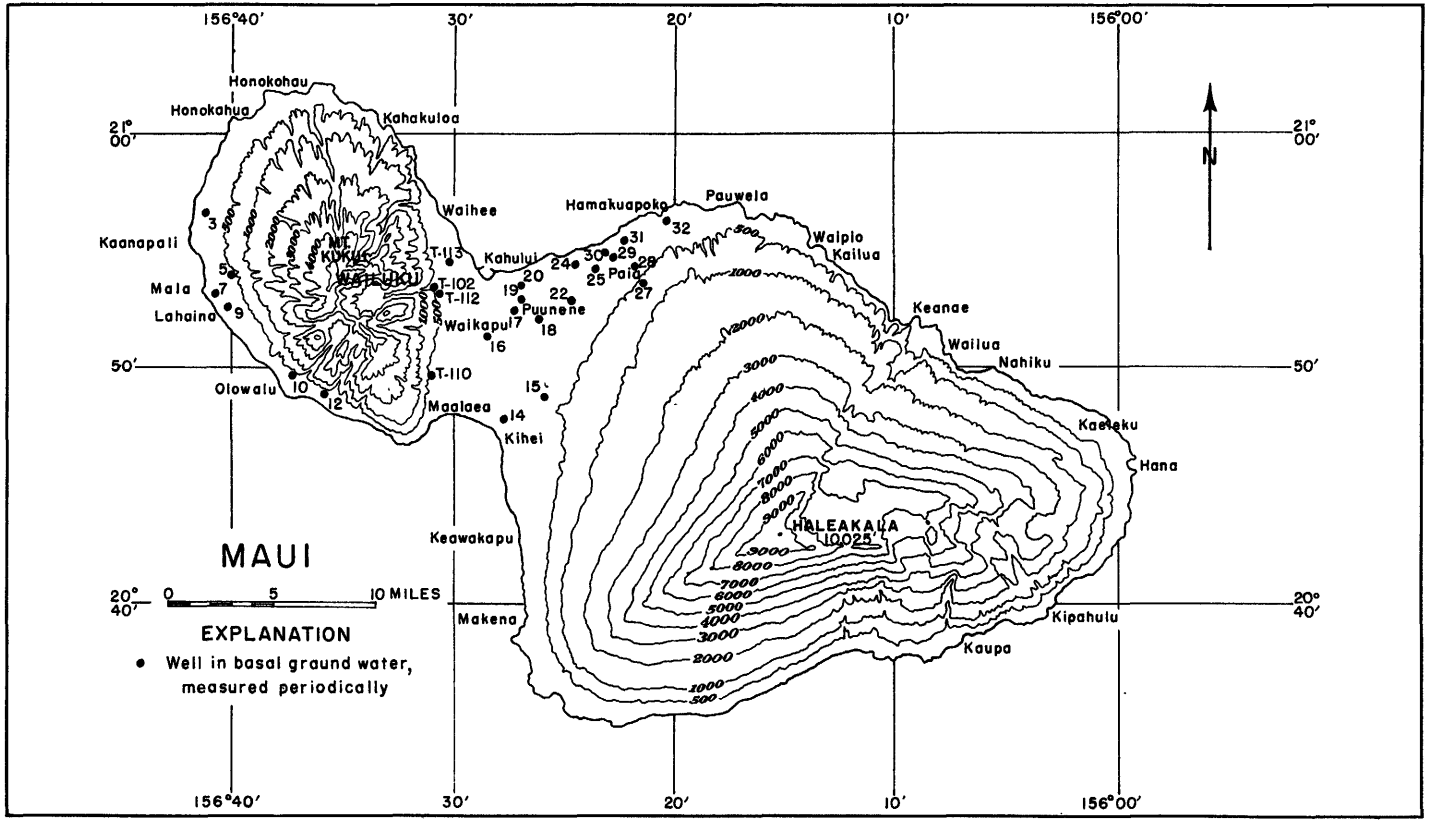


Figure 37. --Location of observation wells on Island of Maui, 1954.

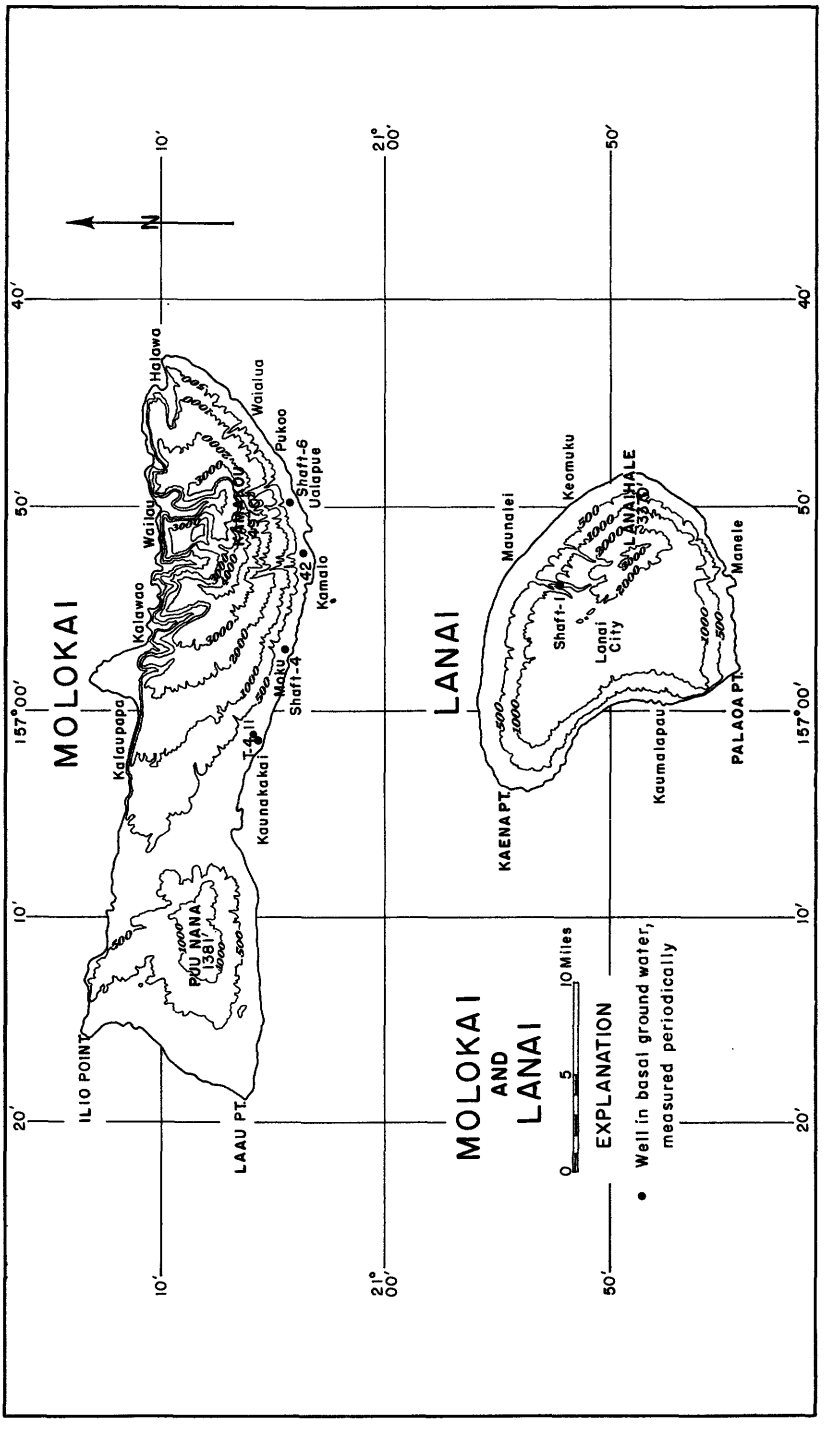


Figure 38. --Location of observation wells on Islands of Molokai and Lanai, 1954.

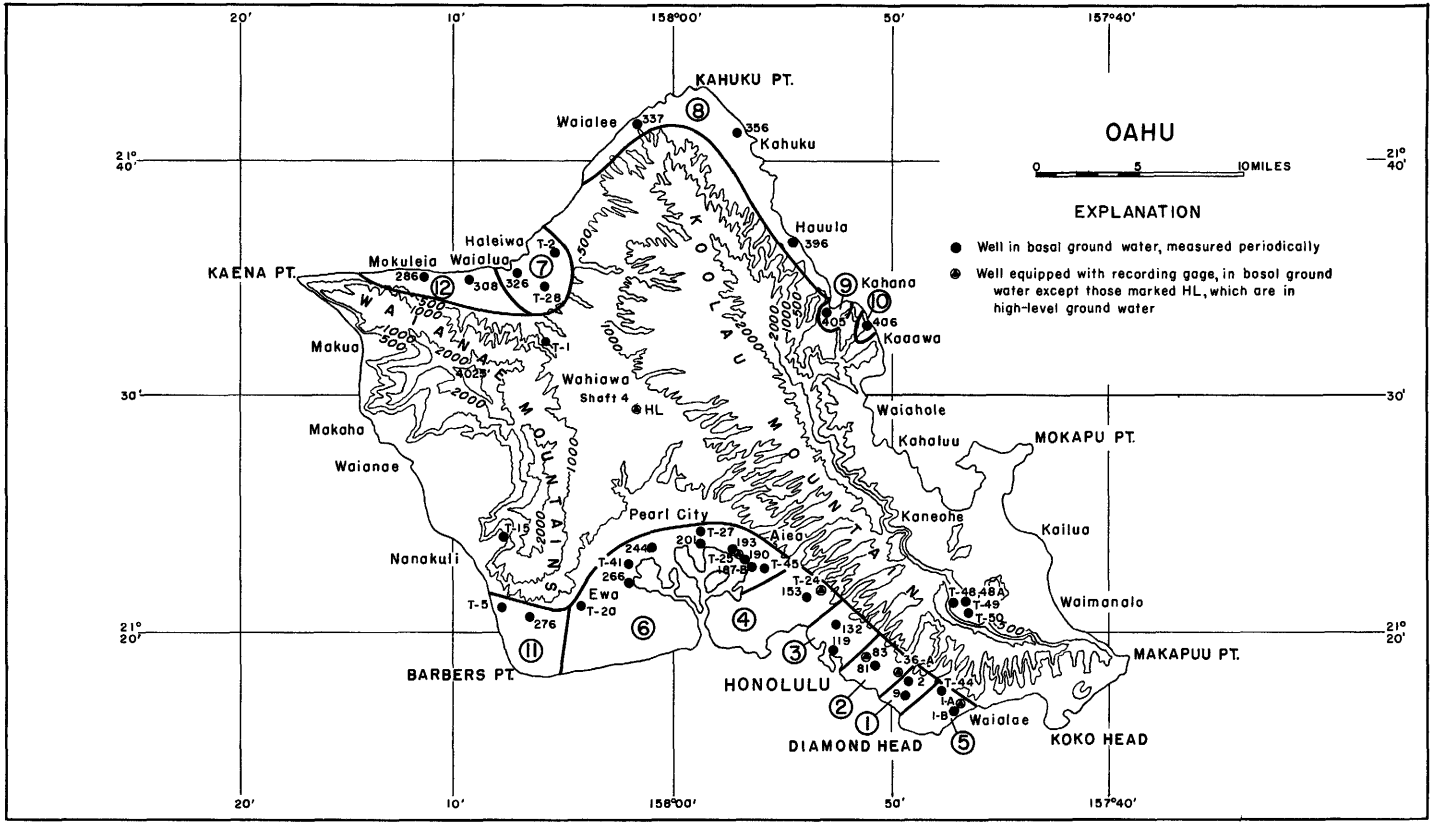


Figure 39. --Location of observation wells on Island of Oahu, 1954.

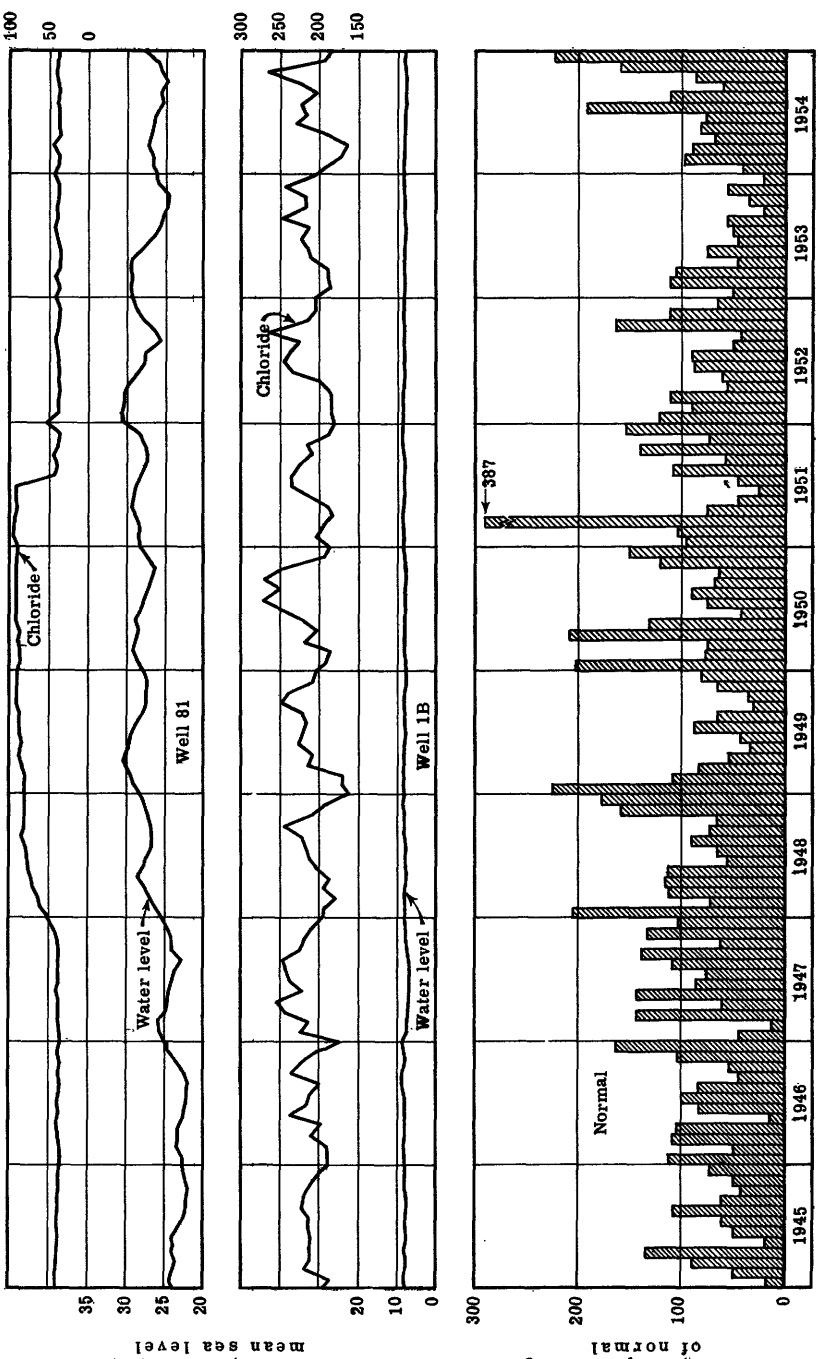


Figure 40.--Water levels and chlorides in wells 81 and 1B in Honolulu and precipitation in the Honolulu watershed, 1944-54.

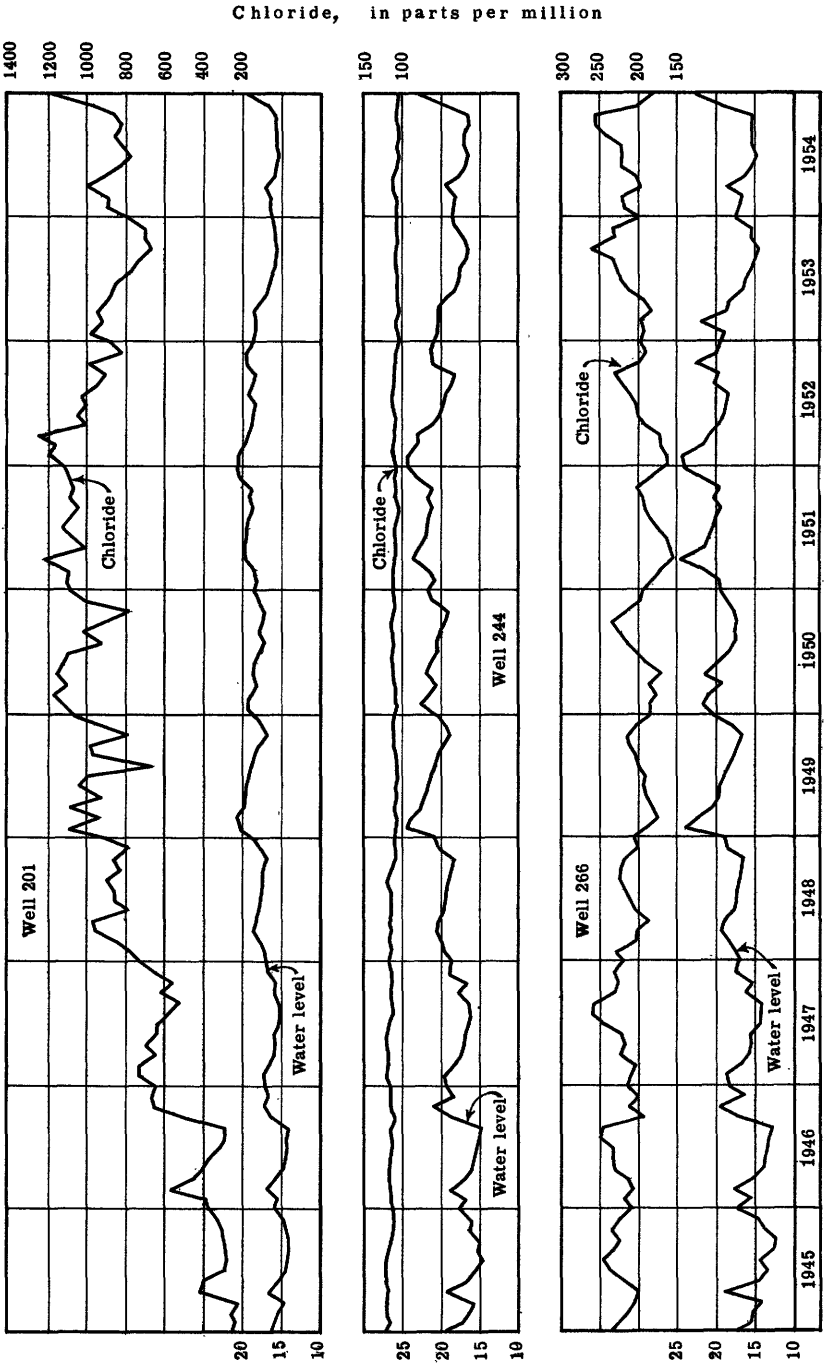


Figure 41.--Water levels and chlorides in wells 201, 244, and 266 in the Pearl Harbor area, Oahu, 1945-54.

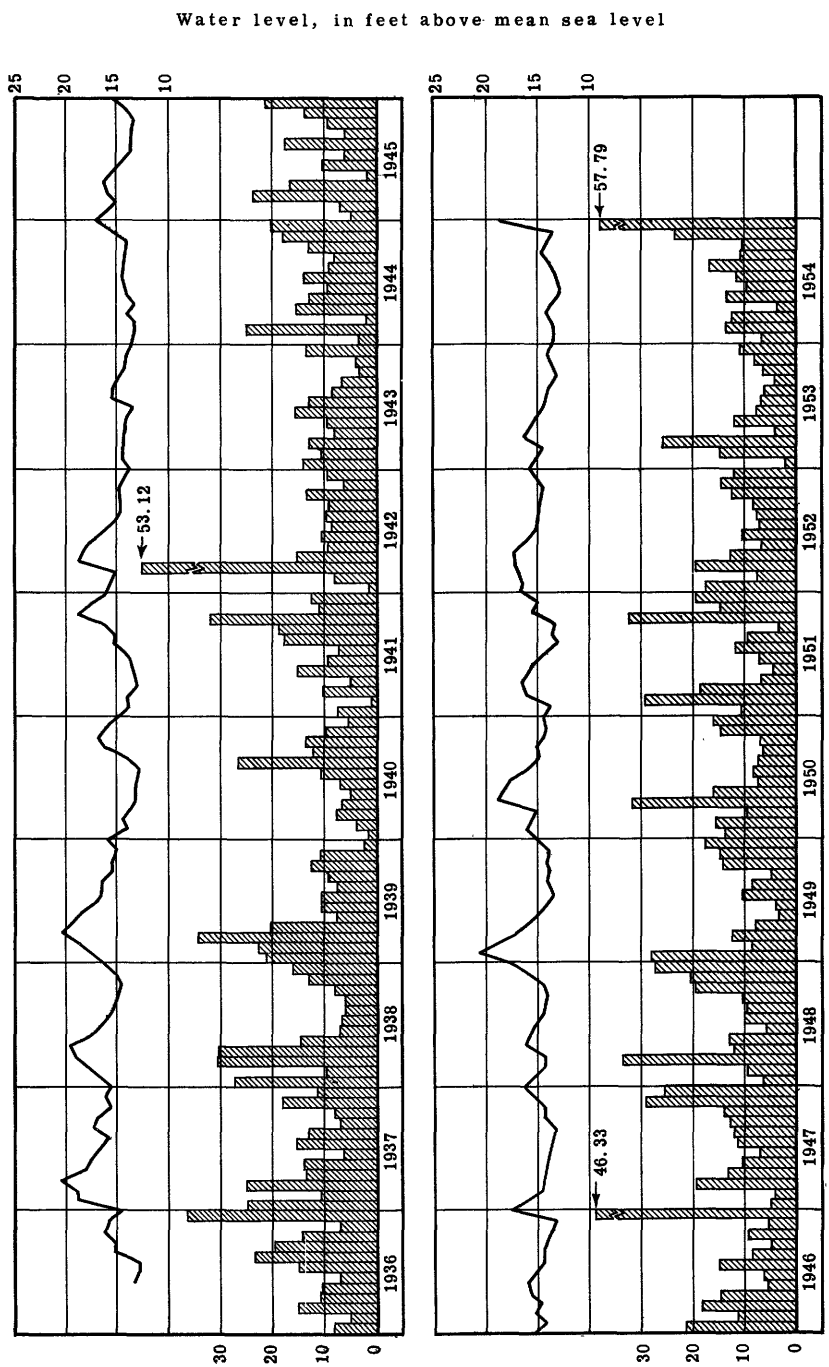


Figure 42. --Water-level fluctuations in shaft 7 and monthly precipitation at Olaa, Hawaii, 1936-54.

Lowest head in 1926, 1953, and 1954 and net change in head, 1926-54, in observation wells on Oahu

Area	Name	Well	Water level (feet above sea level)			Net change 1926-54 (feet)
			1926	1953	1954	
1	St. Louis Heights	2	20.88	24.67	25.47	+4.59
2	Makiki-Pacific Heights	36A	j23.52	25.29	25.36	+1.84
3	Kapalama	132	24.84	23.80	23.68	-1.16
4	Moanalua	T-24	k24.00	21.51	21.42	-2.58
6	Pearl Harbor	201	17.09	15.32	15.16	-1.93
		244	17.27	16.43	16.52	-.75
		266	15.75	14.46	14.86	-.89
7	Waialua	326	10.34	10.24	9.87	-.47
8	Kahuku	356	13.05	9.09	8.97	-4.08
		396	18.78	16.68	18.10	-.68
12	Mokuleia	308	17.55	17.83	18.12	+.57

j Estimated from well 83.
k Estimated from well 144.

Acknowledgments

For the Island of Kauai, records for wells 35 and 37 were supplied by the Kekaha Sugar Co. and well 14N by the Grove Farm Co. On Hawaii, records for shaft 6 were furnished by the Kaiwiki Sugar Co. and for shaft 7 by the Olaa Sugar Co. The Wailuku Sugar Co. supplied the water levels and chloride data for Maui test holes 102, 110, 112, and 113. Records for shafts 3, 5, 7, 9, 10, and 12 on Maui were furnished by the Pioneer Mill Co. The Honolulu Board of Water Supply on Oahu made available their records for wells 1A, 2, 36A, 83, and 132, and test holes 24, 25, 27, 28, 41, 44, and 45. Data for test holes 1 and 2 on Oahu were supplied by the Waialua Agricultural Co.

Well-Numbering System

Beginning with number 1 at some point on each island, drilled wells are numbered consecutively as they occur in geographic sequence around the island. Single wells separated from others and pumped separately are numbered individually. A group of closely spaced wells used to supply a central pumping plant is included under a single number with each individual of the group distinguished by a letter. In some areas certain numbers are left unassigned for the purpose of designating new drilled wells. Holes drilled especially for test or observation purposes are called test borings. Test borings on each island are numbered beginning with "1" and are distinguished by a "T" before each number. Shaft-type wells are high-capacity installations designed especially for the development of basal ground water. This type of well consists of a vertical or inclined shaft at the bottom of which drilled holes, tunnels, or a sump supply water to the pumps.

Well Descriptions and Water-Level Measurements

(Water levels are in feet above msl; chloride in parts per million.)

Island of Hawaii

Shaft 6. Kaiwiki Sugar Co. Ookala. Lat. 20°01'05", long. 155°17'15". Dug domestic and irrigation basal water-table well in basalt of Hamakua volcanic series, size $6\frac{1}{2}$ by 6 feet, vertical depth of 30-degree inclined shaft 300 feet; two infiltration tunnels, size 4 by 6 feet, total length 650 feet. Land-surface datum is 300 feet above msl. Highest water level 7.04 above msl, June 20, 1938; lowest 2.92 above msl, Apr. 27, 1946. Records available: 1937-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	...	5.2	5.1	5.0	...	...	...	...	5.2	5.2	5.2	5.3
2	...	5.2	5.1	5.0	...	5.0	5.2	...	5.2	5.3	5.1	5.3
3	...	5.2	5.1	5.1	...	5.0	5.2	...	...	5.4	5.1	5.3
4	5.2	5.2	5.0	5.1	5.0	5.1	5.2	...	5.2	5.3	5.2	5.3
5	5.2	5.2	5.0	5.1	5.0	5.1	5.3	...	5.3	5.2	5.2	5.3
6	5.2	5.3	5.2	5.0	...	5.2	5.2	...	5.3	5.2	5.3	5.3
7	5.3	5.4	5.3	5.0	...	5.1	5.2	...	5.3	5.1	5.4	5.3
8	5.3	5.3	5.2	5.0	...	5.0	5.1	...	5.3	5.1	5.3	5.3
9	5.4	5.2	5.1	5.0	...	5.0	5.1	...	5.3	5.2	5.4	5.3
10	5.4	5.2	5.0	5.0	...	5.0	5.1	...	5.3	5.3	5.5	5.3
11	5.4	5.1	5.0	5.0	5.2	5.0	5.2	...	5.4	5.3	5.5	5.3
12	5.5	5.1	5.1	5.0	5.1	5.0	5.1	...	5.5	5.3	5.4	e5.2
13	5.5	5.2	5.3	4.9	5.1	5.1	5.0	...	5.4	5.3	5.4	e5.2
14	5.4	5.2	5.3	5.0	...	5.0	5.0	...	5.4	5.3	5.4	e5.2
15	5.4	5.1	5.3	4.9	5.1	5.0	5.0	...	5.4	5.3	5.4	e5.2

Shaft 6--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	5.4	5.0	5.3	5.0	5.1	5.0	4.9	...	5.4	5.1	5.4	e5.3
17	5.5	5.0	5.3	5.1	5.0	5.0	5.0	...	5.4	5.3	5.4	e5.3
18	5.5	5.0	5.3	5.1	4.9	5.0	5.1	5.3	5.5	5.2	5.4	e5.3
19	5.3	5.1	5.2	5.0	4.9	5.1	...	5.2	5.6	5.1	5.5	e5.3
20	5.3	5.2	5.3	5.0	...	5.2	...	5.2	5.5	5.1	5.5	e5.3
21	5.3	5.2	5.3	5.0	...	5.1	5.0	5.2	5.4	5.1	5.5	e5.3
22	5.3	5.2	5.2	5.0	...	5.1	...	5.2	5.4	5.1	5.5	e5.3
23	5.4	5.1	5.1	5.0	...	5.1	...	5.1	5.3	5.2	5.5	e5.3
24	5.5	5.1	5.0	5.1	...	5.1	...	5.1	5.3	5.3	5.4	e5.3
25	5.4	5.1	4.9	5.2	...	5.1	...	5.1	5.5	5.2	5.4	e5.2
26	5.3	5.1	4.9	5.0	...	5.1	...	5.1	5.5	5.1	5.4	e5.3
27	5.3	5.1	5.0	5.1	5.0	5.2	...	5.2	5.4	5.1	5.4	e5.2
28	5.3	5.2	5.0	...	5.0	5.1	...	5.3	5.4	5.1	5.4	e5.3
29	5.3		4.9	...	...	5.1	...	5.4	5.3	5.1	5.4	e5.4
30	5.3		4.9	...	...	5.1	...	5.3	5.3	5.2	5.3	e5.3
31	5.4		5.0		...		...	5.3		5.3		e5.3

e Estimated.

Date	Chloride ppm	Date	Chloride ppm	Date	Chloride ppm	Date	Chloride ppm
Jan. 5	19	Apr. 5	48	July 6	52	Oct. 4	58
11	20	12	50	12	62	11	70
18	21	19	44	19	77	18	61
25	41	26	49	26	12	25	70
Feb. 1	46	May 3	52	Aug. 2	75	Nov. 8	67
8	48	10	49	9	63	15	88
15	51	17	50	16	71	22	20
22	49	24	56	23	59	29	24
Mar. 1	47	31	58	30	55	Dec. 6	20
8	37	June 7	51	Sept. 7	41	13	18
15	44	14	60	13	57	20	20
22	44	21	71	20	59	27	22
29	48	28	64	27	58		

Shaft 7. Olaa Sugar Co. Olaa. Lat. 19°37'50", long. 155°02'00". Dug domestic and irrigation basal water-table well in basalt of Kahuku volcanic series, size 10 by 10 feet, depth 203 feet; three infiltration tunnels, total length 48 feet. Land-surface datum is 220 feet above msl. Highest water level 25.86 above msl, Mar. 6, 1939; lowest 12.53 above msl, Dec. 5, 1953. Records available: 1936-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 9	13.10	Apr. 10	13.69	July 10	13.28	Oct. 9	14.82
16	13.15	17	13.69	17	13.01	16	14.36
23	13.27	24	13.60	24	13.05	23	14.36
30	13.32	May 1	13.55	31	13.11	30	14.36
Feb. 6	13.36	8	13.35	Aug. 7	13.19	Nov. 6	13.96
13	13.36	15	13.35	14	13.36	13	13.94
20	13.36	22	13.35	21	13.28	20	13.69
27	13.36	29	12.94	28	13.77	27	13.61
Mar. 6	13.38	June 5	12.86	Sept. 4	14.36	Dec. 4	13.44
13	14.36	12	12.94	11	14.78	11	18.82
20	14.38	19	13.03	18	14.78	18	21.94
27	14.19	26	12.94	25	14.86	25	19.19
Apr. 3	13.94	July 3	13.07	Oct. 2	14.60	31	18.88

Island of Kauai

2F. Lihue Plantation Co., Ltd. Kealia. Lat. 22°06'05", long. 159°18'40". Drilled domestic and irrigation artesian basal-water well in basalt, diameter 12 inches, depth 213 feet, cased to 95. Land-surface datum is 8.05 feet above msl. Highest water level 11.17 above msl, Nov. 20, 1940; lowest 9.15 above msl, July 26, 1946. Records available: 1937-54. Chloride in ppm: Jan. 15, 44; Feb. 19, 44; July 8, 42; Aug. 31, 42; Oct. 11, 46; Dec. 9, 41.

7. Lihue Plantation Co., Ltd. Wailua. Lat. 22°01'30", long. 159°20'55". Drilled unused artesian basal-water well in basalt, diameter 8 inches, depth 240 feet, cased to 60. Land-surface datum is 12 feet above msl. Records available: 1937-54. Chloride in ppm: Jan. 11, 163; Feb. 19, 158; Mar. 20, 161; July 8, 162; Sept. 1, 161; Oct. 12, 154; Dec. 13, 154.

8. Lihue Plantation Co., Ltd. Wailua. Lat. 22°01'25", long. 159°20'50". Drilled unused artesian basal-water well in basalt, diameter 10 inches, depth 250 feet, cased to 60. Land-surface datum is 11.95 feet above msl. Highest water level 12.99 above msl, Oct. 16, 1941; lowest 7.54 above msl, Apr. 26, 1951. Records available: 1937-54. Jan. 11, 9.21, 117 ppm; Mar. 30, 9.03, 118 ppm; Aug. 4, 128 ppm; Sept. 1, 127 ppm.

14N. Grove Farm Co., Ltd. Mahaulepu. Lat. 20°54'45", long. 159°25'20". Drilled unused basal-water well in basalt, diameter 12 inches, depth 532 feet, cased to 315. Land-surface datum is 86.02 feet above msl. Highest water level 31.52 above msl, July 28, 1939; lowest 28.0 above msl, Oct. 25, 1934. Records available: 1937-50, 1953-54. Apr. 19, 30.02, 49 ppm.

35. Kekaha Sugar Co. Near Kekaha. Lat. 22°00'10", long. 159°44'50". Drilled irrigation artesian basal-water well in basalt, diameter 12 inches, depth 245 feet, cased to 168. Land-surface datum is 7.82 feet above msl. Highest water level 11.32 above msl, Dec. 20, 1937; lowest 7.63 above msl, Apr. 17, 1944. Records available: 1937-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 15	10.65	287	July 22	10.49	291
Feb. 15	10.60	307	Aug. 14	10.43	287
Mar. 15	10.63	289	Sept. 20	10.42	297
Apr. 15	10.67	277	Oct. 13	10.47	279
May 20	10.58	291	Nov. 17	10.43	277
June 16	10.51	298	Dec. 16	10.59	275

37. Kekaha Sugar Co. Near Kekaha. Lat. 22°00'45", long. 159°45'20". Drilled irrigation artesian basal-water well in basalt, diameter 12 inches, depth 262 feet, cased to 188. Land-surface datum is 9.98 feet above msl. Highest water level 11.08 above msl, Feb. 15, 1943; lowest 7.93 above msl, June 14, 1947. Records available: 1937-50, 1952-54.

Jan. 15	10.40	335	July 22	10.27	225
Feb. 15	10.41	359	Aug. 14	10.20	231
Mar. 15	10.40	340	Sept. 20	10.30	263
Apr. 15	10.39	277	Oct. 13	10.41	212
May 20	10.38	246	Nov. 17	10.37	274
June 16	10.26	266	Dec. 16	10.43	209

Island of Lanai

Shaft 1. Hawaiian Pineapple Co. Maunalei Canyon. Lat. 20°52'45", long. 156°53'45". Dug domestic and irrigation basal water-table well in basalt, size 7 by 6 feet, vertical depth of 30-degree inclined shaft 293 feet; infiltration tunnel 1.4 feet above msl, length 536 feet. Land-surface datum is 294 feet above msl. Highest water level 2.83 above msl, Oct. 1943; lowest 2.30 above msl, Aug. 1, 1937. Records available: 1936-49. No measurement made in 1954.

Island of Maui

T-102. Wailuku Sugar Co. Iao Valley near Wailuku. Lat. 20°53'09", long. 156°31'27". Drilled observation basal water-table well in basalt of Wailuku volcanic series, diameter 6 inches, depth 475 feet, cased to 20, $\frac{3}{4}$-inch pipe inserted to 465. Land-surface datum is 453.90 feet above msl. Highest water level 36.6 above msl, Oct. 20, 1942; lowest 16.75 above msl, Sept. 15, 1953. Records available: 1940-54.

Jan. 15	17.25	27	July 15	21.25	25
Feb. 17	17.00	27	Aug. 18	24.00	25
Mar. 17	18.00	26	Sept. 15	22.50	21
Apr. 19	19.15	26	Oct. 14	20.50	25
May 15	21.15	24	Nov. 16	18.50	23
June 15	22.00	27	Dec. 17	20.50	23

T-110. Wailuku Sugar Co. Near Puu Hele. Lat. 20°49'20", long. 156°31'01". Drilled observation basal water-table well in basalt of Wailuku volcanic series, diameter $\frac{3}{4}$ inch, depth 325 feet, cased to 313, perforations 309-313. Land-surface datum is 312.67 feet above msl. Highest water level 8.9 above msl, Sept. 15, 1950; lowest 4.8 above msl, Oct. 16, 1953. Records available: 1939-54.

Jan. 18	4.9	257	July 15	4.9	233
Feb. 16	5.9	259	Aug. 17	5.4	243
Mar. 16	5.1	251	Sept. 16	5.8	231
Apr. 15	5.0	248	Oct. 19	5.8	241
May 15	5.0	243	Nov. 17	5.2	243
June 16	4.9	249	Dec. 15	5.8	245

T-112. Wailuku Sugar Co. Wailuku. Lat. 20°53'07", long. 156°30'47". Drilled observation basal water-table well in basalt of Wailuku volcanic series, diameter 1½ inches, depth 477 feet. Land-surface datum is 457.07 feet above msl. Highest water level 31.55 above msl, Oct. 16, 1947; lowest 16.50 above msl, Dec. 15, 1953. Records available: 1946-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 18	a14.7	37	July 15	a21.00	35
Feb. 17	a12.7	37	Aug. 17	a22.00	41
Mar. 16	a18.00	38	Sept. 16	a20.00	31
Apr. 15	a15.75	38	Oct. 15	a18.80	35
May 21	20.8	..	Nov. 12	a14.60	35
June 17	a19.6	35	Dec. 15	19.2	

a Pumping.

T-113. Wailuku Sugar Co. Wailuku Mill. Lat. 20°53'55", long. 156°30'05". Drilled observation artesian basal-water well in basalt, diameter 1½ inches, depth 705 feet, cased to 705, perforations 663-705. Land-surface datum is 181.09 feet above msl. Highest water level 18.6 above msl, Nov. 14, 1947; lowest 14.1 above msl, July 19, 1954. Records available: 1946-54.

Jan. 18	16.1	115	July 19	14.1	108
Feb. 17	15.8	133	Aug. 17	16.9	116
Mar. 16	15.8	117	Sept. 20	16.9	106
Apr. 15	15.8	127	Oct. 15	16.8	114
May 22	16.2	112	Nov. 12	15.9	108
June 17	16.1	106			

Shaft 3. Pioneer Mill Co., Ltd. Kaanapali. Lat. 20°56'30", long. 156°41'30". Dug irrigation basal water-table well in basalt of Wailuku volcanic series, depth 25 feet; two infiltration tunnels, total length of tunnels 1,561 feet, 11 supplemental drilled wells at bottom of shaft. Land-surface datum is 27 feet above msl. Highest water level 2.98 above msl, Dec. 31, 1948; lowest 1.43 above msl, Dec. 31, 1949. Records available: 1937-54. Dec. 31, 1.6, 846 chloride in ppm.

Shaft 5. Pioneer Mill Co., Ltd. Kahoma. Lat. 20°53'50", long. 156°40'00". Dug irrigation basal water-table well in basalt of Wailuku volcanic series, depth 323 feet; two infiltration tunnels, total length of tunnels 3,801 feet. Land-surface datum is 322 feet above msl. Highest water level 3.78 above msl, Dec. 31, 1948; lowest 1.93 above msl, Dec. 31, 1945. Records available: 1937-54. Dec. 31, 3.3, 486 ppm.

Shaft 7. Pioneer Mill Co., Ltd. Plantation mill in Lahaina. Lat. 20°53'00", long. 156°40'40". Dug irrigation basal water-table well in basalt of Wailuku volcanic series, depth 39 feet; one infiltration tunnel, length 768 feet, 3 supplemental drilled wells at bottom of shaft. Land-surface datum is 34 feet above msl. Highest water level 3.63 above msl, Dec. 31, 1940; lowest 2.6 above msl, Dec. 31, 1953. Records available: 1937-54. Dec. 31, 3.0, 2,242 chloride in ppm.

Shaft 9. Pioneer Mill Co., Ltd. Lahaina. Lat. 20°52'25", long. 156°40'15". Dug irrigation basal water-table well in basalt of Wailuku volcanic series, depth 31 feet; one infiltration tunnel, length 1,094 feet, 10 supplemental drilled wells at bottom of shaft. Land-surface datum is 30 feet above msl. Highest water level 2.83 above msl, Dec. 31, 1948; lowest 1.5 above msl, Dec. 31, 1953. Records available: 1937-54. Dec. 31, 2.0, 616 ppm.

Shaft 10. Pioneer Mill Co., Ltd. Olowalu. Lat. 20°49'30", long. 156°37'15". Dug irrigation water-table well in basalt of Wailuku volcanic series, vertical depth of 30-degree inclined shaft 300 feet; one infiltration tunnel, length 239 feet. Land-surface datum is 165 feet above msl. Highest water level 4.3 above msl, Dec. 31, 1950; lowest 3.1 above msl, Dec. 31, 1953. Records available: 1937-54. Dec. 31, 3.5, 502 ppm.

Shaft 12. Pioneer Mill Co., Ltd. Ukumehame. Lat. 20°48'45", long. 156°35'50". Dug irrigation water-table well in basalt of Wailuku volcanic series, vertical depth of 30-degree inclined shaft 143 feet; one infiltration tunnel, length 428 feet. Land-surface datum is 79 feet above msl. Highest water level 6.7 above msl, Dec. 31, 1950; lowest 4.27 above msl, Dec. 31, 1943. Records available: 1937-54. Dec. 31, 5.7, 374 ppm.

Island of Molokai

T-4. County of Maui. Kaunakakai. Lat. 21°05'42", long. 157°05'20". Drilled observation basal water-table well in basalt of East Molokai volcanic series, diameter 6 inches, depth 21 feet, cased to 5. Land-surface datum is 15.38 feet above msl. Highest water level 3.27 above msl, Dec. 1, 1950; lowest 2.03 above msl, Aug. 3, 1947. Records available: 1947-54. Jan. 26, 2.47. Measurement discontinued.

11. Replaces T-4 as an observation well. Molokai Ranch. Kaunakakai Gulch. Lat. 21°06', long. 157°01'. Drilled unused basal water-table well in basalt of East Molokai volcanic series, diameter 12 inches, depth 59 feet, cased to 20. Land-surface datum is 51 feet above msl. Highest water level 2.62 above msl, Sept. 23, 1954; lowest 2.33 above msl, May 19, 1954. Records available: 1954. May 17, 2.34; May 19, 2.33; Sept. 23, 2.62, 140 ppm; Nov. 19, 2.54; Nov. 19, 2.58.

Shaft 4. Molokai Ranch Co. Mouth of Kawela Gulch. Lat. 21°04'20", long. 157°57'00". Dug public-supply basal water-table well in basalt of East Molokai volcanic series, size 4 by 4 feet, depth 38 feet, lined with concrete; two infiltration tunnels, total length 229 feet. Land-surface datum is 37.64 feet above msl. Highest water level 2.57 above msl, Dec. 19, 1947; lowest 1.77 above msl, Aug. 26, 1948. Records available: 1947-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 6	a1.97	Mar. 28	1.97	Apr. 17	1.96	Oct. 15	a2.14
23	2.05	Apr. 15	a1.08	Sept. 21	a2.09	Nov. 19	2.04
Mar. 10	a2.08						

a Pumping.

Shaft 6. County of Maui. Ualapue. Lat. 21°04'00", long. 156°50'00". Dug public-supply basal water-table well in basalt of East Molokai volcanic series, size 4 by 6 feet, depth 42 feet, lined with concrete; two infiltration tunnels, total length 214 feet. Land-surface datum is 43.71 feet above msl. Highest water level 6.05 above msl, Jan. 19, 1950; lowest 4.73 above msl, Aug. 26, 1948. Records available: 1938-54.

Jan. 23	4.99	Mar. 28	a4.87	May 17	a4.75	Sept. 27	a5.11
Feb. 15	4.95	Apr. 8	4.87	17	4.79	Oct. 15	a5.10
Mar. 8	a4.85	14	a4.78	Sept. 21	5.15	Nov. 19	5.01
10	4.92	May 14	a4.03				

a Pumping.

42. County of Maui. Kamalo. Lat. 21°03'30", long. 156°52'25". Dug public-supply basal water-table well in basalt of East Molokai volcanic series, size 4 by 4 feet, depth 40 feet, lined with boulders. Land-surface datum is 43.23 feet above msl. Highest water level 5.40 above msl, Dec. 5, 1950; lowest 4.10 above msl, May 19, 1951. Records available: 1947-54. Jan. 23, 4.57; Mar. 28, 4.51; May 18, 4.38; Sept. 21, 4.73; Nov. 19, 4.54.

Island of Oahu

1A. B. P. Bishop Estate. Waialae Golf Links, Honolulu. Lat. 21°16'45", long. 157°46'45". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 4 inches, depth 131 feet, cased to 100. Land-surface datum is 18 feet above msl. Highest water level 9.10 above msl, Feb. 4, 1940; lowest 7.55 above msl, June 14, 1946. Records available: 1933-44, 1946-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.09	8.12	8.14	8.02	7.98	7.83	7.74	7.83	7.87	7.94	7.90	8.05
2	8.08	8.12	8.14	8.02	8.00	7.83	7.73	7.83	7.85	7.93	7.91	8.05
3	8.08	8.09	8.15	8.03	7.98	7.84	7.75	7.82	7.85	7.93	7.90	8.04
4	8.05	8.10	8.12	8.05	7.97	7.83	7.76	....	7.85	7.94	7.90	8.05
5	8.05	8.11	8.12	8.03	7.95	7.83	7.75	....	7.88	....	7.91	8.05
6	8.05	8.11	8.11	8.03	7.98	7.85	7.74	....	7.88	....	7.90	8.05
7	8.07	8.11	8.11	8.03	7.96	7.83	7.76	....	7.85	7.88	7.92	8.05
8	8.08	8.09	8.09	8.03	7.97	7.79	7.74	....	7.87	7.88	7.91	8.07
9	8.09	8.10	8.09	8.01	7.99	7.78	7.73	....	7.86	7.90	7.93	8.08
10	8.10	8.12	8.09	8.01	7.95	7.77	7.74	....	7.87	7.93	7.94	8.09
11	8.10	8.09	8.11	8.02	7.94	7.78	7.77	....	7.88	7.90	7.95	8.09
12	8.11	8.09	8.12	7.98	7.95	7.78	7.73	7.82	7.92	7.90	7.95	8.08
13	8.08	8.09	8.11	7.99	7.93	7.79	7.74	7.81	7.89	7.93	7.95	8.09
14	8.06	8.09	8.11	7.98	7.91	7.76	7.73	7.82	7.89	7.94	7.96	8.09
15	8.08	8.09	8.11	7.97	7.92	7.76	7.72	7.85	7.89	7.94	7.97	8.15
16	8.07	8.09	8.09	7.96	7.93	7.77	7.71	7.84	7.91	7.95	7.95	....
17	8.08	8.07	8.10	7.96	7.89	7.77	7.74	7.84	7.92	7.95	7.92	....
18	8.09	8.08	8.11	7.99	7.90	7.76	7.77	7.86	7.93	7.94	7.91	....
19	8.10	8.09	8.11	7.97	7.90	7.77	7.75	7.86	7.96	7.93	7.92	....
20	8.10	8.10	8.08	7.96	7.90	7.79	7.76	7.87	7.92	7.92	7.92	....
21	8.12	8.13	....	7.97	7.88	7.76	7.75	7.86	7.91	7.92	7.93	....
22	8.13	8.13	....	7.98	7.89	7.76	7.76	7.88	7.88	7.93	7.93	....
23	8.13	8.11	....	7.99	7.91	7.76	7.75	7.86	7.89	7.93	7.94	....
24	8.14	8.11	8.05	8.01	7.88	7.74	7.75	7.86	7.92	7.93	7.94	....
25	8.15	8.13	8.05	8.00	7.87	7.74	7.76	7.86	7.93	7.93	7.95	....

1A--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	8.14	8.14	8.05	7.96	7.85	7.74	7.74	7.85	7.93	7.92	7.98	....
27	8.13	8.14	8.06	7.98	7.83	7.76	7.74	7.84	7.93	7.91	8.00	....
28	8.12	8.14	8.06	7.98	7.83	7.74	7.76	7.86	7.93	7.90	8.01	....
29	8.13		8.03	8.02	7.84	7.74	7.79	7.87	7.94	7.92	7.97	....
30	8.12		8.03	7.98	7.86	7.74	7.81	7.86	7.93	7.92	8.04	....
31	8.12		8.02		7.85		7.82	7.87		7.91		....

1B. B. P. Bishop Estate. Waialae Golf Links, Honolulu. Lat. 21°16'45", long. 157°46'50". Drilled domestic and irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches, depth 120 feet, cased to 43. Land-surface datum is 18.22 feet above msl. Highest water level 8.94 above msl, Jan. 27, 1943; lowest 6.45 above msl, Oct. 20, 1933. Records available: 1919, 1929-34, 1936-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	8.07	188	July 28	7.63	222
Feb. 23	8.03	172	Aug. 24	7.71	204
Mar. 25	8.12	164	Sept. 28	a7.81	226
Apr. 28	7.92	192	Oct. 26	7.96	264
May 24	7.95	230	Nov. 29	8.00	194
June 23	7.70	215	Dec. 28	8.17	182

a Pumping.

2. B. P. Bishop Estate. Kalei Rd., Honolulu. Lat. 21°17'50", long. 157°48'55". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches. Land-surface datum is 37 feet above msl. Highest water level 31.55 above msl, Jan. 28, 1940; lowest 19.66 above msl, Sept. 14, 1944. Records available: 1916, 1919, 1923, 1926, 1929-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.25	26.28	26.53	26.76	26.31	26.08	25.60	26.14	26.24	26.17	26.24	26.33
2	26.26	26.26	26.53	26.75	26.29	26.01	25.61	26.16	26.17	26.15	26.23	26.37
3	26.27	26.20	26.52	26.74	26.29	25.98	25.67	26.13	26.17	26.15	26.19	26.40
4	26.29	26.19	26.55	26.75	26.33	25.94	25.74	26.14	26.17	26.21	26.15	26.50
5	26.30	26.20	26.55	26.70	26.37	25.88	25.83	26.19	26.21	26.23	26.10	26.58
6	26.36	26.22	26.59	26.68	26.39	25.88	25.77	26.18	26.27	26.18	26.07	.....
7	26.38	26.25	26.62	26.62	26.40	25.93	25.75	26.17	26.23	26.09	26.09	.....
8	26.35	26.23	26.66	26.54	26.40	25.93	25.73	26.20	26.17	26.06	26.09	.....
9	26.36	26.20	26.67	26.48	26.40	25.83	25.74	26.20	26.16	26.09	26.04	26.81
10	26.36	26.20	26.69	26.47	26.37	25.71	25.77	26.13	26.09	26.19	26.07	26.87
11	26.39	26.20	26.75	26.46	26.32	25.62	25.87	26.12	26.05	26.26	26.10	26.91
12	26.35	26.17	26.78	26.43	26.33	25.62	25.94	26.14	26.07	26.32	26.09	26.95
13	.....	26.22	26.80	26.38	26.29	25.65	25.93	26.12	26.06	26.29	26.03	27.02
14	.....	26.23	26.83	26.28	26.22	25.66	25.96	26.10	26.05	26.28	26.03	27.05
15	.....	26.25	26.89	26.25	26.19	25.62	25.97	26.17	26.05	26.30	26.14	27.07
16	26.18	26.22	26.86	26.22	26.20	25.61	25.99	26.21	26.04	26.24	26.15	27.14
17	26.19	26.19	26.94	26.26	26.11	25.60	26.02	26.12	26.07	26.21	26.08	27.13
18	26.24	26.17	27.02	26.39	26.05	25.60	26.10	26.12	26.15	26.24	26.06	27.08
19	26.25	26.13	27.00	26.36	26.01	25.58	26.11	26.16	26.23	26.22	26.04	27.15
20	26.27	26.15	26.99	26.30	26.03	25.63	26.10	26.16	26.16	26.20	26.04	27.18
21	26.30	26.19	27.01	26.26	25.93	25.65	26.11	26.18	26.12	26.21	26.06	27.22
22	26.35	26.22	27.03	26.31	25.87	25.52	26.12	26.22	26.11	26.21	25.98	27.26
23	26.34	26.15	26.95	26.37	25.89	25.52	26.08	26.25	26.08	26.22	25.90	27.28
24	26.37	26.24	26.93	26.33	25.94	25.53	26.04	26.22	26.11	26.23	25.97	27.31
25	26.40	26.36	26.93	26.31	25.90	25.47	26.07	26.16	26.14	26.24	25.98	27.34
26	26.39	26.42	26.91	26.22	25.93	25.47	25.98	26.12	26.18	26.19	26.04	27.39
27	26.39	26.41	26.87	26.14	25.95	25.54	25.92	26.16	26.15	26.18	26.12	27.42
28	26.35	26.47	26.84	26.20	25.97	25.59	25.99	26.19	26.14	26.17	26.19	27.44
29	26.31		26.82	26.28	26.01	25.59	26.10	26.26	26.16	26.15	26.19	27.46
30	26.23		26.75	26.30	26.07	25.64	26.12	26.27	26.20	26.15	26.23	27.46
31	26.25		26.75		26.08		26.12	26.24		26.20		27.47

9. J. J. Gouveia. Kapahulu Ave. and Olu St., Honolulu. Lat. 21°17'10", long. 157°49'00". Drilled industrial artesian basal-water well in basalt of Koolau volcanic series, diameter 6 inches, depth 270 feet, cased to 256. Land-surface datum is 16.08 feet above msl. Highest water level 30.92 above msl, Feb. 16, 1940; lowest 18.40 above msl, Aug. 17, 1926. Records available: 1921, 1923-54.

9--Continued.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	27.17	59	July 28	25.88	58
Feb. 23	26.46	58	Aug. 24	26.44	57
Mar. 25	26.87	58	Sept. 28	.....	59
Apr. 28	25.87	58	Oct. 26	26.03	58
May 24	25.97	58	Nov. 29	26.37	59
June 23	25.37	57	Dec. 28	27.42	58

36A. Honolulu Board of Water Supply. Wilder Ave. and Clement St., Honolulu. Lat. 21°18'10", long. 157°49'45". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 395 feet. Land-surface datum is 43 feet above msl. Highest water level 33.35 above msl, Mar. 11, 1938; lowest 22.41 above msl, Oct. 13, 1945. Records available: 1924, 1929-32, 1934, 1938-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.70	26.99	27.14	27.43	27.00	26.62	.....	25.76	25.48	25.59	26.11	26.56
2	26.73	26.98	27.14	27.44	27.00	26.61	.....	25.77	25.47	25.64	.....	26.67
3	26.76	26.95	27.17	27.44	27.00	26.58	.....	25.71	25.43	25.71	.....	26.72
4	26.75	26.97	27.14	27.44	27.06	26.55	.....	25.71	25.40	25.70	.....	26.78
5	26.79	26.99	27.16	27.42	27.03	26.51	.....	25.72	25.41	25.71	.....	26.82
6	26.83	27.00	27.18	27.40	27.04	26.51	.....	25.73	25.47	25.70	.....	26.86
7	26.86	27.02	27.23	27.40	27.06	26.50	.....	25.72	25.49	25.66	.....	26.89
8	.....	27.00	27.24	27.40	27.04	26.52	.....	25.75	25.48	25.61	.....	26.92
9	.....	27.00	27.26	27.37	27.07	26.49	.....	25.79	25.44	25.64	.....	27.06
10	.....	26.99	27.28	27.34	27.02	26.43	.....	25.75	25.39	25.74	26.20	27.12
11	.....	26.92	27.32	27.30	26.96	26.43	.....	25.69	25.37	25.76	26.19	27.13
12	.....	26.91	27.36	27.26	26.96	26.43	.....	25.67	25.37	25.80	26.15	27.19
13	.....	26.93	27.36	27.26	26.90	26.46	.....	25.66	25.40	25.84	26.15	27.27
14	26.88	26.97	27.38	27.24	26.67	.....	.....	25.61	25.39	25.66	26.23	.....
15	26.88	26.97	27.42	27.19	26.83	.....	.....	25.67	25.37	25.87	26.26	27.49
16	26.89	26.97	27.43	27.14	26.62	.....	.....	25.69	25.36	25.88	26.29	27.54
17	26.93	26.95	27.47	27.13	26.82	.....	.....	25.63	25.41	25.89	26.29	27.53
18	26.94	26.91	27.52	27.19	26.80	.....	.....	25.59	25.43	25.91	26.32	27.61
19	26.96	26.89	27.53	27.22	26.77	.....	.....	25.59	25.50	25.92	26.34	27.69
20	26.96	26.90	27.53	27.17	26.74	.....	25.91	25.56	25.50	25.93	26.33	27.76
21	26.94	26.97	27.55	27.17	26.73	.....	25.84	25.53	25.48	25.94	26.37	27.80
22	26.97	26.98	27.59	27.18	26.69	.....	25.60	25.57	25.48	25.96	26.41	27.82
23	26.98	27.00	27.57	27.17	26.70	.....	25.77	25.57	25.46	25.95	26.35	27.86
24	27.01	27.07	27.53	27.12	26.69	.....	25.73	25.59	25.45	26.01	26.34	27.89
25	27.01	27.10	27.53	27.09	26.67	.....	25.76	25.58	25.45	26.00	26.39	27.95
26	27.01	27.11	27.53	27.07	26.64	.....	25.75	25.52	25.52	26.00	26.48	28.02
27	27.00	27.10	27.52	27.05	26.61	.....	25.69	25.52	25.52	25.99	26.50	28.06
28	26.99	27.10	27.51	27.02	26.58	.....	25.66	25.48	25.52	26.02	26.55	26.13
29	26.96		27.50	27.03	26.58	.....	25.70	25.55	25.55	26.01	26.46	28.16
30	26.96		27.49	27.01	26.60	.....	25.72	25.57	25.58	26.02	26.46	28.21
31	26.98		27.46		26.62		25.72	25.54		26.10		26.23

81. R. Sakimoto. Formerly A. Young. Young and Victoria Sts., Honolulu. Lat. 21°18'20", long. 157°50'55". Drilled domestic artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches, depth 505 feet, cased to 475. Land-surface datum is 18.04 feet above msl. Highest water level 33.04 above msl, Feb. 28, 1938; lowest 21.99 above msl, Aug. 28, 1946. Records available: 1916, 1923-24, 1926, 1929-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	26.63	38	July 28	25.28	39
Feb. 23	26.63	38	Aug. 24	25.40	36
Mar. 25	27.27	48	Sept. 28	24.78	36
Apr. 28	26.73	35	Oct. 26	25.59	41
May 24	26.43	37	Nov. 29	26.13	38
June 23	26.33	36	Dec. 28	27.83	38

83. City and County of Honolulu. Beretania and Kapiolani Sts. Lat. 21°18'20", long. 157°51'05". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 8 to 6 inches, depth 509 feet, cased to 460. Land-surface datum is 27 feet above msl. Highest water level 33.29 above msl, Mar. 10, 1938; lowest 22.07 above msl, Aug. 10, 1946. Records available: 1923, 1925-48, 1952-54.

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Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.46	26.80	26.93	27.15	26.78	26.42	25.81	.....	25.23	25.34	25.85	26.31
2	.....	26.80	26.93	27.17	26.77	26.40	25.84	25.52	25.23	.....	25.86	26.44
3	.....	26.77	26.88	27.15	26.77	26.36	25.85	25.47	25.18	.....	25.88	26.48
4	.....	26.76	26.87	27.15	26.84	26.35	25.88	25.48	25.16	.....	25.90	26.54
5	26.56	26.79	26.88	27.16	26.81	26.32	25.91	25.49	25.18	.....	.....	26.60
6	.....	26.79	26.87	27.14	26.81	26.33	25.85	25.51	25.24	25.49	.....	26.63
7	26.62	26.82	26.97	27.19	26.83	26.31	.....	25.50	25.25	25.45	.....	26.70
8	26.63	26.78	26.95	27.15	26.80	26.27	25.75	25.56	25.27	25.43	25.96	26.73
9	26.64	26.79	26.98	27.13	26.85	26.25	25.70	25.54	25.25	25.45	25.94	26.85
10	.....	26.75	27.04	27.10	26.77	26.20	25.74	25.50	25.20	25.55	25.97	26.92
11	.....	26.70	27.08	.....	26.74	26.20	25.81	25.42	25.17	25.57	25.94	26.91
12	.....	26.71	27.13	.....	26.71	26.19	25.79	25.44	25.18	25.60	25.90	27.01
13	.....	26.72	27.14	.....	26.67	26.24	.....	25.43	25.22	25.63	25.90	27.10
14	.....	26.76	27.15	.....	26.64	26.20	.....	25.37	25.20	25.63	25.96	27.18
15	.....	26.74	27.17	26.98	26.61	26.16	25.71	25.48	25.16	25.64	26.00	27.24
16	.....	.....	27.20	26.94	26.62	26.10	25.64	25.42	25.16	25.65	26.05	27.28
17	.....	.....	.....	26.93	26.62	25.98	25.70	.....	25.20	25.66	26.04	27.25
18	.....	26.65	.....	27.00	26.59	26.02	25.73	.....	25.23	25.68	26.06	27.15
19	.....	26.65	.....	27.00	26.54	26.06	25.69	.....	25.33	25.69	26.08	27.13
20	.....	26.65	.....	26.96	26.52	26.07	.....	.....	25.30	25.70	26.08	27.17
21	26.74	26.73	.....	.....	26.51	26.01	.....	.....	25.26	25.70	26.12	27.20
22	26.76	26.72	.....	26.92	26.47	25.97	25.56	.....	25.25	25.71	26.16	27.28
23	26.74	26.75	.....	.....	26.49	25.92	.....	.....	25.21	25.68	26.10	27.33
24	26.79	26.85	27.26	.....	26.50	25.87	.....	.....	25.20	25.74	26.09	27.38
25	26.78	26.88	27.26	.....	26.48	25.86	.....	.....	25.20	25.75	26.14	.....
26	26.77	26.89	27.27	.....	26.42	25.84	.....	25.26	25.28	25.73	26.22	.....
27	26.75	.....	.....	.....	26.39	25.88	.....	25.27	25.25	25.74	26.25	27.46
28	26.75	26.94	.....	26.77	26.38	25.82	25.49	25.24	25.25	25.75	26.30	27.60
29	26.75		27.22	26.81	26.38	.....	25.48	25.33	25.32	25.76	26.21	27.61
30	26.76		27.23	26.77	26.40	.....	25.50	25.31	25.34	25.77	26.19	27.64
31	26.78		27.17		26.43		25.48	25.29		25.86		27.68

119. Honolulu Gas Co. Honolulu Gas Works, Honolulu. Lat. 21°19'05", long. 157°52'25". Drilled industrial artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches, depth 682 feet, cased to 613. Land-surface datum is 4.22 feet above msl. Highest water level 32.55 above msl, Mar. 16, 1933; lowest 19.96 above msl, July 28, 1945. Records available: 1923-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	23.54	425	July 28	22.04	433
Feb. 23	23.14	420	Aug. 24	22.74	428
Mar. 25	24.24	444	Sept. 28	21.44	432
Apr. 28	24.04	423	Oct. 26	22.99	420
May 24	23.34	420	Nov. 29	23.88	425
June 23	22.84	420	Dec. 28	25.08	434

132. B. P. Bishop Estate. Old Kamehameha School, Honolulu. Lat. 21°20'05", long. 157°52'25". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 12 to 10 inches, depth 346 feet, cased to 265. Land-surface datum is 43 feet above msl. Highest water level 32.60 above msl, Mar. 7, 1938; lowest 21.57 above msl, July 2, 1946. Records available: 1924, 1926, 1928-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.06	25.44	25.52	25.82	25.44	25.00	24.35	24.18	23.84	23.87	24.57	25.08
2	25.17	25.40	25.55	25.80	25.52	24.94	24.31	24.15	23.76	24.01	24.62	25.10
3	25.22	25.38	25.49	25.83	25.40	24.89	24.26	24.08	.....	24.14	24.58	25.16
4	25.18	25.31	25.43	25.92	25.43	24.86	24.38	24.04	23.77	24.16	24.53	25.19
5	.....	25.31	25.44	25.86	25.40	24.86	24.51	24.04	23.94	24.12	24.53	25.29
6	.....	25.38	25.56	25.76	25.42	24.92	24.46	24.01	24.08	24.09	24.63	25.35
7	.....	25.47	25.65	25.71	25.44	24.96	24.35	24.08	24.02	24.04	24.71	25.40
8	.....	25.42	25.69	25.65	25.51	24.90	.....	24.22	23.88	24.00	24.68	25.48
9	.....	25.39	25.65	.....	25.51	24.82	24.24	24.21	23.77	24.11	24.62	25.52
10	.....	25.32	25.71	.....	25.46	24.77	24.27	24.11	23.68	24.24	24.58	25.50
11	.....	25.25	25.70	.....	25.37	24.80	24.41	23.98	23.70	24.28	24.62	25.61
12	25.33	25.22	25.75	.....	25.32	24.83	24.36	23.93	23.87	24.25	24.58	25.70
13	25.30	25.33	25.76	25.61	25.26	24.82	24.30	23.88	23.91	24.24	24.64	25.78
14	25.29	.....	25.82	25.59	25.24	24.79	24.24	23.92	23.80	24.22	24.73	25.85
15	25.26	.....	25.85	25.53	25.26	.....	24.15	24.09	23.70	24.17	24.75	25.91

132--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	25.31	.....	25.84	25.50	25.31	.....	24.15	24.07	23.75	24.24	24.73	25.94
17	25.43	.....	25.83	25.58	25.24	.....	24.19	23.98	23.78	24.35	24.72	25.93
18	25.41	.....	25.82	25.68	25.18	.....	24.34	23.91	23.83	24.37	24.67	26.04
19	25.38	25.26	25.82	25.61	25.14	.....	24.31	23.88	23.95	24.32	24.72	26.15
20	25.35	25.34	25.85	25.51	25.11	.....	24.20	23.89	23.92	24.23	24.79	26.15
21	25.31	25.43	25.93	25.44	25.07	24.63	24.11	23.87	23.82	24.28	24.81	26.19
22	25.30	25.43	25.98	25.43	25.13	24.59	24.08	23.99	23.73	24.28	24.82	26.23
23	25.38	25.44	25.94	25.47	25.18	24.49	24.07	24.02	23.68	24.36	24.78	26.27
24	25.49	25.43	25.86	25.48	25.11	24.42	24.04	23.90	23.71	24.47	24.77	26.28
25	25.45	25.45	25.86	25.52	25.05	24.36	24.15	23.81	23.84	24.45	24.82	26.44
26	25.44	25.42	25.87	25.50	25.04	24.37	24.02	23.74	23.96	24.47	24.89	26.52
27	25.37	25.48	25.85	25.49	25.02	24.49	23.92	23.75	23.97	24.45	25.00	26.56
28	25.42	25.50	25.92	25.47	25.02	24.49	23.97	23.81	23.90	24.38	25.04	26.57
29	25.44		25.94	25.44	25.07	24.46	24.00	23.98	23.92	24.38	24.92	26.52
30	25.44		25.93	25.38	25.08	24.38	24.00	24.01	23.87	24.47	24.98	26.51
31	25.48		25.86		25.04		24.05	23.95		24.55		26.60

153. Sam Damon Estate. Moanalua Gardens, Honolulu. Lat. 21°21'05", long. 157°53'40". Drilled domestic and irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 10 inches. Land-surface datum is 20.38 feet above msl. Highest water level 31.88 above msl, April 1917; lowest 19.39 above msl, Sept. 26, 1945. Records available: 1910-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	22.98	59	July 28	21.47	59
Feb. 23	22.63	59	Aug. 24	21.78	59
Mar. 23	23.13	59	Sept. 30	21.52	59
Apr. 27	22.54	58	Oct. 26	21.82	58
May 26	22.17	57	Nov. 29	22.28	60
June 23	22.19	59	Dec. 27	24.16	59

187B. U. S. Navy. Aiea. Lat. 21°22'40", long. 157°56'05". Drilled industrial artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 173 feet, cased to 143. Land-surface datum is 9.93 feet above msl. Highest water level 27.10 above msl, Feb. 23, 1937; lowest 15.06 above msl, Aug. 19, 1945. Records available: 1923, 1928-54.

Jan. 28	19.34	113	July 30	18.22	118
Feb. 23	19.17	113	Aug. 24	18.26	118
Mar. 22	20.03	118	Sept. 28	18.01	124
Apr. 26	18.82	121	Oct. 26	18.03	116
May 26	18.24	113	Nov. 29	19.36	124
June 22	17.84	118	Dec. 28	21.50	129

190. U. S. Navy. McGrew Peninsula. Lat. 21°22'47", long. 157°56'38". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 6 inches, depth 300 feet, cased to 200. Land-surface datum is 22.73 feet above msl. Highest water level 25.41 above msl, Feb. 23, 1937; lowest 15.38 above msl, Aug. 24, 1945. Records available: 1910, 1918-19, 1929-54.

Jan. 28	19.26	250	July 30	18.17	247
Feb. 23	19.06	242	Aug. 24	18.24	...
Mar. 22	19.97	247	Sept. 28	17.99	264
Apr. 26	18.85	247	Oct. 26	18.04	270
May 26	18.30	245	Dec. 28	21.45	255
June 22	18.07	250			

193. L. L. McCandless Estate. Waimalu Valley. Lat. 21°23'37", long. 157°56'52". Drilled domestic artesian basal-water well in basalt of Koolau volcanic series, diameter 10 inches, depth 363 feet, cased to 61. Land-surface datum is 13.05 feet above msl. Highest water level 28.88 above msl, March 1916; lowest 14.65 above msl, Sept. 25, 1945. Records available: 1902, 1910-54.

Jan. 28	18.24	244	July 30	17.23	247
Feb. 23	18.08	230	Aug. 24	17.29	212
Mar. 22	18.96	234	Sept. 28	16.43	236
Apr. 26	17.79	229	Oct. 26	17.20	229
May 26	17.26	225	Nov. 29	18.65	234
June 22	16.98	225	Dec. 28	20.71	230

201. U. S. Navy. Pearl City. Lat. 21°23'35", long. 157°58'20". Drilled irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 336 feet, cased to 58. Land-surface datum is 9.17 feet above msl. Highest water level 31.21 above msl, February 1916; lowest 14.18 above msl, Aug. 28, 1946. Records available: 1910-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 28	16.45	894	July 30	15.43	823
Feb. 23	16.17	884	Aug. 24	15.51	857
Mar. 22	17.04	991	Sept. 28	.....	838
Apr. 26	15.97	924	Oct. 26	15.52	859
May 26	15.42	834	Nov. 29	16.96	964
June 22	15.16	767	Dec. 28	18.77	1160

244. B. P. Bishop Estate. Waipàhu. Lat. 21°23'18", long. 158°00'32". Drilled domestic artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 225 feet, cased to 58. Land-surface datum is 10.47 feet above msl. Highest water level 30.02 above msl, February 1916; lowest 14.80 above msl, July 26, 1945. Records available: 1910-21, 1923-54.

Jan. 28	18.42	109	July 30	17.04	109
Feb. 23	18.07	106	Aug. 24	17.04	107
Mar. 22	19.72	111	Sept. 28	16.52	107
Apr. 26	17.80	111	Oct. 26	16.86	109
May 26	16.92	108	Nov. 29	19.75	107
June 22	16.57	106	Dec. 28	22.42	106

266. Hawaii Meat Co. Honouliuli. Lat. 21°21'55", long. 158°01'52". Drilled irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches. Land-surface datum is 12.66 feet above msl. Highest water level 29.16 above msl, April 1918; lowest 12.54 above msl, Sept. 24, 1945. Records available: 1910-54.

Jan. 28	17.14	219	July 30	15.31	228
Feb. 23	16.64	220	Aug. 24	15.28	247
Mar. 22	18.88	198	Sept. 28	.....	259
Apr. 26	16.39	208	Oct. 26	15.14	258
May 26	15.33	227	Nov. 29	19.36	207
June 22	14.86	227	Dec. 28	22.27	182

276. Ewa Plantation Co. Gilbert. Lat. 21°20'16", long. 158°06'35". Drilled battery of four irrigation artesian basal-water wells in basalt of Waianae volcanic series, diameter 12 inches, average depth 160 feet. Land-surface datum is 40.58 feet above msl. Highest water level 16.7 above msl, February 1909; lowest 11.51 above msl; October 1945. Records available: 1905, 1908-54. Monthly averages furnished by owner.

Jan.	12.36	558	July	11.54	563
Feb.	12.45	551	Aug.	11.60	564
Mar.	12.86	536	Sept.	11.73	564
Apr.	12.37	545	Oct.	11.79	576
May	12.54	554	Nov.	11.89	571
June	11.66	561	Dec.	12.97	426

286. Waialua Agricultural Co. Kawaihapai. Lat. 21°34'46", long. 158°10'49". Drilled unused artesian basal-water well in basalt of Waianae volcanic series, diameter 1 inch, depth 447 feet, cased to 447, perforations 410-447. Land-surface datum is 11.54 feet above msl. Highest water level 19.23 above msl, Oct. 30, 1952; lowest 16.34 above msl, June 26, 1936. Records available: 1929-54.

Jan. 25	17.79	145	July 29	16.80	144
Feb. 25	17.81	135	Aug. 23	16.97	141
Mar. 24	17.46	141	Sept. 27	17.04	142
Apr. 21	16.96	141	Oct. 25	17.10	149
May 28	16.83	140	Nov. 19	16.98	149
June 24	16.77	140	Dec. 17	17.42	152

308. J. F. Mendonca. Mokuleia. Lat. 21°34'35", long. 158°09'11". Drilled irrigation artesian basal-water well in basalt of Waianae volcanic series, diameter 10 to 8 inches, depth 548 feet, cased to 440. Land-surface datum is 8.46 feet above msl. Highest water level 20.64 above msl, Oct. 26, 1939; lowest 16.81 above msl, July 25, 1927. Records available: 1924-54.

Jan. 25	19.14	127	July 29	18.52	134
Feb. 25	18.98	124	Aug. 23	18.92	131
Mar. 24	18.72	129	Sept. 27	18.62	131
Apr. 21	18.32	136	Oct. 25	18.72	131
May 28	18.12	130	Nov. 19	18.82	138
June 24	18.26	134	Dec. 17	19.22	131

326. Waialua Agricultural Co. Waialua. Lat. 21°34'56", long. 158°06'52". Drilled irrigation artesian well in basalt of Koolau volcanic series, diameter 8 inches, depth 201 feet, cased to 114. Land-surface datum is 6.19 feet above msl. Highest water level 13.35 above msl, December 1914; lowest 9.19 above msl, Apr. 24, 1946. Records available: 1911-21, 1924-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 25	10.89	101	July 29	10.26	101
Feb. 25	10.98	100	Aug. 23	11.08	100
Mar. 24	10.74	103	Sept. 27	10.87	97
Apr. 21	9.99	102	Oct. 25	11.03	95
May 28	9.99	102	Nov. 19	10.57	100
June 24	9.87	108	Dec. 17	11.45	98

337. Territory of Hawaii. Waialee. Lat. 21°41'30", long. 158°01'25". Drilled unused artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches, depth 63 feet, cased to 36. Land-surface datum is 21.45 feet above msl. Highest water level 15.60 above msl, Nov. 14, 1932; lowest 11.70 above msl, May 27, 1947. Records available: 1929-54.

Jan. 25	13.11	102	July 26	12.45	111
Feb. 25	13.19	102	Aug. 23	12.63	108
Mar. 24	13.21	105	Sept. 27	12.71	...
Apr. 21	12.49	107	Oct. 25	12.69	112
May 28	12.38	102	Dec. 17	12.91	114
June 24	12.61	106			

356. Kahuku Plantation Co. Kahuku. Lat. 21°40'54", long. 157°57'04". Drilled industrial artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 420 feet, cased to 156. Land-surface datum is 8.83 feet above msl. Highest water level 17.12 above msl, January 1916; lowest 8.97 above msl, June 24, 1954. Records available: 1908, 1911-18, 1921, 1924-54.

Jan. 25	10.81	324	July 26	9.23	328
Feb. 25	11.71	340	Aug. 23	11.55	333
Mar. 24	11.44	328	Sept. 27	9.72	335
Apr. 21	9.49	338	Oct. 25	9.53	334
May 28	9.02	330	Nov. 19	9.84	349
June 24	8.97	330	Dec. 17	11.98	332

396. Kahuku Plantation Co. Hauula. Lat. 21°36'22", long. 157°54'36". Drilled domestic and irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 8 inches. Land-surface datum is 10.36 feet above msl. Highest water level 24.98 above msl, June 1918; lowest 16.68 above msl, Sept. 23, 1953. Records available: 1911-19, 1921, 1924-54.

Jan. 25	18.72	85	July 26	18.10	81
Feb. 25	18.76	84	Aug. 23	19.02	79
Mar. 24	a18.77	82	Sept. 27	18.26	77
Apr. 21	a18.29	80	Oct. 25	18.52	78
May 28	18.32	80	Nov. 19	18.40	80
June 24	18.15	80	Dec. 17	19.28	77

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405. M. E. Foster Estate. Kahana. Lat. 21°33'27", long. 157°52'44". Drilled domestic artesian basal-water well in basalt of Koolau volcanic series, diameter 10 inches, depth 441 feet, cased to 177. Land-surface datum is 5.76 feet above msl. Highest water level 21.07 above msl, July 25, 1938; lowest 14.80 above msl, Oct. 28, 1946. Records available: 1936-54.

Jan. 25	15.38	40	July 26	16.06	39
Feb. 25	15.52	39	Aug. 23	16.86	39
Mar. 24	15.96	39	Sept. 27	16.76	40
Apr. 21	15.86	39	Oct. 25	16.86	39
May 28	16.26	39	Nov. 19	16.87	39
June 24	16.30	39	Dec. 17	17.36	39

406. Mrs. F. M. Swanzy. Kaaawa. Lat. 21°32'41", long. 157°51'00". Drilled irrigation artesian basal-water well in basalt of Koolau volcanic series, diameter 9 inches, Land-surface datum is 10.27 feet above msl. Highest water level 18.37 above msl, July 25, 1938; lowest 12.35 above msl, Aug. 27, 1946. Records available: 1929-54.

Jan. 25	13.29	260	July 26	13.74	257
Feb. 25	13.39	260	Aug. 23	14.05	260
Mar. 24	13.47	255	Sept. 27	14.16	264
Apr. 21	13.51	262	Oct. 25	14.05	270
May 28	13.82	255	Nov. 19	14.53	272
June 24	13.70	255	Dec. 17	14.63	278

T-1. Waialua Agricultural Co. Kaukonahua Gulch. Lat. 21°32'15", long. 158°05'40". Drilled observation basal water-table well in basalt of Waianae volcanic series, diameter 1 inch, depth 292 feet, cased to 291, lower end perforated. Land-surface datum is 273.61 feet above msl. Highest water level 19.85 above msl, July 1, 1941; lowest 13.08 above msl, Feb. 28, 1949. Records available: 1938-54.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 5	17.08	31	Aug. 5	16.08	21
Feb. 3	16.28	31	Sept. 9	17.08	31
June 2	16.08	31	Oct. 5	16.08	21
July 2	16.08	31	Nov. 2	16.58	31

T-2. Waialua Agricultural Co. Near Anahulu Canyon. Lat. 21°35'52", long. 158°05'16". Drilled observation basal water-table well in basalt of Koolau volcanic series, diameter $\frac{3}{4}$ inch, depth 344 feet, cased to 344, perforations 340-344. Land-surface datum is 341.88 feet above msl. Highest water level 14.08 above msl, Apr. 1, 1943; lowest 4.36 above msl, May 2, 1950. Records available: 1938-54.

Jan. 5	6.41	125	July 2	4.86	416
Feb. 3	5.71	270	Aug. 5	4.86	436
Mar. 2	4.86	280	Sept. 9	5.81	457
Apr. 29	5.71	374	Oct. 6	5.41	436
June 2	4.91	395	Nov. 3	5.41	509

T-5. Honolulu. Suburban Water System. Near Makaiwa Gulch. Lat. 21°20'55", long. 158°07'05". Drilled observation basal water-table well in basalt of Waianae volcanic series, diameter 6 inches, depth 100 feet, cased to 85. Land-surface datum is 79.13 feet above msl. Highest water level 5.48 above msl, Mar. 27, 1951; lowest 2.53 above msl, June 27, 1939. Records available: 1939-54.

Jan. 26	4.43	526	July 28	3.82	514
Feb. 24	4.52	520	Aug. 26	4.31	504
Mar. 23	4.32	514	Sept. 29	4.25	503
Apr. 27	4.23	524	Oct. 27	4.25	525
May 25	4.07	510	Nov. 30	4.63	523
June 23	3.93	520	Dec. 27	4.78	520

T-15. Honolulu Suburban Water System. Nankuli Valley. Lat. 21°23'50", long. 158°07'20". Drilled observation basal water-table well in basalt of Waianae volcanic series, diameter $\frac{3}{4}$ inch, depth 489 feet, cased to 488, perforations 468-488. Land-surface datum is 478.64 feet above msl. Highest water level 3.14 above msl, Feb. 25, 1943; lowest 1.60 above msl, July 3, 1946. Records available: 1940-54.

Jan. 26	1.98	93	June 23	2.04	97
Feb. 24	2.00	94	Aug. 26	1.82	99
Mar. 23	1.99	96	Sept. 29	1.91	98
Apr. 27	2.00	95	Dec. 20	2.29	96
May 25	2.16	93			

T-20. U. S. Navy. Near Ewa. Lat. 21°21'36", long. 158°03'45". Drilled observation artesian basal-water well in basalt of Koolau volcanic series, diameter 6 inches, depth 137 feet, cased to 9. Land-surface datum is 139.50 feet above msl. Highest water level 19.28 above msl, Jan. 28, 1943; lowest 15.87 above msl, Aug. 28, 1952. Records available: 1942-54.

Jan. 26	16.93	178	July 28	16.11	176
Feb. 24	17.02	168	Aug. 26	16.03	171
Mar. 23	17.42	181	Sept. 29	15.92	170
Apr. 27	16.71	179	Oct. 27	15.89	167
May 25	16.60	190	Nov. 30	16.50	174
June 23	16.14	180	Dec. 27	17.40	110

T-24. Honolulu Board of Water Supply. Manaiki Gulch. Lat. 21°21'27", long. 157°53'10". Drilled observation artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 115 feet, cased to 66. Land-surface datum is 58.40 feet above msl. Highest water level 25.91 above msl, Jan. 27, 1952; lowest 21.42 above msl, Oct. 8, 1954. Records available: 1945-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.32	22.86	22.74	22.92	22.48	22.04	21.67	.....	21.69	21.48	21.89	22.53
2	22.35	22.72	22.77	22.90	22.56	22.01	21.65	.....	21.65	21.48	21.90	22.65
3	22.37	22.67	22.78	22.93	22.56	22.00	21.67	21.76	21.62	21.55	21.90	22.76
4	22.37	22.60	22.80	22.98	22.57	21.98	21.71	21.74	21.61	21.53	21.88	22.83
5	22.39	22.54	22.85	22.94	22.57	21.91	21.78	21.73	21.64	21.50	21.88	.....

T-24--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	22.42	22.55	22.92	22.88	22.56	22.04	21.83	21.73	21.68	21.45	21.89	.....
7	22.43	22.61	22.95	22.85	22.58	22.04	21.81	21.74	21.71	21.44	21.94	23.04
8	22.42	22.62	22.97	22.79	22.59	22.03	21.77	21.77	21.68	21.42	21.96	23.09
9	22.42	22.60	22.99	22.74	22.61	22.01	21.74	21.78	21.66	21.44	21.96	23.18
10	22.45	22.56	23.03	22.71	22.61	21.99	21.73	21.75	21.62	21.50	21.96	23.25
11	22.49	22.49	23.05	22.72	22.55	21.96	21.79	21.72	21.59	21.60	21.95	23.32
12	22.55	22.44	23.07	22.74	22.50	21.93	21.82	21.70	21.62	21.66	21.94	23.39
13	22.60	22.46	23.08	22.70	22.48	21.93	21.80	21.69	21.62	21.68	21.95	23.45
14	22.62	22.48	23.09	22.68	22.46	21.89	21.81	21.67	21.58	21.69	21.99	23.50
15	22.64	22.55	23.12	22.65	22.43	21.85	21.80	21.72	21.55	21.69	22.04	23.57
16	22.67	22.61	23.11	22.62	22.43	21.83	21.78	21.75	21.55	21.71	22.03	23.59
17	22.73	22.60	23.08	22.64	22.39	21.80	21.78	21.72	21.55	21.74	22.02	23.66
18	22.74	22.61	23.09	22.73	22.33	21.78	21.83	21.70	21.55	21.75	22.02	23.74
19	22.74	22.59	23.09	22.71	22.26	21.75	21.85	21.71	21.58	21.73	22.00	23.82
20	22.75	22.61	23.08	22.64	22.19	21.77	21.83	21.69	21.57	21.70	22.02	23.84
21	22.75	22.66	23.11	22.58	22.15	21.79	21.82	21.68	21.51	21.69	22.08	23.84
22	22.75	22.66	23.14	22.52	22.12	21.75	21.79	21.67	21.48	21.68	22.12	23.86
23	22.78	22.61	23.11	22.51	22.13	21.72	21.78	21.69	21.47	21.68	22.08	23.91
24	22.84	22.59	23.10	22.46	22.14	21.70	21.76	21.67	21.47	21.75	.....	23.95
25	22.89	22.60	23.07	22.46	22.11	21.68	21.78	21.68	21.47	21.75	.....	24.01
26	22.91	22.63	23.03	22.48	22.10	21.70	21.73	21.70	21.51	21.75	.....	24.09
27	22.91	22.66	23.02	22.45	22.06	21.71	21.69	21.69	21.53	21.73	.....	24.08
28	22.90	22.68	23.02	22.41	22.03	21.72	21.66	21.68	21.52	21.73	.....	24.09
29	22.87		23.03	22.38	22.03	21.68	21.67	21.72	21.48	21.72	.....	24.08
30	22.84		22.99	22.41	22.04	21.70	21.69	21.74	21.48	21.71	.....	24.07
31	22.86		22.95		22.05		.....	21.73		21.80		24.10

T-25. Honolulu Board of Water Supply. Waimalu Valley, near Pearl Harbor. Lat. 21°23'35", long. 157°56'48". Drilled observation artesian basal-water well in basalt of Koolau volcanic series, diameter 12 inches, depth 177 feet, cased to 42. Land-surface datum is 24.40 feet above msl. Highest water level 20.60 above msl, Jan. 20, 1952; lowest 16.10 above msl, Sept. 25, 1953. Records available: 1945-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.51	17.20	17.62	17.30	17.22	16.55	16.18	16.70	16.42	16.20	16.63	.....
2	17.56	17.08	17.67	17.30	17.32	16.46	16.25	16.63	16.37	16.23	16.75	.....
3	17.60	17.00	17.70	17.50	17.31	16.43	16.34	16.52	16.36	16.31	16.60	18.20
4	17.60	16.95	17.72	17.55	17.17	16.49	16.43	16.50	16.43	16.31	16.53	18.24
5	17.60	16.95	17.74	17.40	17.14	16.73	16.60	16.52	16.57	16.23	16.55	18.29
6	17.55	17.15	17.77	17.30	17.20	16.73	16.53	16.50	16.67	16.17	16.80	18.33
7	17.48	17.22	17.83	17.20	17.15	16.60	16.42	16.57	16.57	16.21	16.80	18.30
8	17.50	17.10	17.87	17.13	17.18	16.50	16.43	16.70	16.51	16.20	16.70	18.76
9	17.56	17.00	17.87	17.07	17.30	16.42	16.47	16.61	16.47	16.30	16.65	18.70
10	17.64	16.95	17.90	17.12	17.15	16.35	16.63	16.52	16.42	16.52	16.65	18.58
11	17.60	16.85	17.87	17.28	17.01	16.33	16.73	16.47	16.37	16.62	16.62	18.59
12	17.50	16.90	17.85	17.16	16.92	16.37	16.74	16.46	16.43	16.60	16.55	18.61
13	17.35	17.10	17.87	17.06	16.85	16.48	16.73	16.47	16.41	16.50	16.73	18.64
14	17.20	17.23	17.92	16.98	16.80	16.39	16.70	16.48	16.33	16.45	16.80	18.68
15	17.15	17.31	17.90	17.00	16.82	16.30	16.59	16.66	16.27	16.40	16.70	18.76
16	17.35	17.33	17.80	17.19	16.88	16.26	16.57	16.58	16.26	16.55	16.63	19.28
17	17.35	17.30	17.75	17.32	16.76	16.25	16.62	16.48	16.25	16.70	16.60	19.06
18	17.30	17.17	17.82	17.31	16.64	16.27	16.73	16.44	16.25	16.55	16.65	18.94
19	17.26	17.12	17.80	17.13	16.60	16.32	16.66	16.47	16.32	16.43	16.75	18.93
20	17.16	17.25	17.82	16.97	16.60	16.46	16.57	16.45	16.35	16.37	16.93	18.95
21	17.15	17.25	17.87	16.88	16.57	16.37	16.52	16.54	16.33	16.37	16.95	18.97
22	17.35	17.15	17.80	16.84	16.58	16.27	16.49	16.66	16.32	16.37	16.85	18.98
23	17.45	17.12	17.65	16.81	16.69	16.18	16.47	16.60	16.25	16.50	16.77	19.02
24	17.55	17.12	17.57	16.82	16.62	16.18	16.51	16.56	16.23	16.70	16.76	19.05
25	17.57	17.25	17.50	17.01	16.57	16.18	16.61	16.52	16.25	16.55	16.90	19.07
26	17.45	17.37	17.50	16.90	16.52	16.25	16.49	16.48	16.33	16.43	16.88	19.10
27	17.30	17.46	17.65	16.76	16.49	16.39	16.39	16.50	16.35	16.37	17.10	19.12
28	17.23	17.55	17.65	16.68	16.47	16.26	16.28	16.59	16.25	16.37	17.20	19.14
29	17.25		17.50	16.87	16.58	16.26	16.41	16.70	16.20	16.45	.....	19.13
30	17.37		17.42	17.08	16.73	16.23	16.46	16.58	16.17	16.65	.....	19.17
31	17.37		17.35		16.63		16.54	16.47		16.75		19.15

T-27. Honolulu Board of Water Supply. Pearl City. Lat. 21°23'55", long. 157°58'30". Drilled observation basal water-table well in basalt of Koolau volcanic series, diameter 12 inches depth 71 feet, cased to 60. Land-surface datum is 47 feet above msl. Highest water level 22.20 above msl, Feb. 15, 1949; lowest 16.02 above msl, July 1, 1954. Records available: 1946-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.87	17.55	17.87	17.52	17.38	16.47	16.02	16.66	16.45	16.13	16.72	.....
2	17.97	17.40	17.95	17.50	17.42	16.45	16.06	16.65	16.38	16.17	16.75	.....
3	18.00	17.26	18.00	17.65	17.52	16.45	16.13	16.57	18.34	16.27	16.65	18.60
4	18.00	17.22	18.03	17.80	17.52	16.46	16.25	16.52	16.37	16.25	16.55	18.70
5	17.98	17.15	18.08	17.70	17.48	16.60	16.40	16.47	16.52	16.17	16.50	18.80
6	17.95	17.30	18.12	17.55	17.44	16.71	16.45	16.42	16.65	16.12	16.70	18.8?
7	17.87	17.42	18.17	17.43	17.35	16.60	16.38	16.41	16.63	16.12	16.87	18.9?
8	17.82	17.40	18.20	17.30	17.38	16.49	16.35	16.56	16.53	16.12	16.85	19.0?
9	17.90	17.25	18.23	17.23	17.52	16.39	16.32	16.56	16.45	16.22	16.70	19.14
10	18.00	17.14	18.23	17.24	17.42	16.33	16.37	16.50	16.40	16.35	16.65	19.16
11	18.00	17.05	18.17	17.42	17.23	16.30	16.48	16.45	16.37	16.42	16.62	19.2?
12	17.85	17.04	18.12	17.37	17.09	16.28	16.50	16.42	16.45	16.49	16.50	19.25
13	17.70	17.15	18.17	17.22	17.02	16.37	.....	16.42	16.45	16.45	16.60	19.29
14	17.55	17.37	18.22	17.12	16.93	16.30	.....	16.43	16.35	16.45	16.80	19.34
15	17.50	17.45	18.20	17.08	16.89	16.25	.....	16.52	16.27	16.43	16.75	19.4?
16	17.57	17.45	18.12	17.24	16.98	16.20	16.41	16.51	16.25	16.52	16.65	19.5?
17	17.70	.....	18.07	17.41	16.87	16.19	16.43	16.45	16.25	16.62	16.55	19.63
18	17.65	.....	18.06	17.55	16.77	16.17	16.52	16.37	16.26	16.60	16.60	19.6?
19	17.60	17.30	18.04	17.43	.....	16.16	16.54	16.41	16.30	16.50	16.65	19.6?
20	17.47	17.35	18.09	17.23	.....	16.25	16.50	16.39	16.32	16.45	16.82	19.7?
21	17.42	17.43	18.17	17.09	16.58	16.22	16.44	16.42	16.30	16.40	16.98	19.77
22	17.55	17.40	18.20	17.01	16.56	16.17	16.41	16.52	16.27	16.36	16.93	19.81
23	17.70	17.26	18.10	16.95	16.67	16.11	16.39	16.53	16.20	16.45	16.83	19.8?
24	17.82	17.26	18.04	16.96	16.60	16.08	16.41	16.50	16.12	16.62	16.76	19.8?
25	17.90	17.40	17.95	17.13	16.53	16.06	16.48	16.47	16.15	16.56	16.90	19.91
26	17.80	17.55	17.85	17.06	16.46	16.06	16.42	16.45	16.22	16.45	17.00	19.9?
27	17.65	17.72	17.90	16.92	16.44	16.16	16.32	16.44	16.21	16.37	17.10	19.9?
28	17.55	17.77	18.00	16.83	16.42	16.13	.....	16.49	16.17	16.37	17.34	20.01
29	17.45		17.90	16.94	16.46	16.08	.....	16.63	16.12	16.37	.....	20.0?
30	17.57		17.77	17.17	16.57	16.05	16.40	16.59	16.12	16.52	.....	19.9?
31	17.67		17.65		16.52		16.52	16.53		16.70		19.9?

T-28. Honolulu Board of Water Supply. Halemano Gulch, near Waialua. Lat. 21°34'40", long. 158°06'07". Drilled observation basal water-table well in basalt of Koolau volcanic series, diameter 12 inches, depth 60 feet, cased to 39. Land-surface datum is 35 feet above msl. Highest water level 12.33 above msl, Jan. 23, 1952; lowest 9.53 above msl, June 12, 1947. Records available: 1947-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.08	10.93	11.08	10.48	10.72	10.20	9.91	10.80	10.97	10.61	11.10	.....
2	11.06	10.87	11.06	10.45	10.76	10.17	9.95	10.83	10.86	10.77	11.07	.....
3	11.04	10.86	11.08	10.55	10.72	10.10	10.12	10.79	10.78	10.95	10.96	11.2?
4	11.00	10.84	11.09	10.68	10.66	10.13	10.30	10.79	10.83	10.91	10.85	11.2?
5	10.98	10.79	11.06	10.60	10.61	10.35	.....	10.83	11.00	10.74	10.76	11.27
6	11.01	10.94	11.07	10.37	10.54	10.49	.....	10.89	11.10	10.63	10.84	11.2?
7	11.03	11.04	11.08	10.22	10.55	10.31	.....	10.95	11.10	10.55	10.99	11.2?
8	11.04	10.98	11.08	10.10	10.54	10.30	.....	11.04	10.78	10.50	10.88	11.25
9	11.04	10.78	11.07	10.14	10.69	10.28	10.32	11.01	10.69	10.68	10.66	11.2?
10	11.07	10.67	11.06	10.27	10.58	10.10	10.35	10.98	10.65	10.87	10.61	11.2?
11	11.07	10.60	11.00	10.38	10.49	9.98	10.50	10.96	10.72	10.93	10.52	11.2?
12	11.16	10.54	10.97	10.24	10.43	9.95	10.55	10.93	10.87	10.93	10.49	11.3?
13	11.17	10.65	11.00	10.15	10.39	10.04	10.57	10.94	10.82	10.97	10.59	11.29
14	11.08	10.75	11.05	10.10	10.36	10.00	10.61	11.01	10.70	10.97	10.74	11.28
15	11.04	10.78	11.04	10.08	10.29	9.87	10.56	11.10	10.62	10.98	10.72	11.29
16	11.04	10.84	11.04	10.16	10.44	9.80	10.56	11.09	10.57	11.06	10.58	11.34
17	11.09	10.69	11.00	10.34	10.35	9.80	10.58	11.02	10.55	11.13	10.55	11.44
18	11.01	10.96	11.03	10.50	10.26	9.82	10.68	10.93	10.69	11.10	10.52	11.48
19	10.86	11.00	10.99	10.43	10.24	9.86	10.66	10.97	10.93	11.06	10.53	11.49
20	10.77	11.03	11.01	10.26	10.19	9.97	10.67	10.99	10.96	11.02	10.63	11.51
21	10.74	11.06	11.01	10.16	10.09	9.98	10.70	11.06	10.78	10.95	10.88	11.53
22	10.87	11.00	11.02	10.11	10.07	9.95	10.62	11.14	10.72	10.92	10.82	11.52
23	10.94	10.97	.....	10.09	10.23	9.92	10.56	11.10	10.66	11.00	10.62	11.51
24	11.02	11.03	.....	10.13	10.18	9.87	10.58	11.03	10.67	11.10	10.55	11.50
25	11.05	11.04	.....	10.26	10.10	9.83	10.70	11.04	10.81	11.05	10.60	11.50

T-28--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	11.08	11.08	10.86	10.20	10.07	9.86	10.73	11.05	11.00	10.97	10.68	11.50
27	11.07	11.09	10.87	10.09	10.05	9.96	10.64	11.01	10.93	10.92	10.75	11.50
28	10.98	11.09	10.91	10.11	10.02	9.96	10.56	11.05	10.75	10.86	10.85	11.50
29	10.96		10.83	10.28	10.02	9.93	10.60	11.15	10.68	10.90	.....	11.48
30	10.96		10.67	10.59	10.19	9.89	10.71	11.12	10.64	10.99	.....	11.45
31	10.99		10.59		10.24		10.73	11.05		11.09		11.43

T-41. Honolulu Board of Water Supply. Near Waipahu. Lat. 21°22'45", long. 158°01'50". Drilled observation artesian well in basalt of Koolau volcanic series, diameter 12 inches, depth 113 feet, cased to 92. Land-surface datum is 84 feet above msl. Highest water level 25.25 above msl, Jan. 26, 1952; lowest 15.06 above msl, Sept. 24, 1953. Records available: 1949-54.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	19.70	18.20	19.70	17.63	18.75	15.89	15.38	17.05	15.93	15.35	16.85	.....
2	19.85	18.55	19.90	17.60	18.97	15.86	15.35	16.65	15.82	15.47	16.50	.....
3	19.95	17.25	20.01	18.50	18.98	15.82	15.43	16.22	15.75	15.50	16.25	21.15
4	19.45	17.10	20.15	19.08	18.97	15.90	15.75	16.03	15.98	15.42	16.00	21.35
5	19.25	17.00	20.25	18.40	18.79	16.90	16.66	15.92	16.35	15.30	15.90	21.50
6	19.10	17.90	20.33	17.80	18.00	17.00	16.45	15.85	16.92	15.25	16.75	21.62
7	18.75	18.45	20.37	17.40	17.73	16.42	16.10	15.92	16.61	15.22	17.60	21.70
8	18.50	18.00	20.42	17.13	18.35	16.22	15.93	16.18	16.15	15.25	17.10	21.80
9	19.00	17.45	20.45	17.00	18.71	15.95	15.83	16.12	15.95	15.42	16.50	21.85
10	19.55	17.15	20.01	17.47	18.00	15.82	15.87	15.97	15.82	15.60	16.25	21.95
11	19.00	17.00	19.60	18.30	17.42	15.75	16.03	15.87	15.77	15.65	16.06	22.00
12	18.35	16.80	19.35	17.82	17.08	15.72	15.95	15.81	15.62	15.72	15.95	22.06
13	17.90	17.60	19.50	17.20	16.87	15.87	15.86	15.77	15.85	15.63	16.85	22.11
14	17.60	18.35	19.90	16.92	16.70	15.75	15.83	15.81	15.72	15.57	17.65	22.17
15	17.45	18.10	19.50	16.95	16.65	15.65	15.80	16.05	15.61	15.75	17.00	22.26
16	18.10	17.65	19.00	17.85	16.80	15.57	15.76	15.98	15.53	16.25	16.40	22.40
17	18.80	17.50	18.85	18.65	16.67	15.54	15.85	15.83	15.52	16.35	16.15	22.45
18	18.25	17.40	18.75	18.90	16.47	15.52	16.06	15.75	15.62	16.25	16.00	22.47
19	17.80	17.35	18.75	18.05	16.38	15.48	16.00	15.72	15.67	15.95	15.93	22.51
20	17.55	18.00	19.45	17.35	16.30	15.54	15.88	15.70	15.72	15.75	16.75	22.50
21	17.50	18.60	19.90	17.00	16.12	15.56	15.78	15.85	15.67	15.63	17.65	22.55
22	18.25	18.00	19.55	16.79	16.07	15.51	15.85	16.12	15.55	15.60	17.05	22.60
23	18.90	17.50	19.15	16.65	16.24	15.43	15.81	16.05	15.45	16.10	16.50	22.65
24	19.30	17.60	18.95	17.20	16.17	15.40	15.86	15.92	15.35	16.42	16.27	22.65
25	19.30	18.20	18.55	17.66	16.01	15.37	16.01	15.87	15.35	16.20	16.90	22.70
26	18.70	18.80	18.30	17.10	15.93	15.38	15.93	15.84	15.42	15.80	17.05	22.75
27	18.15	19.25	19.00	16.68	15.89	15.50	15.77	15.86	15.42	15.65	17.55	22.77
28	17.75	19.50	19.50	16.46	15.87	15.53	15.67	16.26	15.37	15.60	18.50	22.77
29	17.55		18.90	17.12	15.88	15.44	15.70	16.56	15.35	15.60	.....	22.35
30	18.40		18.25	18.25	16.04	15.36	16.10	16.27	15.30	16.35	.....	22.25
31	18.87		17.80		16.00		16.90	16.09		17.25		22.15

T-44. Honolulu Board of Water Supply. 16th Ave. and Claudine St., Honolulu. Lat. 21°17'17", long. 157°47'39". Drilled observation water-table well in basalt of Koolau volcanic series, diameter 1 inch, depth 171 feet, cased to 168, perforations 158, 163, 167. Land-surface datum is 152.04 feet above msl. Highest water level 11.07 above msl, Aug. 12, 1937; lowest 8.12 above msl, July 8, 1947. Records available: 1936-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	9.50	Apr. 5	9.37	July 6	9.16	Oct. 4	9.21
11	9.55	12	9.33	12	9.14	11	9.20
18	9.60	19	9.35	19	9.25	18	9.23
25	9.59	26	9.34	26	9.13	25	9.22
Feb. 1	9.59	May 3	9.30	Aug. 2	9.21	Nov. 1	9.22
8	9.61	10	9.33	9	9.23	8	9.18
15	9.42	17	9.27	16	9.26	15	9.25
24	9.44	24	9.28	23	9.24	22	9.21
Mar. 1	9.47	June 1	9.22	30	9.30	29	9.50
8	9.44	7	9.23	Sept. 7	9.32	Dec. 6	9.29
15	9.42	14	9.19	13	9.30	13	9.36
22	9.42	21	9.20	20	9.31	20	9.36
29	9.36	28	9.12	27	9.24	27	9.39

T-45. Honolulu Board of Water Supply. Near North Halawa Valley. Lat. 21°22'34", long. 157°55'26". Drilled observation basal water-table well in basalt of Koolau volcanic series, diameter 12 inches, depth 85 feet, cased to 59. Land-surface datum is 57 feet above msl. Highest water level 21.79 above msl, Dec. 31, 1954; lowest 18.10 above msl, Sept. 24, 1954. Records available: 1954. Recording gage installed June 23, 1954, by Honolulu Board of Water Supply.

Daily mean water level, above msl, from recorder graph*

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.36	18.67	18.43	18.17	18.65	.....
2	18.37	18.71	18.37	18.22	18.80	.....
3	18.43	18.61	18.34	18.35	18.60	20.37
4	18.58	18.51	18.41	18.25	18.52	20.45
5	18.70	18.57	18.56	18.17	18.52	20.52
6	18.62	18.56	18.69	18.15	18.80	20.56
7	18.50	18.58	18.65	18.15	18.92	20.64
8	18.47	18.71	18.52	18.15	18.70	20.75
9	18.47	18.67	18.50	18.20	18.63	20.84
10	18.62	18.55	18.40	.....	18.65	20.92
11	18.74	18.51	18.32	.....	18.68	20.98
12	18.72	18.48	18.37	.....	18.65	21.04
13	18.67	18.52	18.37	.....	18.85	21.06
14	18.70	18.50	18.25	.....	18.95	21.14
15	18.69	18.65	18.23	.....	18.85	21.20
16	18.66	18.70	18.22	.....	.....	21.25
17	18.67	18.57	18.17	.....	.....	21.29
18	18.76	18.50	18.17	.....	.....	21.36
19	18.77	18.52	18.27	.....	18.83	21.41
20	18.67	18.52	18.25	.....	19.00	21.45
21	18.62	18.56	18.27	18.25	19.14	21.48
22	18.57	18.67	18.23	18.26	19.04	21.52
23	18.57	18.68	18.12	18.50	18.94	21.56
24	18.57	18.58	18.10	18.70	18.90	21.59
25	18.67	18.57	18.15	18.50	19.06	21.63
26	18.57	18.53	18.30	18.40	19.06	21.66
27	18.42	18.52	18.30	18.32	19.18	21.69
28	18.35	18.58	18.23	18.37	19.33	21.73
29	18.35	18.72	18.15	18.45	.....	21.73
30	18.43	18.72	18.12	18.62	.....	21.68
31	18.52	18.50		18.77		21.79

* No record for January, February, March, April, May, and June.

T-48. Honolulu Suburban Water System. At head of Maunawili Valley. Lat. 21°20'42", long. 157°47'14". Drilled observation high-level water-table well in basalt of Koolau volcanic series, diameter 2 inches, depth 452 feet, cased 0-60, 311-452. Land-surface datum is 1,272 feet above msl. Highest water level 1,170.1 above msl, Aug. 20, 1954; lowest 1,012.6 above msl, July 3, 1954. Records available: 1953-54. July 3, 1,012.6; Aug. 20, 1,170.1; Oct. 12, 1,065.4.

T-48A. Honolulu Suburban Water System. At head of Maunawili Valley. Lat. 21°20'42", long. 157°47'14". Drilled observation high-level water-table well in basalt of Koolau volcanic series, diameter $\frac{3}{4}$ inch, depth 1,230 feet, cased to 1,120. Land-surface datum is 1,272 feet above msl. Highest water level 685.3 above msl, June 26, 1954; lowest 617.1 above msl, Aug. 2[illegible], 1954. Records available: 1953-54. June 26, 685.3; July 3, 644.6; Aug. 8, 618.4; Aug. 20, 617.1; Oct. 12, 617.9.

T-49. Honolulu Suburban Water System. At head of Maunawili Valley. Lat. 21°20'48", long. 157°46'57". Drilled observation high-level water-table well in basalt of Koolau volcanic series, diameter 1 inch, depth 805 feet, cased to 805, perforations 784-805. Land-surface datum is 777 feet above msl. Highest water level 635.9 above msl, Mar. 6, 1954; lowest 627.6 above msl, May 29, July 3, 1954. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 6	635.9	Apr. 24	630.0	June 26	627.7	Aug. 8	635.3
27	634.2	May 29	627.6	July 3	627.6	20	633.5
Apr. 10	634.4	June 5	627.7	17	627.7	Oct. 12	629.7

T-50. Honolulu Suburban Water System. At head of Maunawili Valley. Lat. 21°20'33", long. 157°46'54". Drilled observation high-level water-table well in basalt of Koolau volcanic series, diameter 1 inch, depth 1,036 feet, cased to 1,015, perforations 994-1,015. Land-surface datum is 1,008 feet above msl. Highest water level 668.1 above msl, Oct. 12, 1954; lowest 666.8 above msl, Aug. 20, 1954. Records available: 1954. Aug. 2, 667.8; Aug. 3, 667.8; Aug. 4, 667.8; Aug. 20, 666.8; Oct. 12, 668.1.

Shaft 4. U. S. Army. Near Wahiawa. Lat. 21°29'30", long. 158°01'45". Dug domestic high-level water-table well in basalt of Koolau volcanic series, size 8 by 8 feet, vertical depth of 30-degree inclined shaft 563 feet, lined with concrete in upper part, pump chamber at bottom of shaft. Land-surface datum is 850 feet above msl. Highest water level 284.13 above msl, Sept. 4, 1937; lowest 273.17 above msl, Mar. 11, 1946. Records available: 1936-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 3	275.55	Mar. 28	274.88	June 20	273.93	Sept. 12	273.86
10	275.58	Apr. 4	274.87	27	273.88	19	273.90
17	275.54	11	274.69	July 4	273.78	26	273.88
24	275.45	18	274.63	11	273.80	Oct. 3	273.86
31	275.39	25	274.49	18	273.75	10	273.88
Feb. 7	285.39	May 2	274.41	25	273.72	17	273.95
14	275.28	9	274.48	Aug. 1	273.70	Nov. 7	273.72
21	275.28	16	274.28	8	273.70	21	273.67
28	275.18	23	274.22	15	273.73	28	273.76
Mar. 7	275.05	30	274.15	22	273.75	Dec. 3	273.59
14	275.05	June 6	274.05	29	273.74	12	273.58
21	274.94	13	274.00	Sept. 5	273.82	27	273.67

NEVADA

By C. P. Zones

Scope of Water-Level Program

The observation-well program was continued in Nevada in 1954 in cooperation with the Nevada State Engineer's Office. Measurements were made in 238 wells, 16 of which were equipped with recording gages. Figures 43-48 show the location of observation wells in Nevada. Most of the measurements were made in March and September. Measurements were made quarterly or monthly in heavily pumped areas or in valleys where ground-water investigations are in progress. Exclusive of readings taken from recorder charts, 687 measurements were made during the year. As part of the program for the study of the ground-water resources of Nevada, additional basic hydrologic data were collected during 1954. Investigations were continued in several valleys in the State.

Precipitation

The average precipitation in Nevada for 1954 was 6.38 inches, 2.22 inches below normal. The southern part of the State, with 89 percent of normal precipitation, fared better than the northeastern and northwestern parts, both of which received only 68 percent of normal precipitation. A number of stations in the southern half of the State received above-normal amounts of precipitation. As of April 1, 1954, the snow pack in the southern half of the State ranged from normal to 150 percent of normal; in the northern half it was only 20 to 75 percent of normal.

Runoff

Runoff in Nevada during the water year beginning October 1, 1953, and ending September 30, 1954, was below normal. A total of 71,710 acre-feet of runoff was recorded for the Humboldt River at Palisade, Eureka County. This was 35 percent of the median for the station. The runoff at Palisade is considered to be representative of the runoff in the northern part of the State. At Coleville, Calif., runoff on the West Walker River totaled 137,100 acre-feet, or 78 percent of the median. Runoff at this station is indicative of the runoff along the east side of the Sierra Nevada.

Pumpage

The inventory of ground-water withdrawals for the State in 1954 was incomplete. However, on the basis of an increase in the number of irrigation wells and the below-normal precipitation in most parts of the State, it is believed that in 1954 at least as much ground water was withdrawn as in 1953, when it was estimated that the withdrawal of ground water was about 130,000 acre-feet. In heavily pumped Las Vegas Valley, the amount of ground water withdrawn again exceeded that of the previous year. A complete inventory for the valley was not made but, on the basis of the data available, it appears that the pumpage was about 49,000 acre-feet, an increase of about 3,500 acre-feet over the pumpage in 1953. An inventory of ground-water withdrawals in 1954 from Pahrump Valley indicates that about 20,000 acre-feet was withdrawn from wells and springs. In 1953 it was estimated that withdrawals were 34,000 acre-feet. The dissimilarity between the two estimates is due in part to a reduction in 1954 in the cultivated acreage and in part to the introduction of better controls for gathering pumpage data.

Interpretation of Water-Level Fluctuations

Ground-water levels in September 1954 were generally below those of 1953. The decline in water levels was due in part to below-normal precipitation and in part to increased pumpage. The largest average decline was noted in heavily pumped Las Vegas Valley, Clark County, where artesian pressures in 15 selected wells averaged 3 feet lower in August 1954 than in August 1953. In the valley as a whole, the average loss in artesian pressures was not as great as in the intensely developed Las Vegas area. The decline is a continuation of the downward trend that has prevailed in recent years. In Pahrump Valley, Clark and Nye Counties, levels in 1954 were about 1 foot below those of 1953. As long as the present rate of ground-water withdrawals is maintained, water levels and artesian pressures in Pahrump Valley will continue to fall. In northern Nevada, ground-water levels in the Humboldt River valley and in adjacent valleys

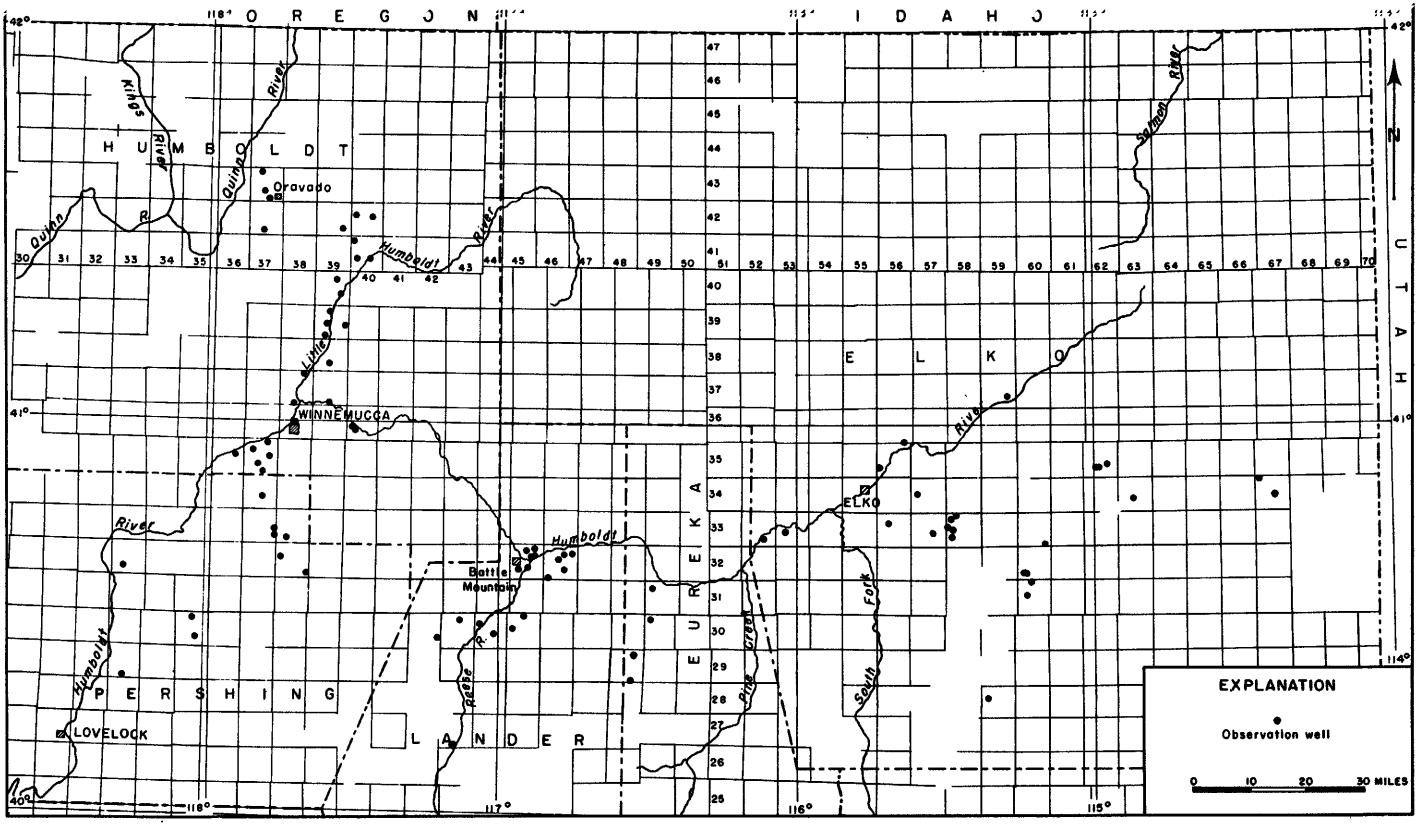


Figure 43.--Location of observation wells in Elko, Eureka, Humboldt, Lander, and Pershing Counties, Nev., 1954.

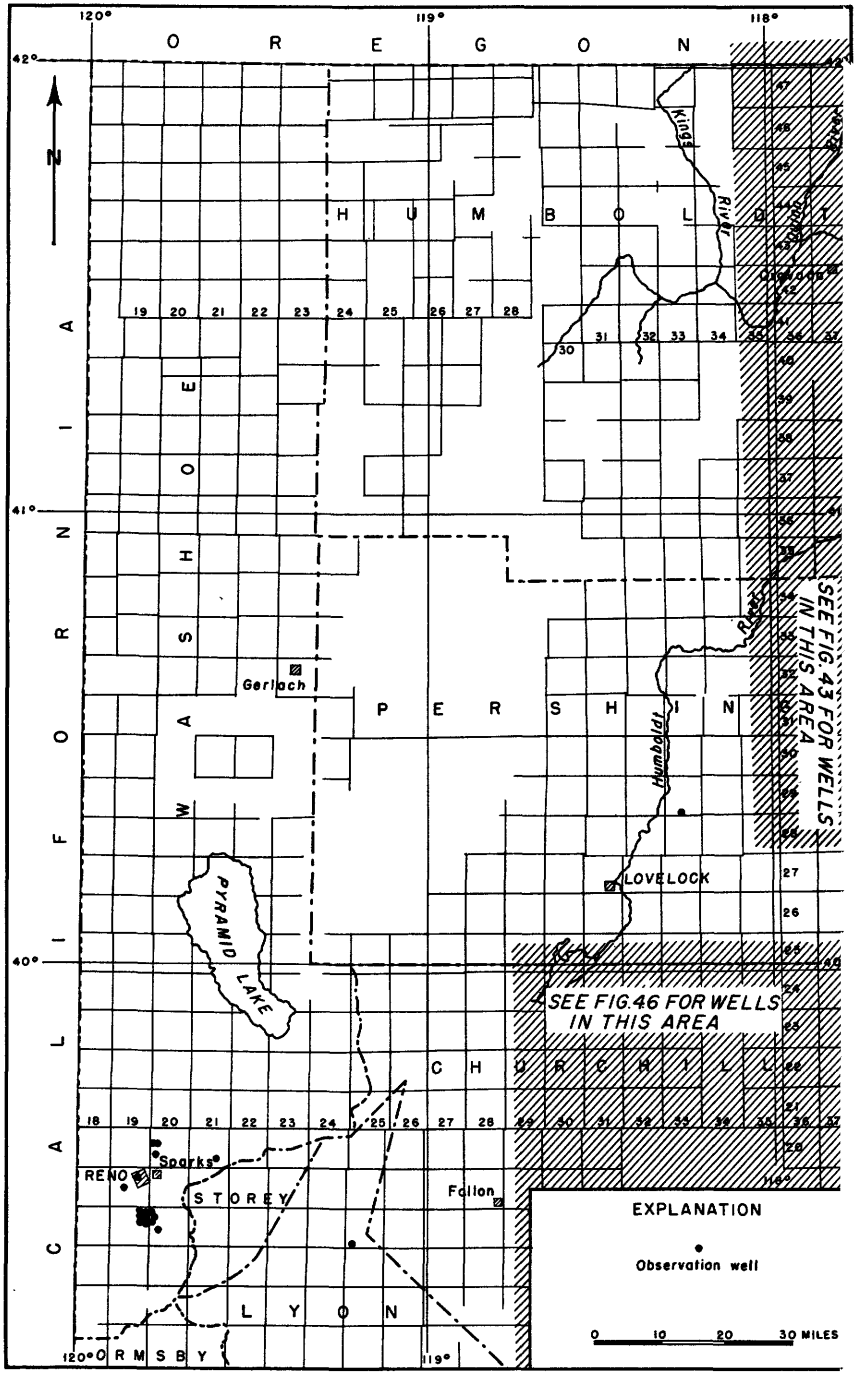


Figure 44. --Location of observation wells in Lyon, Pershing, and Washoe Counties, Nev., 1954.

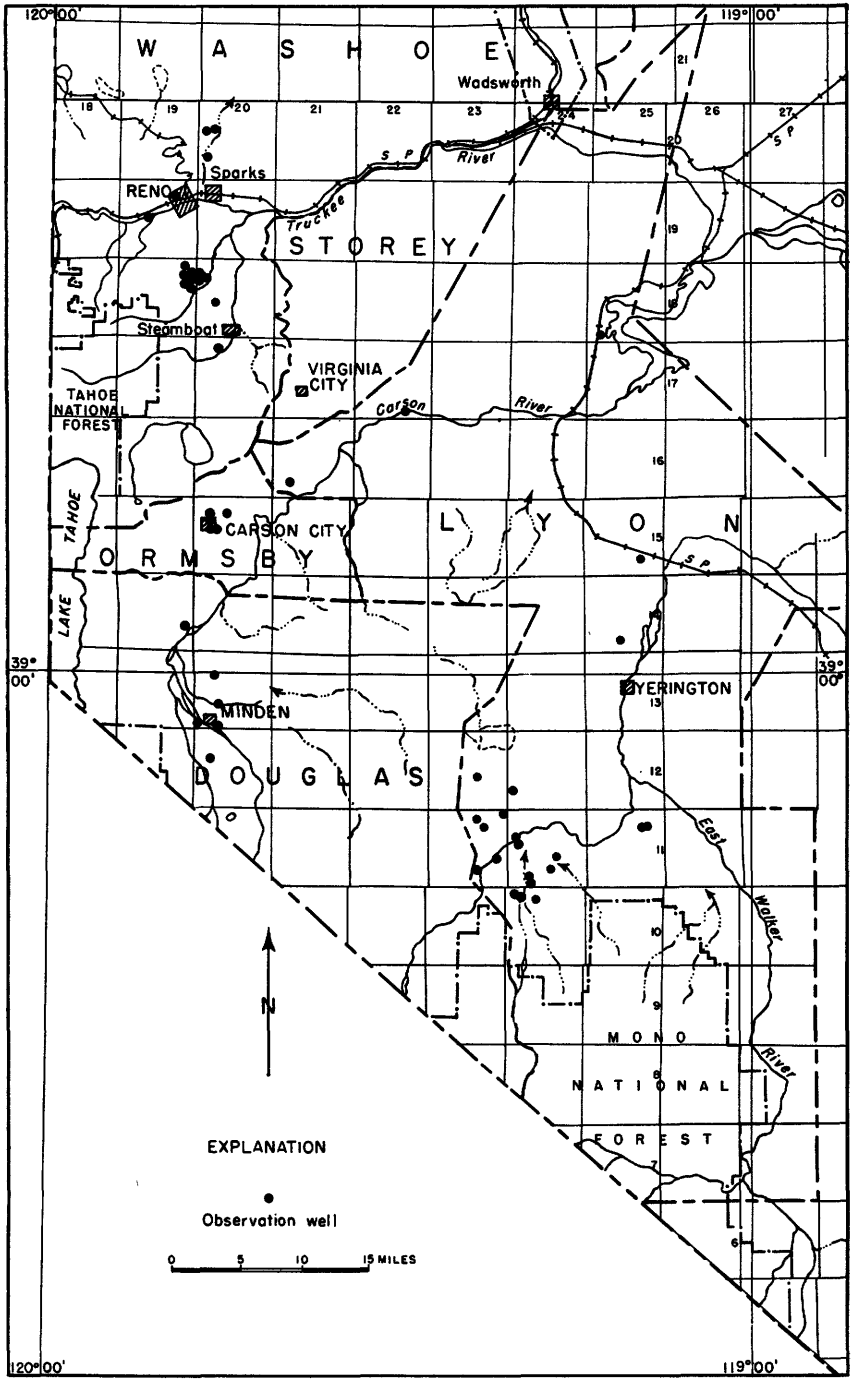


Figure 45.--Location of observation wells in Douglas, Lyon, Ormsby, and Washoe Counties, Nev., 1954.

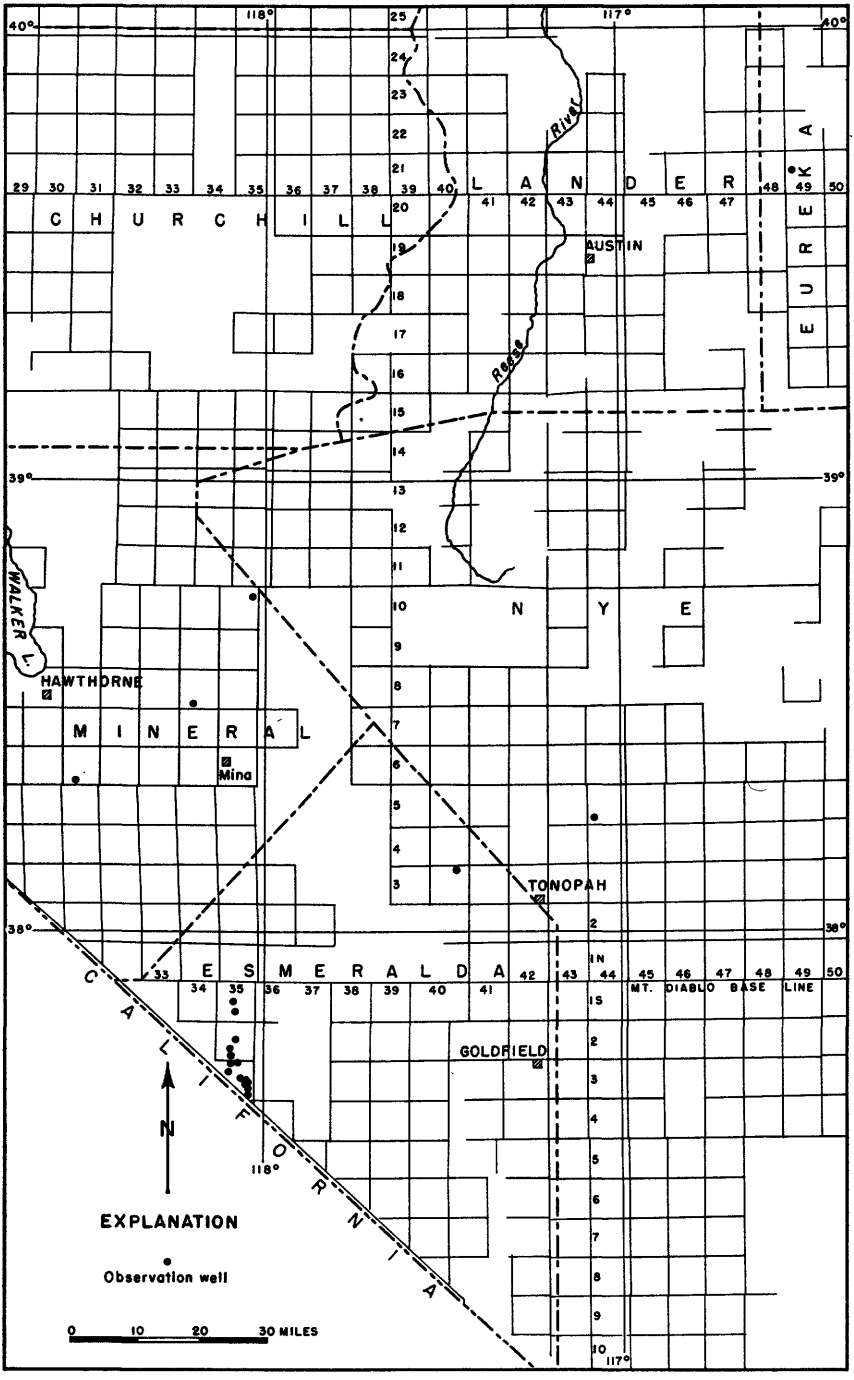


Figure 46. --Location of observation wells in Esmeralda, Eureka, Mineral, and Nye Counties, Nev., 1954.

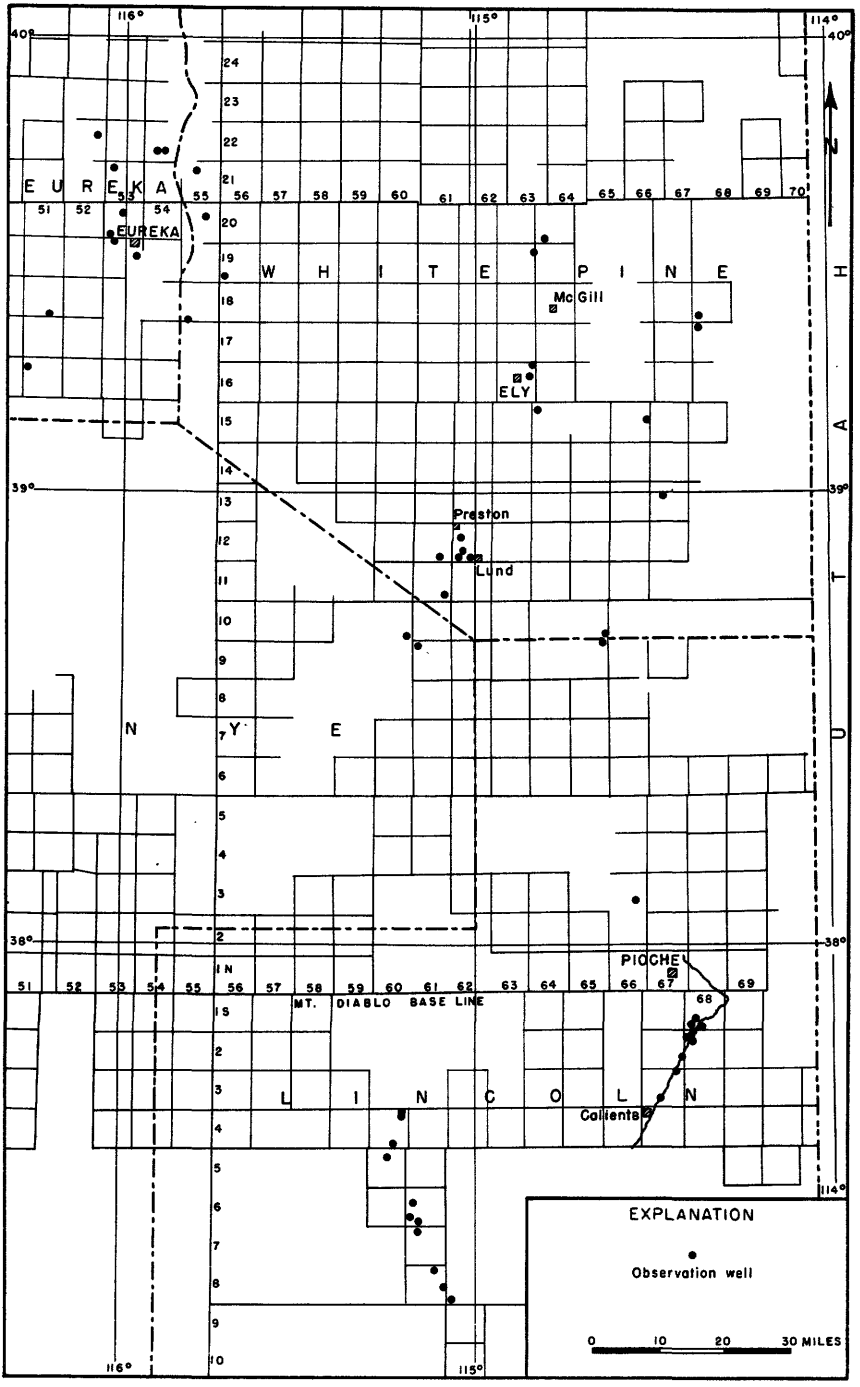


Figure 47.--Location of observation wells in Eureka, Lincoln, Nye, and White Pine Counties, Nev., 1954.

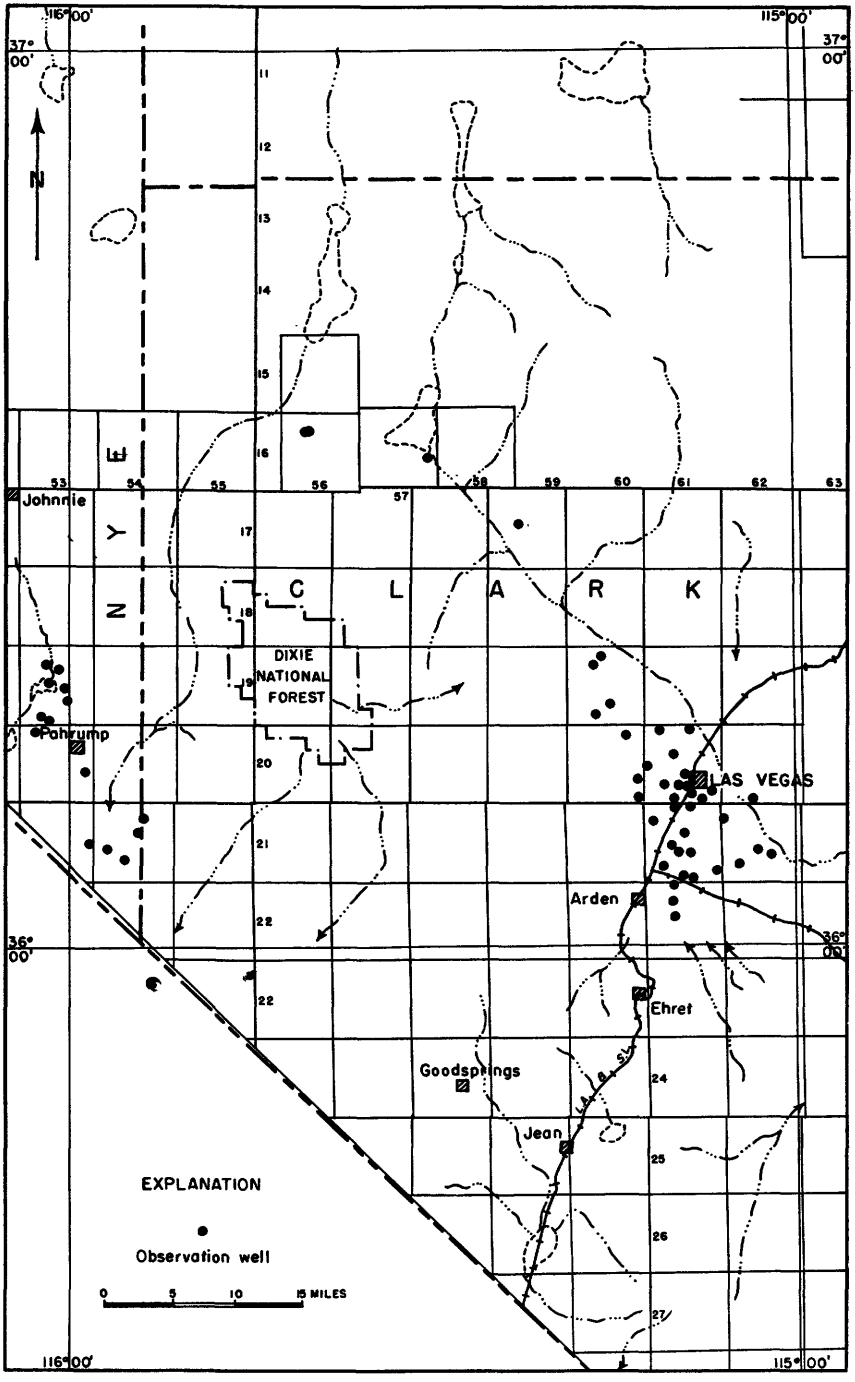


Figure 48.--Location of observation wells in Clark and Nye Counties, Nev., 1954.

averaged from 0.75 foot to more than 1.5 feet below normal. Water levels in many wells in that area were at record lows in September mainly as a result of the continuing drought but also because of increased pumping. The east-central part of the State fared only slightly better. Although water levels there were for the most part below average, they were somewhat above those of 1953. The rise in ground-water levels was probably the result of above-normal precipitation in that part of the State.

Well-Numbering System

The number assigned to a well in this report is both an identification and a location number. It is based on the Mount Diablo base and meridian network of surveys established by the General Land Office (now Bureau of Land Management). The first segment of a well number indicates the township. If the township is south of Mount Diablo base, the letter "S" appears before the township number. The second segment, separated from the township number by a slant, is the range number east of Mount Diablo meridian. The third segment, separated from the range number by a hyphen, is the section number. The lowercase letters a, b, c, and d after the section number locate the well within the section. The first letter denotes the 160-acre tract; the second letter, the 40-acre tract; and the third letter, the 10-acre tract. The letters are assigned in a counterclockwise direction, beginning in the northeast quarter. Where more than one well is in the same subdivision, consecutive numbers beginning with "1" are assigned in the order in which the well data were first recorded. Thus, well number S10/60-4dab1 is used to designate the first well selected in the $NW\frac{1}{4}NE\frac{1}{4}SE\frac{1}{4}$ sec. 4, T. 10 S., R. 60 E. Similarly, well number 12/23-22ac3 is used to designate the third well recorded in the $SW\frac{1}{4}NE\frac{1}{4}$ sec. 22, T. 12 N., R. 23 E.

Well Descriptions and Water-Level Measurements

Water levels are in feet below land-surface datum unless otherwise indicated. When some measurements in a table are above and others below the plane of reference, a plus (+) or minus (-) sign is placed immediately before the first entry in each column of each mixed table.

Clark County

Indian Spring Valley

S16/56-9bc1. Tim Harnedy. Drilled domestic and irrigation well in alluvium of Quaternary age. Highest 12.45 below lsd, Feb. 15, 1950; lowest 14.22 below lsd, Aug. 24, 1953. Records available: 1947-54. Feb. 14, 13.92; May 18, 13.50.

S16/56-9bc2. Tim Harnedy. Drilled domestic and irrigation well in alluvium of Quaternary age, diameter 8 inches, depth 582 feet. Highest water level 2.75 below lsd, Feb. 15, 1950; lowest 6.70 below lsd, Aug. 5, 1949. Records available: 1946-51. No measurement made in 1954.

Las Vegas Valley

S16/57-24c1. U. S. Bureau of Land Management. Drilled unused well in alluvium of Quaternary age, diameter 4 inches, depth 151 feet. Highest water level 122.43 below lsd, Feb. 24, 1954; lowest 124.09 below lsd, Mar. 18, 1946. Records available: 1946-54. Feb. 24, 122.43.

S17/59-16bc1. U. S. Bureau of Land Management. Drilled stock well in alluvium of Quaternary age, diameter 6 inches, depth 300 feet. Highest water level 27.04 below lsd, Feb. 12, 1954; lowest 31.01 below lsd, Sept. 12, 1944. Records available: 1944-54. Feb. 12, 27.04; May 7, 29.46; Aug. 26, 30.25.

S19/60-4dab1. P. J. Goumond (State Engineer No. 450). Drilled irrigation artesian well, diameter 16 inches, depth 780 feet. Highest water level 30.40 above lsd, Apr. 5, 1946; lowest 0.73 above lsd, Aug. 27, 1951. Records available: 1946, 1948-54. Feb. 8, +1.55; May 7, +1.07; Aug. 25, +1.48.

S19/60-9bcc1. P. J. Goumond (State Engineer No. 427). Drilled unused artesian well, diameter 10 inches, depth 830 feet, cased to 140. Highest water level 43.65 below lsd, June 3, 1944; lowest 86.98 below lsd, Nov. 19, 1954. Records available: 1944-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	81.66	81.04	82.60	85.50	86.32	87.83	86.64	88.03	88.10	.....	85.70	a87.19
2	82.36	81.20	84.12	85.56	87.08	87.50	86.54	88.80	.....	.....	85.03	86.48
3	81.65	81.08	83.07	84.97	86.92	87.06	87.04	88.71	.....	.....	85.50	86.84
4	83.10	80.27	83.90	85.69	87.34	87.89	86.92	89.04	.....	.....	85.13	86.18
5	82.70	80.97	84.40	84.80	87.24	87.74	87.04	88.11	.....	.....	86.76	86.18

S19/60-9bcc1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	83.43	80.23	84.68	85.27	87.33	87.01	87.78	88.63	.....	.....	85.70	86.35
7	82.74	80.96	84.58	85.44	87.35	87.91	87.87	88.92	87.50	.....	86.47	85.33
8	83.61	80.83	84.62	85.63	87.29	87.39	87.33	88.03	87.86	.....	86.45	85.19
9	83.06	81.64	84.57	85.80	87.38	87.23	87.36	87.78	.....	.....	85.72	84.80
10	.....	81.94	84.75	85.84	.....	87.32	87.43	87.72	.....	.....	86.63	84.83
11	.....	81.45	83.01	84.51	.....	87.24	88.33	88.20	.....	.....	85.85	.....
12	81.50	82.18	83.85	84.66	.....	86.74	88.25	88.46	.....	87.85	86.13	.....
13	82.11	81.59	84.88	85.77	.....	86.56	88.24	88.70	.....	89.06	86.35	.....
14	81.42	81.10	85.06	85.93	.....	86.68	88.38	88.70	86.84	90.72	85.73	.....
15	82.04	.....	84.26	86.20	87.63	87.28	88.16	88.26	87.30	.....	86.15	.....
16	81.25	81.37	83.54	85.58	.....	87.48	86.58	87.38	87.29	.....	86.01	.....
17	81.71	81.46	84.28	86.21	.....	87.42	88.50	87.53	87.24	.....	86.28	.....
18	81.04	80.53	85.19	86.28	.....	87.33	88.34	87.84	87.91	.....	86.03	.....
19	81.56	81.32	85.16	86.37	.....	88.12	87.66	88.20	88.50	87.90	86.98	.....
20	81.72	82.20	85.24	86.46	.....	88.08	88.45	86.90	88.18	.....	85.55	.....
21	81.13	82.41	85.29	86.45	.....	88.00	88.20	87.90	88.30	.....	86.05	83.02
22	81.67	82.58	84.66	86.49	.....	87.98	87.46	87.84	88.16	.....	85.45	83.09
23	80.74	82.13	84.12	86.66	.....	88.02	88.52	.....	.....	.....	86.76	83.00
24	81.39	82.94	84.14	86.62	.....	87.34	88.54	87.56	.....	.....	86.37	82.88
25	80.62	82.78	84.26	86.61	.....	87.90	88.22	.....	.....	.....	.....	82.86
26	.....	82.74	84.22	86.66	.....	86.66	87.74	.....	.....	85.68	.....	82.90
27	81.44	82.80	83.96	86.77	.....	88.26	88.00	.....	.....	85.77	.....	82.93
28	80.67	83.10	83.92	86.84	.....	86.92	87.90	.....	.....	84.88	.....	83.22
29	80.51		83.96	86.85	.....	86.73	88.60	.....	.....	84.60	.....	82.80
30	81.20		84.94	86.71	.....	86.63	88.69	.....	.....	85.40	86.30	82.68
31	80.48		85.51		.....		88.02	87.91		85.45		82.56

a Pumping.

S19/60-27bdc1. U. S. Geol. Survey (State Engineer No. 554). Drilled observation artesian well, diameter 5 inches, depth 905 feet, cased to 84. Land-surface datum is 2,360.8 feet above msl. Highest water level 46.9 above lsd, June 3, 1946; lowest 7.1 above lsd, Aug. 29, 1954. Records available: 1946-54.

Daily noon water level, above lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	12.8	12.0	11.1	7.7	8.1	9.2	8.8	....	7.8	8.2	8.0
2	....	....	....	11.3	8.2	8.4	9.1	8.8	....	7.9	8.0	8.2
3	....	....	11.6	11.3	8.9	8.4	9.4	8.6	....	7.6	8.5	8.2
4	11.7	....	11.4	11.1	9.3	8.4	9.0	8.9	....	7.7	8.5	8.2
5	....	....	11.5	11.0	9.3	8.2	8.5	8.9	....	7.9	8.5	8.1
6	....	....	12.0	11.0	9.3	7.9	9.5	9.0	....	8.0	8.5	7.7
7	....	12.7	12.0	10.9	9.3	8.2	9.5	9.0	8.7	8.1	8.2	8.3
8	....	....	12.0	11.1	9.4	7.8	9.2	8.9	8.6	8.0	8.1	8.5
9	....	....	11.3	10.9	9.1	7.9	9.1	8.5	8.5	8.3	8.0	8.0
10	....	....	11.4	11.0	9.2	8.0	9.3	8.8	8.5	8.2	8.5	8.1
11	11.8	....	11.2	11.0	9.2	8.2	8.9	9.0	8.5	8.2	8.0	8.0
12	....	....	11.3	11.0	9.3	8.2	....	8.9	8.5	8.2	8.2	8.0
13	....	....	11.3	11.0	9.1	8.4	....	8.8	8.4	8.1	8.2	8.0
14	....	....	11.6	10.9	9.0	8.6	....	8.8	8.2	8.0	8.3	9.0
15	....	12.7	11.3	10.7	8.6	8.9	....	8.6	8.4	8.0	8.9	8.7
16	....	....	....	10.3	8.4	8.1	....	7.2	8.2	8.0	8.2	9.0
17	....	....	....	10.1	8.3	8.9	....	8.0	8.1	7.9	8.2	9.0
18	12.3	....	....	10.0	9.1	8.6	....	8.0	8.2	7.7	8.1	8.5
19	....	....	....	9.5	8.9	8.4	8.6	8.2	8.1	7.8	8.1	8.5
20	....	....	....	9.0	9.0	8.6	9.2	8.5	7.9	7.9	8.1	8.5
21	....	....	....	9.0	8.8	8.9	9.2	8.7	7.7	7.8	8.3	10.5
22	....	12.5	....	8.8	8.2	9.2	8.9	8.6	7.8	7.9	8.3	9.5
23	....	....	11.2	8.5	8.9	8.7	8.5	....	7.5	8.0	8.2	9.5
24	....	....	11.3	8.3	9.3	8.9	8.1	....	7.5	7.7	8.4	9.5
25	....	....	11.3	8.5	8.8	8.2	8.0	8.3	7.8	7.8	8.5	9.2
26	12.5	....	11.7	8.5	8.5	8.2	7.9	7.9	7.5	7.8	8.4	9.0
27	....	....	12.0	8.3	8.4	8.9	8.1	7.3	7.5	8.3	8.3	9.0
28	....	....	12.1	8.3	8.0	8.9	8.3	7.2	7.6	8.2	8.2	10.5
29	....		12.0	8.5	8.3	9.0	8.3	7.1	7.8	8.5	7.9	9.5
30	....		11.2	8.2	....	9.2	8.0	7.2	7.5	8.5	8.1	10.0
31	....		11.1		....		9.0	....		8.5		10.0

S19/60-33baa1. U. S. Geol. Survey (State Engineer No. 555). Drilled observation artesian well, diameter 8 inches, depth 1,008 feet, cased to 93. Land-surface datum is 2,406.6 feet above msl. Highest water level 28.80 above lsd, Oct. 17, 1946; lowest 15.08 below lsd, July 31, 1954. Records available: 1946-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.66	8.53	9.75	11.27	13.31	13.61	13.19	14.75	13.70	14.50	13.91	.....
2	.....	8.59	10.03	11.34	13.42	13.62	13.07	14.58	.....	14.39	13.97	.....
3	.....	8.54	.....	11.43	12.90	13.52	13.06	.....	.....	14.39	13.78	13.32
4	.....	8.52	.....	11.50	12.80	13.44	13.43	.....	.....	14.18	13.71	13.42
5	9.88	8.50	.....	11.40	12.75	13.42	13.58	.....	.....	14.30	13.77	13.28
6	9.90	8.52	.....	11.21	12.81	13.61	13.61	.....	.....	14.15	13.84	13.35
7	9.93	8.52	10.70	11.48	12.68	13.52	13.65	.....	.....	14.15	13.79	13.50
8	.....	.....	.....	11.47	12.67	13.44	13.77	.....	.....	14.24	13.95	13.42
9	.....	8.62	10.65	11.55	12.76	13.38	13.85	14.26	.....	14.00	.....	13.20
10	.....	8.77	10.68	11.59	12.82	13.42	13.97	14.12	.....	13.96	.....	12.96
11	.....	8.96	10.67	11.48	.....	13.36	14.10	14.03	.....	13.90	.....	13.10
12	9.53	8.98	10.50	11.36	.....	13.33	14.06	14.07	.....	14.04	.....	13.04
13	9.49	9.02	10.77	11.27	.....	13.42	14.00	14.31	.....	14.23	.....	12.82
14	9.49	8.87	10.94	11.37	.....	13.40	14.05	14.44	14.29	14.53	.....	12.80
15	9.46	.....	.....	11.61	.....	13.30	13.97	14.34	14.26	14.42	.....	12.77
16	9.39	8.81	10.71	12.09	.....	13.90	14.06	14.53	14.27	14.34	14.00	12.70
17	.....	8.70	.....	12.09	.....	13.95	14.14	14.56	14.31	14.53	14.00	12.62
18	.....	8.75	.....	12.29	.....	14.26	14.08	14.32	14.34	14.64	13.90	12.55
19	8.86	8.77	.....	12.47	.....	14.85	14.19	14.06	14.44	14.74	14.06	12.46
20	8.96	9.01	.....	12.68	.....	14.70	14.15	12.82	.....	14.72	.....	12.32
21	8.98	9.19	.....	12.81	.....	13.58	14.20	13.66	14.64	14.79	.....	12.26
22	8.98	.....	.....	12.84	.....	13.54	14.37	13.62	14.66	14.69	.....	12.19
23	8.87	9.43	10.68	12.94	.....	13.97	14.74	.....	14.85	14.46	13.80	12.16
24	8.72	9.44	10.67	12.98	13.10	13.78	14.86	.....	14.88	.....	13.90	12.07
25	8.66	9.49	10.76	13.03	12.93	13.80	15.03	.....	14.76	.....	13.81	12.01
26	.....	.....	10.79	13.06	13.45	13.84	14.99	.....	14.70	14.04	.....	12.04
27	8.59	.....	10.61	13.08	13.68	13.84	14.99	.....	14.66	13.99	.....	12.12
28	8.79	.....	10.42	13.11	13.80	13.36	15.04	.....	14.63	13.85	.....	12.09
29	8.69		10.35	13.13	13.77	13.33	15.01	.....	14.68	13.70	.....	12.02
30	8.69		10.68	13.03	13.98	13.23	15.05	14.84	14.69	13.68	13.44	11.98
31	8.69		11.12		13.76		15.08	14.85		13.70		11.88

S20/60-2ddd1. Arthur E. Gray (State Engineer No. 553). Drilled unused artesian well, diameter 10 inches, depth 707 feet, 10-inch casing 0-92, 8-inch casing 0-700. Highest water level 59.58 below lsd, Apr. 21, 1947; lowest 83.68 below lsd, Aug. 25, 1954. Records available: 1947-54. Feb. 8, 79.12; May 3, 79.21; Aug. 25, 83.68.

S20/60-25adb1. Jones (State Engineer No. 602). Drilled irrigation and domestic artesian well, diameter 10 inches, depth 438 feet, 8-inch casing 0-318, 6-inch casing 318-430. Highest water level 25 below lsd, July 7, 1948; lowest 52.65 below lsd, Sept. 1, 1954. Records available: 1953-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	40.05	40.09	41.48	41.90	44.66	47.63	49.08	50.24	52.65	.....	48.80	47.32
2	40.36	39.92	41.64	42.00	44.90	47.76	49.18	50.01	51.22	.....	.....	47.36
3	40.02	40.20	41.42	41.70	45.26	48.00	50.76	50.68	49.87	.....	.....	47.01
4	40.32	40.30	41.56	42.42	46.00	47.79	48.90	50.66	49.99	.....	.....	47.00
5	40.16	40.40	41.50	42.90	45.60	47.56	48.50	51.10	50.10	50.74	.....	46.91
6	40.16	40.40	41.72	42.70	45.70	47.57	49.61	50.76	50.38	51.10	.....	.....
7	40.61	40.10	42.32	42.40	45.86	48.02	49.80	51.10	50.80	51.30	.....	48.44
8	40.09	40.50	41.90	42.72	45.80	48.16	49.74	50.44	51.10	50.76	.....	48.42
9	40.40	40.70	42.20	42.96	45.65	47.70	49.78	50.56	51.70	50.60	48.66	48.07
10	.....	40.60	41.46	42.80	45.80	47.76	49.90	50.82	51.36	50.68	48.68	48.25
11	.....	41.20	41.18	.....	.....	48.28	50.08	51.10	50.13	51.02	47.94	48.26
12	.....	40.40	41.10	44.08	.....	47.87	50.02	51.14	51.10	50.23	47.42	48.07
13	.....	40.65	.....	43.98	.....	48.44	49.89	51.50	51.30	51.21	47.75	.....
14	.....	49.90	.....	44.12	.....	48.19	49.84	50.40	51.60	51.04	47.54	46.32
15	40.38	40.58	41.50	44.20	.....	48.17	49.92	51.44	.....	50.98	47.58	46.32
16	39.90	40.22	41.80	44.10	.....	48.37	50.22	51.84	.....	51.00	47.56	46.59
17	39.73	40.68	41.26	44.12	46.76	48.30	50.19	51.90	.....	51.02	47.80	.....
18	40.28	40.42	42.10	43.96	47.80	49.10	49.87	52.10	.....	50.83	47.84	.....
19	39.69	40.90	42.00	44.44	47.17	48.74	50.88	51.68	.....	50.12	47.70	.....
20	39.90	40.30	41.40	44.70	47.12	49.54	51.32	52.00	.....	50.65	47.88	.....

S20/60-25adb1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	39.90	40.80	41.86	44.94	47.94	49.34	52.00	52.00	51.64	50.60	47.75	46.67
22	39.64	41.34	40.88	44.70	46.72	49.05	51.60	51.44	52.10	50.37	47.94	46.50
23	39.49	41.50	40.54	45.08	46.38	49.60	51.54	51.60	51.72	50.03	47.78	46.54
24	39.36	41.72	.....	44.84	46.64	49.48	51.50	.....	51.77	.....	47.72	46.38
25	39.40	42.00	.....	44.50	46.54	49.36	50.68	49.80	52.02	.....	47.60	46.32
26	39.88	41.38	.....	45.16	46.22	48.46	48.18	51.87	51.30	49.61	48.14	46.14
27	39.82	41.70	.....	45.06	46.72	48.32	49.00	52.06	51.60	49.76	48.10	46.40
28	39.76	41.18	.....	45.02	46.12	48.90	49.28	52.09	51.40	50.13	48.50	46.36
29	39.74		40.52	44.96	45.94	48.82	49.94	52.20	52.05	49.42	.....	46.26
30	.....		40.64	45.12	46.28	48.80	50.12	52.02	51.58	49.06	47.53	46.34
31	.....		41.46		47.66		50.42	52.52		49.22		46.28

S20/60-36dbb1. M. D. Kidder (State Engineer No. 18). Drilled artesian well, diameter 8 inches, depth 385 feet, 8-inch casing 9-262, 6-inch casing 262-345, 4-inch casing 345-381. Land-surface datum is 2,228 feet above msl. Highest water level 3.00 below lsd, summer 1925; lowest 70.60 below lsd, June 21, 1954. Records available: 1925, 1927, 1931-32, 1935-36, 1938-41, 1945-54.

Daily noon water level from recorder graph*

Day	Jan.	Feb.	Mar.	Apr.	May	June	July
1	60.48	60.13	61.46	61.90	65.04	68.24	70.02
2	60.52	60.27	61.44	62.24	65.50	68.40	70.10
3	60.49	60.12	61.66	62.04	65.80	68.48	70.29
4	60.42	60.21	61.76	62.02	66.20	68.60	69.55
5	60.44	60.26	61.86	62.50	66.34	68.56	69.27
6	60.43	60.40	61.84	62.94	66.40	68.34	69.82
7	60.40	60.36	61.74	62.90	66.50	68.78	70.17
8	60.38	60.48	62.04	63.02	66.30	68.78	70.34
9	60.50	60.40	61.84	63.30	66.14	68.44	70.56
10	60.37	60.41	61.50	63.30	.....	68.62	70.40
11	60.31	60.55	61.64	63.10	.....	68.90	70.20
12	60.12	60.41	61.41	63.70	.....	68.70	.....
13	60.23	60.25	61.54	64.10	.....	68.60	.....
14	60.33	60.13	61.72	64.40	.....	69.08	.....
15	60.43	60.40	61.92	64.50	.....	69.28	.....
16	60.29	60.32	62.16	64.58	.....	69.36	.....
17	60.13	60.44	61.78	64.40	.....	69.39	.....
18	60.21	60.48	62.00	64.10	67.78	69.70	.....
19	60.03	60.80	61.84	65.00	67.96	69.76	.....
20	59.97	60.64	61.76	65.26	67.90	70.31	.....
21	60.00	60.78	61.72	65.42	67.66	70.60	.....
22	59.83	61.20	61.50	64.98	67.36	70.43	.....
23	59.66	61.38	61.02	65.70	67.20	70.41	.....
24	59.63	61.40	60.60	65.34	67.68	70.36	.....
25	59.51	61.44	60.64	64.86	67.94	70.36	.....
26	59.84	61.30	60.62	65.70	67.64	69.15	.....
27	59.81	61.56	60.54	65.56	68.12	68.65	.....
28	59.70	61.28	60.46	65.64	68.02	69.60	.....
29	59.81		60.70	65.56	68.34	69.74	.....
30	59.72		60.98	65.70	67.80	69.82	.....
31	59.88		61.30		67.34		.....

* No record for August, September, October, November, and December.

S20/61-3acc1. Frank Allen (State Engineer No. 316). Drilled unused artesian well, diameter 8 inches, depth 300 feet. Highest water level 15.30 below lsd, Apr. 25, 1946; lowest 63.66 below lsd, Aug. 26, 1953. Records available: 1944-54. Feb. 14, 51.06; May 7, 54.74; Aug. 26, 63.29.

S20/61-5b1. M. Armstrong. Drilled irrigation and domestic well, diameter 10 inches, depth 267 feet. Highest water level 38.96 below lsd, Feb. 28, 1945; lowest 49.85 below lsd, Aug. 25, 1954. Records available: 1944-54. Feb. 14, 45.32; May 7, 45.78; Aug. 25, 49.85.

S20/61-16bdb1. J. R. Atwater (State Engineer No. 208). Drilled irrigation and domestic artesian well, diameter 8 inches, depth 386 feet. Highest water level 1.18 above lsd, Mar. 29, 1945; lowest 24.34 below lsd, Sept. 10, 1954. Records available: 1944-54. Feb. 14, 23.23; May 7, 23.77; Sept. 10, 24.34.

S20/61-19abd1. Splane Estate (State Engineer No. 5). Drilled domestic and irrigation well, diameter 10 inches, depth 260 feet. Land-surface datum is 2,175.5 feet above msl. Highest water level 24.8 above lsd, Jan. 18, 1942; lowest 18.69 below lsd, Aug. 25, 1954. Records available: 1939-54. Feb. 14, 6.82; May 3, 10.30; Aug. 25, 18.69.

S20/61-22cbc1. Jack Moore and C. E. Bell (State Engineer No. 461). Drilled unused artesian well, diameter 8 inches, depth 385 feet, cased to 75. Highest water level 3.92 below lsd, Apr. 28, 1945; lowest 20.07 below lsd, Aug. 26, 1953. Records available: 1944-54. Feb. 16, 9.10; May 4, 14.09; Sept. 10, 18.08.

S20/61-27cbc1. Clyde Caskey (State Engineer No. 336). Drilled unused well, diameter 6 inches, depth 283 feet. Highest water level 5.60 below lsd, Feb. 26, 1946; lowest 24.82 below lsd, Sept. 2, 1954. Records available: 1944-54. Feb. 5, 9.68; May 4, 14.49; Sept. 2, 24.82.

S20/61-28dac1. J. A. Haggard (State Engineer No. 199). Drilled domestic and irrigation well, diameter 6 inches, depth 805 feet. Land-surface datum is 2,044 feet above msl. Highest water level 57.3 above lsd, Jan. 18, 1942; lowest 6.73 above lsd, Sept. 28, 1953. Records available: 1940-54. Feb. 12, +19.6.

S20/61-28dac4. J. A. Haggard. Drilled unused artesian well, diameter 8 inches, reported depth 368 feet. Land-surface datum is 2,044 feet above msl. Highest water level 21.8 above lsd, Jan. 24, 1943, Jan. 17, 1944; lowest 2.6 above lsd, Sept. 28, 1953. Records available: 1940-54. Feb. 12, +16.6.

S20/61-29dbb1. John Papus (State Engineer No. 380). Drilled unused artesian well, diameter 8 to 6 inches, depth 475 feet, 8-inch casing to 400, 6-inch casing to 475. Land-surface datum is 2,094 feet above msl. Highest water level 36.8 above lsd, Jan. 28, 1946; lowest 12.6 above lsd, Aug. 23, 1954. Records available: 1943-54. Feb. 5, +27.4; May 4, +18.5; Aug. 23, +12.6.

S20/61-33ccd1. Clark County Hospital (State Engineer No. 202). Drilled unused artesian well, diameter 8 inches, depth 386 feet. Highest water level 30.3 above lsd, Feb. 20, 1950; lowest 5.55 above lsd, Sept. 2, 1954. Records available: 1950-54. Feb. 5, +26.7; May 4, +14.7; Sept. 2, +5.55.

S20/61-34adc1. S. W. Craner (State Engineer No. 47). Drilled domestic and irrigation artesian well, diameter 8 inches, depth 354 feet, cased to 178. Highest water level 41.4 above lsd, Dec. 21, 1940; lowest 16.2 above lsd, Aug. 21, 1944. Records available: 1939-54. Feb. 5, +25.8; May 5, +24.3.

S20/61-35ddc2. Estella Beam (State Engineer No. 368). Drilled unused artesian well, diameter 8 to 6 inches, depth 418 feet, 8-inch casing to 81, 6-inch casing to 310. Highest water level 38.4 above lsd, Feb. 16, 1951; lowest 11.7 above lsd, Sept. 18, 21, 1953. Records available: 1945-54.

Daily noon water level above lsd from recorder graph*

Day	Jan.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.8	....	....	20.9	19.1	21.4	24.3	27.2
2	24.6	....	....	20.6	19.1	21.5	24.3	27.3
3	24.9	....	....	19.6	19.2	21.5	24.5	27.3
4	24.8	....	22.5	19.5	19.3	21.8	24.8	27.4
5	24.8	....	20.9	19.3	19.8	22.2	25.0	27.5
6	24.8	....	21.3	19.3	....	22.3	25.3	....
7	24.8	....	21.4	19.3	19.5	22.3	25.3	28.2
8	24.8	....	21.3	19.4	20.1	22.4	25.3	28.4
9	24.8	....	20.7	19.4	20.2	22.5	25.2	28.8
10	24.8	....	20.6	19.4	20.3	22.5	25.5	28.8
11	24.8	....	....	19.5	20.3	....	25.5	28.9
12	24.7	....	20.2	19.5	20.4	23.3	25.8	29.2
13	24.8	....	20.1	19.5	....	21.8	26.0	29.3
14	24.8	....	19.9	19.5	19.8	21.8	26.3	29.5
15	24.8	....	19.7	19.5	....	21.5	26.3	29.5
16	25.0	23.8	19.5	19.5	....	21.8	26.4	29.6
17	24.8	....	19.8	19.2	....	21.9	26.4	29.5
18	24.9	....	....	19.2	19.4	22.0	26.8	29.7
19	24.8	....	20.7	19.3	19.4	21.9	26.9	29.6
20	24.9	....	20.5	19.3	....	22.5	27.0	....
21	24.8	23.4	20.3	19.2	20.3	22.5	27.1	30.0
22	24.9	....	20.2	19.3	20.8	22.6	27.1	29.9
23	24.8	....	20.0	19.2	20.9	22.7	27.2	30.0
24	24.8	....	20.2	....	20.9	23.3	27.3	30.0
25	24.8	....	....	19.4	20.8	23.3	27.5	30.1
26	....	....	....	19.3	20.8	22.8	27.4	30.1
27	....	....	20.6	18.5	21.3	23.3	27.6	30.3
28	....	22.5	21.0	18.4	21.2	23.5	27.6	29.9
29	....	....	21.2	19.1	21.3	23.8	27.5	30.2
30	....	....	21.1	19.1	21.3	23.2	27.3	30.0
31	....		20.6	....		24.3		....

* No record for February, March, April, and May.

S20/61-36bbb1. A. C. Delkin (State Engineer No. 393). Drilled domestic and irrigation well, diameter 8 inches, depth 325 feet, cased to 300. Highest water level 37.3 above lsd, Jan. 26, 1945; lowest 6.4 above lsd, Aug. 27, 1952. Records available: 1944-54. Feb. 5, +19.7; May 5, +13.8; Sept. 9, +8.4.

S20/62-33ccc1. U. S. Geol. Survey. Drilled test and observation water-table well, diameter 1 inch, depth 42 feet, cased to 42. Highest water level 14.42 below lsd, Feb. 4, 1954; lowest 25.32 below lsd, Dec. 28, 1945. Records available: 1945-54. Feb. 4, 14.42; May 4, 14.51; Sept. 9, 16.43.

S21/61-3abb2. W. S. Park (State Engineer No. 238). Drilled domestic and irrigation artesian well, diameter 4 inches, depth 807 feet. Highest water level 40.4 above lsd, Mar. 6, 1944; lowest 4.8 above lsd, Aug. 21, 1953. Records available: 1944-54. Feb. 4, +22.8; May 4, +15.1; Sept. 10, +9.8.

S21/61-4aad1. Opaco Lumber Co. (State Engineer No. 386). Drilled unused artesian well, diameter 10 inches, depth 793 feet, cased to 770, perforations 338-438, 642-770. Highest water level 46.5 above lsd, Feb. 19, 1948, Feb. 21, 1952; lowest 11.2 above lsd, Sept. 2, 1954. Records available: 1944-54. Feb. 5, +38.5; Apr. 6, +26.4; Sept. 2, +11.2.

S21/61-7acc2. Kimball & Williams (State Engineer No. 155). Drilled domestic and irrigation artesian well, diameter 6 inches, depth 355 feet. Land-surface datum is 2,179.4 feet above msl. Highest water level 20.6 above lsd, Jan. 24, 1943; lowest 19.97 below lsd, Sept. 2, 1954. Records available: 1940-54. Feb. 5, 12.39; May 6, 16.03; Sept. 2, 19.97.

S21/61-15bbb1. T. T. Schofield. Dug domestic and irrigation water-table well, diameter 5 feet, depth 9 feet. Highest water level 3.00 below lsd, Feb. 12, 1953; lowest 6.11 below lsd, Aug. 27, 1954. Records available: 1945-54. Feb. 10, 3.17; Aug. 27, 6.11.

S21/61-21bbb1. Moe Sedway (State Engineer No. 123). Drilled domestic and irrigation artesian well, diameter 6 inches, depth 850 feet, cased to 600. Highest water level 61.1 above lsd, Dec. 20, 1942; lowest 3.57 below lsd, Sept. 8, 1954. Records available: 1940-54. Jan. 18, +2.65; Feb. 15, +2.70; Mar. 15, +1.83; May 19, -2.09; Sept. 8, -3.57.

S21/61-21dcd1. W. N. Connell. Dug unused water-table well, diameter 5 feet, depth 24 feet. Highest water level 19.00 below lsd, Mar. 9, 1945; lowest dry at 21.75, June 19, 1953. Records available: 1944-53. No measurement made in 1954.

S21/61-22ccc1. A. P. Baker (State Engineer No. 117). Drilled unused artesian well, diameter 6 inches, depth 500 feet. Land-surface datum is 2,070.8 feet above msl. Highest water level 35.7 above lsd, Dec. 20, 1942; lowest 5.93 below lsd, Aug. 27, 1954. Records available: 1940-54. Feb. 5, +11.1; May 19, +3.7; Aug. 27, -5.93.

S21/61-29dda1. F. M. Ferguson (State Engineer No. 93). Drilled unused artesian well, diameter 6 inches, depth 260 feet. Highest water level 2.75 above lsd, Feb. 24, 1945; lowest 12.63 below lsd, Aug. 23, 1954. Records available: 1944-46, 1950-54. Feb. 6, 8.94; May 5, 10.42; May 19, 10.89; Aug. 27, 12.63.

S21/61-33bac1. Clark County Airport (State Engineer No. 39). Drilled unused artesian well, diameter 6 inches, depth 222 feet. Land-surface datum is 2,189.8 feet above msl. Highest water level 2.80 above lsd, Feb. 18, 1939; lowest 12.67 below lsd, Aug. 25, 1954. Records available: 1938-54. Feb. 6, 8.31; May 7, 11.91; May 19, 11.66; Aug. 25, 12.67.

S21/61-34dcc1. Fred Nagamatsu (State Engineer No. 74). Drilled unused well, diameter 6 inches. Highest water level 3.69 below lsd, Feb. 28, 1945; lowest 14.63 below lsd, Aug. 26, 1953. Records available: 1944-53. Measurement discontinued.

S21/61-36adc2. U. S. Geol. Survey. Drilled test and observation water-table well, diameter $1\frac{1}{2}$ inches, depth 20 feet. Highest water level 9.79 below lsd, May 6, 1949; lowest 14.00 below lsd, Sept. 11, 1954. Records available: 1946-54. Feb. 6, 12.02; May 6, 11.71; May 19, 11.74; Sept. 11, 14.00.

S21/62-7bac2. S. Barbee (State Engineer No. 286). Drilled domestic and irrigation artesian well, diameter 8 inches, depth 225 feet. Highest water level 4.20 above lsd, Feb. 26, 1949 lowest 8.13 below lsd, Aug. 26, 1954. Records available: 1945-54. Aug. 26, 8.13.

S21/62-21cbc2. L. E. Billman (State Engineer No. 430). Drilled unused artesian well, diameter 8 inches, depth 500 feet. Highest water level 61.2 above lsd, Dec. 22, 1944; lowest 4.15 above lsd, Aug. 26, 1954. Records available: 1944-54. Feb. 12, +32.6; May 19, +21.3; Aug. 26, +4.15.

S21/62-27aad1. U. S. Geol. Survey. Drilled test and observation water-table well, diameter 3 inches, depth 12 feet. Highest water level 4.14 below lsd, May 13, 1952, May 5, 1954; lowest 5.05 below lsd, Aug. 19, 1947. Records available: 1945-54. Feb. 11, 4.14; May 5, 4.15.

S21/62-29ccc1. J. R. Bond (State Engineer No. 134). Drilled domestic and irrigation artesian well, diameter 6 inches, depth 404 feet. Highest water level 19.8 above lsd, May 7, 1954; lowest 2.70 above lsd, Aug. 15, 1947. Records available: 1944-54. Feb. 11, +19.7; May 7, +19.8; May 19, +19.4; Sept. 11, +12.3.

S22/61-4bcc1. Fitzpatrick (State Engineer No. 41). Drilled unused well, diameter 8 inches, depth 355 feet. Highest water level 74.4 below lsd, Jan. 25, 1939; lowest 89.83 below lsd, Sept. 23, 1953. Records available: 1938-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	85.34	85.55	86.87	87.11	87.85	88.82	88.96	89.02	89.30	88.97	88.60	88.20
2	85.38	85.65	87.09	87.11	87.97	88.90	89.05	89.01	89.28	89.26	88.63	88.14
3	85.44	85.60	87.16	87.06	87.86	88.81	89.01	89.12	88.87	89.07	88.62	88.04
4	85.46	85.60	87.27	87.02	87.91	88.82	88.98	89.14	88.63	89.13	88.64	88.02
5	85.42	85.65	87.39	86.96	87.98	89.00	89.00	89.10	88.51	89.06	88.62	87.89
6	85.35	85.73	87.39	86.91	87.97	89.16	89.10	89.13	88.48	88.89	88.54	87.73
7	85.29	85.81	87.46	86.97	87.91	88.70	89.13	89.16	88.42	88.86	88.40	87.74
8	85.37	85.74	87.48	86.92	87.90	88.72	89.04	89.22	88.44	88.88	88.52	87.76
9	85.48	85.66	87.34	87.01	88.10	88.72	88.97	89.32	88.46	88.78	88.55	87.62
10	85.41	85.79	86.97	87.04	88.10	88.78	89.13	89.29	88.63	88.78	88.36	87.50
11	85.35	85.88	86.90	87.18	88.10	88.68	89.26	89.20	88.70	88.72	88.20	87.65
12	85.35	86.07	.....	87.32	88.15	88.59	89.33	89.29	88.73	88.54	88.05	87.78
13	85.42	86.03	.....	87.42	88.26	88.68	89.32	89.27	88.78	88.56	88.00	87.74
14	85.47	85.99	.....	87.45	88.33	88.73	89.24	89.20	88.70	88.79	88.26	87.62
15	85.51	86.00	86.71	87.59	88.36	88.73	89.30	89.18	88.67	88.76	88.32	87.60
16	85.45	85.99	86.76	87.68	88.41	88.78	89.20	89.14	88.66	88.73	88.42	88.00
17	85.35	86.07	87.03	87.72	88.50	88.85	89.03	89.14	88.80	88.74	88.53	88.00
18	85.39	86.12	87.03	87.61	88.42	88.82	89.02	89.23	88.79	88.68	88.12	88.00
19	85.30	86.10	87.00	87.67	88.54	88.86	89.02	89.11	88.67	88.68	87.92	87.96
20	85.40	86.12	87.06	87.74	88.50	88.88	89.26	89.06	88.80	89.04	87.80	87.88
21	85.55	86.13	87.05	87.86	88.48	88.90	89.12	89.12	88.87	89.13	87.87	87.93
22	85.47	86.18	87.00	87.88	88.60	88.83	89.14	89.21	88.88	89.10	88.04	87.94
23	85.37	86.29	87.00	87.98	88.60	88.88	89.18	89.33	88.92	88.92	88.99	87.93
24	85.60	86.30	86.91	87.98	88.43	89.00	89.18	89.32	88.99	88.93	88.08	87.92
25	85.48	86.58	86.87	88.01	88.40	88.90	89.24	89.24	89.01	88.73	87.99	87.88
26	85.60	86.67	86.86	88.11	88.56	88.98	88.22	89.14	88.98	88.70	87.98	87.88
27	85.61	86.92	87.03	88.05	88.60	88.90	88.90	89.58	88.92	88.90	87.87	87.88
28	85.57	86.88	86.76	88.03	88.58	88.90	88.94	89.41	88.87	88.94	87.91	87.78
29	85.51		86.66	87.85	88.46	88.95	88.98	89.32	88.90	89.00	87.88	87.61
30	85.60		86.69	87.60	88.54	88.90	89.04	89.26	88.98	89.01	88.19	87.60
31	85.54		86.83		88.70		89.08	89.33		88.81		87.50

S22/61-9cbb1. Daisy Bell (State Engineer No. 42). Drilled unused water-table well, diameter 10 inches, depth 127 feet. Highest water level 92.62 below lsd, Jan. 24, 1945; lowest 100.56 below lsd, Aug. 27, 1954. Records available: 1944-54. Feb. 6, 99.81; May 5, 100.1; May 19, 100.1; Aug. 27, 100.56.

S22/61-16ccc1. Dalton Buck. Drilled unused well, diameter 10 inches. Highest water level 83.63 below lsd, Sept. 22, 1954; lowest 90.13 below lsd, Aug. 27, 1954. Records available: 1944-54. Feb. 6, 89.22; May 5, 89.41; May 19, 89.45; Aug. 27, 90.13.

Pahrump Valley
[See also Nye County]

S21/54-10aac1. Bowman (State Engineer No. 22). Drilled unused well, diameter 14 inches, depth 800 feet, cased to 472, perforations 100-450. Highest water level 25.99 below lsd, Jan. 5, 1945; lowest 40.69 below lsd, Aug. 28, 1954. Records available: 1944-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	35.44	34.72	35.93	.....	38.99	39.55	40.00	40.42	.....	38.99	.....	37.69
2	35.60	34.73	36.13	.....	38.94	39.60	.....	40.42	.....	39.04	.....	.....
3	35.58	34.89	36.15	.....	38.40	39.58	.....	40.41	.....	39.12	39.41	.....
4	.....	35.10	36.24	.....	.....	.....	.....	40.19	.....	39.11	39.48	37.83
5	.....	35.12	36.50	39.30	.....	.....	40.15	40.53	.....	.....	39.36	37.76

S21/54-10aac1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	.....	35.00	36.53	39.32	.....	.....	40.10	.....	.....	.....	39.10	37.64
7	.....	35.25	36.63	39.38	.....	39.97	40.07	.....	.....	.....	38.60	37.61
8	.....	35.16	36.80	39.35	.....	39.91	40.12	.....	.....	.....	38.72	37.63
9	36.13	35.04	37.01	39.33	.....	39.71	40.13	.....	.....	.....	38.80	37.39
10	35.98	35.10	36.94	39.41	.....	40.05	40.15	40.49	.....	40.19	.....	37.52
11	35.44	34.39	36.23	39.49	39.10	39.34	40.21	40.60	40.50	39.70	.....	.....
12	35.17	35.57	35.94	38.51	38.87	39.50	40.32	40.61	40.34	39.93	.....	.....
13	35.48	35.57	36.45	39.10	38.87	39.72	40.31	40.56	39.91	40.33	.....	.....
14	35.52	35.35	36.47	38.90	39.04	.....	40.30	40.46	39.48	40.55	.....	.....
15	35.53	35.44	36.69	39.07	38.62	.....	40.29	40.47	39.80	40.47	.....	.....
16	.....	35.33	.....	39.11	.....	.....	40.30	40.00	39.41	40.39	.....	.....
17	.....	35.23	.....	38.80	.....	.....	40.34	.....	39.42	40.60	.....	.....
18	35.45	35.32	.....	38.85	.....	.....	40.31	.....	.....	.....	.....	.....
19	35.50	35.44	.....	38.90	.....	.....	.....	.....	39.48	.....	.....	.....
20	35.52	35.88	.....	38.97	.....	.....	.....	.....	39.52	.....	.....	.....
21	35.35	35.88	38.35	38.92	.....	39.93	.....	.....	39.41	.....	.....	.....
22	35.06	36.01	38.32	38.90	.....	39.80	.....	.....	39.33	39.82	.....	.....
23	34.90	36.02	38.27	38.91	.....	39.75	.....	40.25	39.27	39.64	.....	.....
24	34.82	35.85	38.59	38.90	.....	39.62	.....	40.38	39.35	39.60	.....	.....
25	.....	35.94	38.82	38.84	.....	39.66	.....	40.18	.....	39.56	37.69	.....
26	.....	35.83	38.96	38.87	.....	39.75	.....	40.46	.....	39.50	37.71	36.62
27	.....	36.15	38.81	38.84	.....	39.74	.....	40.58	39.13	39.41	37.59	36.72
28	.....	36.02	.....	38.80	39.20	39.50	.....	40.69	39.01	39.68	37.48	36.63
29	.....		.....	38.82	39.45	39.28	40.22	40.63	39.07	39.71	37.36	36.37
30	.....		.....	38.60	39.63	39.25	40.42	.....	38.93	.....	37.70	36.88
31	.....		.....		39.62		40.43	.....		.....		36.76

Douglas County

Carson Valley

12/20-17ba1. John Helwinkel, Jr. Drilled irrigation water-table well in alluvium of Quaternary age, diameter 18 inches, depth 365 feet. Highest water level 8.82 below lsd, July 9, 1949; lowest 19.47 below lsd, Mar. 30, 1950. Records available: 1948-54. Apr. 3, 19.39; Sept. 27, 18.17.

13/20-8ca1. C. W. Godecke. Drilled irrigation well, diameter 18 to 12 inches, depth 300 feet. Highest water level 0.35 below lsd, Mar. 30, 1950; lowest 6.36 below lsd, Sept. 27, 1954. Records available: 1942, 1948-52, 1954. Apr. 3, 0.74; Sept. 27, 6.36.

13/20-29aab1. H. F. Dangberg Co. Drilled irrigation artesian well, diameter 12 inches, reported depth 320 feet, reported plugged at 125. Highest water level 0.10 above lsd, May 11, 1948; lowest 4.04 below lsd, Aug. 15, 1950. Records available: 1948-54. Apr. 4, 2.73; Sept. 27, 2.24.

13/20-31bd1. H. Dangberg. Drilled irrigation water-table well in alluvium of Quaternary age, diameter 16 inches, depth 413 feet, cased to 400, perforations 60-400. Highest water level 2.12 below lsd, Dec. 19, 1950, Sept. 18, 1952; lowest 7.52 below lsd, Aug. 15, 1950. Records available: 1950-54. Apr. 3, 3.23; Sept. 27, 3.56.

13/20-32dc1. Mack Land & Cattle Co. Drilled irrigation water-table well in alluvium of Quaternary age, diameter 18 inches, reported depth 420 feet. Highest water level 7.83 below lsd, May 24, 1950; lowest 11.47 below lsd, Sept. 27, 1954. Records available: 1948-54. Apr. 3, 10.68; Sept. 27, 11.47.

14/19-25ba1. Carson Indian Agency. Drilled irrigation water-table well in alluvium of Quaternary age, diameter 12 inches, depth 239 feet. Highest water level 10.82 below lsd, Apr. 2, 1951; lowest 20.09 below lsd, Aug. 3, 1948. Records available: 1946, 1948-54. Apr. 4, 13.03.

Elko County

Clover Valley

34/63-21a1. Leslie Davis. Dug unused water-table well, diameter 9 feet, cribbed with concrete. Highest water level 12.06 below lsd, Sept. 15, 1954; lowest 12.58 below lsd, Aug. 25, 1948, Mar. 27, 1951. Records available: 1948-54. Sept. 15, 12.06.

35/62-26b1. Lloyd Higley. Dug irrigation water-table well, size 6 by 7 feet, reported depth 10 feet, cribbed with wood. Highest water level 4.98 below lsd, Mar. 27, 1951; lowest 7.89 below lsd, Sept. 14, 1949. Records available: 1948-54. Sept. 15, 7.83.

35/62-27b1. U. S. Geol. Survey. Drilled test and observation well, diameter 6 inches, depth 286 feet, cased to 197. Highest water level 6.65 below lsd, Mar. 27, 1951; lowest 9.78 below lsd, Dec. 21, 1949, Oct. 28, 1954. Records available: 1949-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	8.68	Mar. 29	8.63	Aug. 4	8.82	Oct. 28	9.78
Feb. 1	8.87	June 12	8.68	25	9.51	Dec. 1	9.76
Mar. 1	8.77	July 7	9.08	Sept. 15	9.17	24	9.68

35/62-27b2. U. S. Geol. Survey. Adjacent to well 35/62-27b1. Drilled observation water-table well, diameter 1 inch, depth 15 feet. Highest water level 7.10 below lsd, Sept. 29, 1952; lowest 10.38 below lsd, June 30, 1953. Records available: 1949-54.

Jan. 8	8.90	Mar. 29	8.29	Aug. 4	8.85	Oct. 28	9.25
Feb. 1	8.37	June 12	10.26	25	7.97	Dec. 1	9.45
Mar. 1	8.37	July 7	8.58	Sept. 15	9.07	24	10.24

Goshute-Antelope Valley

34/67-6a2. Western Pacific RR. Co. Shafter. Drilled industrial water-table well, diameter 16 inches, reported depth 250 feet. Highest water level 26.85 below lsd, Mar. 27, 1951; lowest 30.51 below lsd, Mar. 28, 1949. Records available: 1948-54. Sept. 16, 27.76.

34/67-16d1. Utah Construction Land and Cattle Co. Dug stock water-table well, depth 58 feet. Highest water level 42.75 below lsd, Sept. 30, 1952; lowest 44.07 below lsd, June 25, 1948. Records available: 1948-50, 1952. Measurement discontinued.

Humboldt River Valley

[See also Humboldt, Lander, and Pershing Counties]

33/52-27d1. Carlin Town Government. Drilled unused water-table well, diameter 20 inches, depth 500 feet, cased to 125. Highest water level 2.77 below lsd, Feb. 20, 1951; lowest 8.75 below lsd, Oct. 28, 1947. Records available: 1938-54.

Jan. 20	7.90	Apr. 17	6.26	July 20	6.65	Oct. 22	7.29
Feb. 25	7.45	May 18	6.29	Aug. 23	6.95	Nov. 22	7.79
Mar. 20	7.22	June 20	6.15	Sept. 23	7.09	Dec. 18	5.89

33/53-20d2. C. E. Lee. Dug domestic water-table well, diameter 24 inches, depth 18 feet. Replaces 33/53-20d1, which was destroyed January 1951. Highest water level 10.60 below lsd, June 28, 1951; lowest 15.30 below lsd, Sept. 28, 1954. Records available: 1951-54.

Jan. 28	13.10	Apr. 28	10.70	July 31	14.40	Oct. 28	14.50
Feb. 26	13.40	May 28	13.50	Aug. 30	14.60	Nov. 28	14.30
Mar. 28	13.20	June 28	13.80	Sept. 28	15.30	Dec. 28	14.70

35/56-1b1. Moffat. Dug stock water-table well in alluvium of Quaternary age, diameter 36 inches, depth 10 feet. Highest water level 1.20 below lsd, July 1, 1944; lowest 7.80 below lsd, Jan. 28, 1948. Records available: 1944-54.

Jan. 28	5.10	Apr. 28	4.60	July 31	6.10	Oct. 28	5.00
Feb. 26	4.90	May 28	4.50	Aug. 30	6.10	Nov. 28	6.10
Mar. 28	4.40	June 28	5.60	Sept. 28	6.15	Dec. 28	5.80

35/56-30c1. Fernald. Dug unused water-table well, depth 20 feet. Highest water level 5.20 below lsd, May 28, 1950; lowest 17.00 below lsd, Sept. 28, 1954. Records available: 1938-54.

Jan. 28	12.70	Apr. 28	14.40	July 31	16.70	Oct. 28	15.70
Feb. 26	13.00	May 28	14.70	Aug. 30	16.20	Nov. 28	14.00
Mar. 28	13.30	June 28	12.80	Sept. 28	17.00	Dec. 28	16.00

37/59-26a1. Deeth. Dug unused water-table well, diameter 4 feet, depth 14 feet. Highest water level 2.90 below lsd, May 28, 1952; lowest 10.30 below lsd, Dec. 28, 1953. Records available: 1938-54.

Jan. 28	10.20	Apr. 28	6.60	July 31	8.60	Oct. 28	9.70
Feb. 26	8.20	May 28	5.30	Aug. 30	8.75	Nov. 28	9.90
Mar. 28	7.30	June 28	5.60	Sept. 28	9.40	Dec. 28	9.90

Lamoille Valley

33/56-8d1. Moffat. Ten Mile Well. Dug domestic water-table well, diameter 42 inches, reported depth 12 feet, cribbed with concrete. Highest water level 4.40 below lsd, May 28, 1945; lowest 10.60 below lsd,Sept. 28, 1953. Records available: 1944-54.

33/56-8d1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	8.10	Apr. 28	8.20	July 31	7.90	Oct. 28	9.10
Feb. 26	7.40	May 28	7.90	Aug. 30	10.30	Nov. 28	7.80
Mar. 28	7.40	June 28	5.80	Sept. 28	9.30	Dec. 28	8.40

33/57-22d1. Sutacha. Drilled unused water-table well, diameter 18 inches, depth 60 feet. Highest water level 33.40 below lsd, May 28, 1954; lowest 44.00 below lsd, May 28, 1951. Records available: 1948-54.

Jan. 28	39.00	Apr. 28	36.20	July 31	40.20	Oct. 28	40.60
Feb. 26	39.40	May 28	33.40	Aug. 30	38.40	Nov. 28	40.75
Mar. 28	39.50	June 28	40.10	Sept. 28	40.70	Dec. 28	38.70

33/58-5a1. George Ogilvie. Dug domestic water-table well, diameter 24 inches, depth 10 feet. Highest water level 1.00 below lsd, July 1, 1942; lowest 9.70 below lsd, Jan. 15, 1942. Records available: 1934-54.

Jan. 28	5.90	Apr. 28	5.90	July 31	7.50	Oct. 28	5.80
Feb. 26	5.00	May 28	2.40	Aug. 30	7.50	Nov. 28	6.00
Mar. 28	4.80	June 28	3.10	Sept. 28	7.50	Dec. 28	5.90

33/58-7a1. No. 2 Lytton Lane. Drilled unused water-table well, diameter 3 inches, depth 8 feet. Highest water level flowing, June 1, 1935; lowest dry, Aug. 28, 1952, Sept. 28, 1953. Records available: 1934-54. Jan. 28, 3.60; Feb. 26, 4.00; Mar. 28, 3.30; Apr. 28, 4.10; May 28, 3.70; June 28, 3.80.

33/58-18c1. John Patterson. Dug unused water-table well, diameter 5 feet, depth 13 feet. Highest water level 0.90 below lsd, Aug. 28, 1953; lowest 12.5 below lsd, Mar. 1, 1935. Records available: 1934-54.

Jan. 28	6.10	Apr. 28	4.90	July 31	3.90	Oct. 28	4.40
Feb. 26	8.60	May 28	3.70	Aug. 30	3.80	Nov. 28	4.40
Mar. 28	6.00	June 28	3.60	Sept. 28	4.00	Dec. 28	4.60

33/58-19ad1. H. Conrad. Known as Lamoille Church. Dug domestic water-table well, diameter 4 feet, depth 16 feet. Highest water level 0.60 below lsd, July 1, 1936; lowest 15.10 below lsd, Dec. 15, 1940. Records available: 1934-54.

Jan. 28	11.60	Apr. 28	11.20	July 31	7.40	Oct. 28	12.10
Feb. 26	12.25	May 28	2.30	Aug. 30	10.70	Nov. 28	12.20
Mar. 28	10.70	June 28	2.30	Sept. 28	10.80	Dec. 28	13.90

33/58-30a1. Joe Sutacha. Known as Charles well. Dug unused water-table well, diameter 42 inches, depth 24 feet. Highest water level 1.50 below lsd, Apr. 28, 1947; lowest 26.0 below lsd, Feb. 1, 1941. Records available: 1934-54.

Jan. 28	19.10	Apr. 28	8.70	July 31	9.90	Oct. 28	19.00
Feb. 26	21.30	May 28	4.00	Aug. 30	17.40	Nov. 28	19.50
Mar. 28	22.45	June 28	4.10	Sept. 28	4.50	Dec. 28	23.30

34/57-18a1. U. S. Bureau of Land Management. Known as Dry Lake well. Drilled stock water-table well, reported depth 148 feet. Highest water level 38.15 below lsd, Mar. 29, 1945; lowest 64.40 below lsd, July 28, 1952. Records available: 1944-54.

Jan. 28	46.50	Apr. 28	44.30	Aug. 30	45.50	Nov. 28	43.10
Feb. 26	47.30	May 28	49.80	Sept. 28	45.80	Dec. 28	43.30
Mar. 28	43.00	July 31	57.30	Oct. 28	42.90		

Ruby Valley

28/59-9c1. Owner unknown. Dug stock water-table well, size 4 by 4 feet, depth 44 feet. Highest water level 37.18 below lsd, Sept. 29, 1952; lowest 38.63 below lsd, June 10, 1949. Records available: 1948-49, 1951-52. Measurement discontinued.

31/60-4a1. Owner unknown. Drilled stock water-table well, diameter 8 inches, depth 20 feet. Highest water level 2.96 below lsd, June 14, 1950; lowest 8.66 below lsd, Sept. 15, 1954. Records available: 1948-54. Sept. 15, 8.66.

31/60-16c1. Owner unknown. Drilled stock water-table well, diameter 8 inches, depth 35 feet. Highest water level 4.98 below lsd, June 14, 1950; lowest 12.07 below lsd, Sept. 15, 1954. Records available: 1948-54. Sept. 15, 12.07.

32/60-29c1. U. S. Geol. Survey. Drilled test and observation well, diameter 6 inches, depth 202 feet, cased to 137. Highest water level 1.38 below lsd, Mar. 28, 1951; lowest 4.81 below lsd, Sept. 15, 1954. Records available: 1949-54. Sept. 15, 4.81.

32/60-29c2. U. S. Geol. Survey. Driven observation water-table well, diameter 1½ inches, depth 15 feet, cased to 15. Highest water level 3.65 below lsd, Mar. 28, 1951; lowest 7.17 below lsd, Sept. 15, 1954. Records available: 1949-54. Sept. 15, 7.17.

33/60-35d1. Owner unknown. Dug stock water-table well, diameter 14 inches, cased with oil drums. Highest water level 4.80 below lsd, June 10, 1949; lowest 8.86 below lsd, Sept. 15, 1954. Records available: 1948-54. Sept. 15, 8.86.

Esmeralda County

Fish Lake Valley

S1/35-21a1. Rex B. Clark. Drilled stock water-table well, diameter 13 inches. Highest water level 13.12 below lsd, Mar. 21, 1950; lowest 14.32 below lsd, Sept. 8, 1952. Records available: 1949-54. Mar. 15, 13.75.

S1/35-28a1. Rex B. Clark. Drilled stock water-table well, diameter 16 inches, depth 624 feet, cased to 600, perforations 150-600. Highest water level 25.45 below lsd, Jan. 21, 1948; lowest 30.35 below lsd, Sept. 8, 1952. Records available: 1945-54. Mar. 15, 29.01; Sept. 28, 29.88.

S2/35-15c1. O. Z.D. Davis. Drilled domestic water-table well, diameter 6 inches, depth 50 feet. Highest water level 44.57 below lsd, Nov. 11, 1949; lowest 46.26 below lsd, Mar. 19, 1953. Records available: 1949-54. Mar. 15, 45.55; Sept. 28, 46.04.

S2/35-28d1. E. L. Cord. Cord No. 3. Drilled irrigation water-table well, diameter 12 inches, reported depth 110 feet. Highest water level 46.2 below lsd, July 20, 1945; lowest 60.10 below lsd, Sept. 28, 1954. Records available: 1945, 1949-50, 1952-54. Sept. 28, 60.10.

S2/35-33a1. E. L. Cord. Cord No. 1. Drilled irrigation water-table well, diameter 12 inches, depth 120 feet. Highest water level 51.91 below lsd, Dec. 13, 1946; lowest 62.47 below lsd, Nov. 30, 1949. Records available: 1946-47, 1949. No measurement made in 1954.

S2/35-33a9. E. L. Cord. Cord No. 13. Drilled irrigation water-table well, diameter 14 to 8 inches, depth 1,010 feet, cased to 800, perforations 150-800, casing reported collapsed at 355. Highest water level 50.07 below lsd, Mar. 27, 1952; lowest 53.65 below lsd, Mar. 22, 1950. Records available: 1950, 1952. Measurement discontinued.

S2/35-34b2. E. L. Cord. Cord No. 5. Drilled irrigation water-table well, diameter 12 inches, reported depth 100 feet. Highest water level 11.33 below lsd, Dec. 15, 1945; lowest 19.15 below lsd, Nov. 9, 1949. Records available: 1942, 1944-47, 1949. Measurement discontinued.

S3/35-3b2. F. J. Willeman. Drilled domestic and irrigation water-table well, reported depth 720 feet. Highest water level 22.05 below lsd, Oct. 11, 1949; lowest 24.47 below lsd, Mar. 15, 1954. Records available: 1949-54. Mar. 15, 24.47; Sept. 28, 24.22.

S3/35-4a2. Sigurd Folwick. Drilled unused water-table well, diameter 14 to 8 inches, reported depth 124 feet, cased to 124, perforations 70-124. Highest water level 46.51 below lsd, Nov. 10, 1949; lowest 49.31 below lsd, Sept. 28, 1954. Records available: 1949-54. Mar. 15, 48.28; Sept. 28, 49.31.

S3/35-4a3. Sigurd Folwick. Drilled unused water-table well, diameter 13 inches, depth 76 feet. Highest water level 45.46 below lsd, Mar. 16, 1951; lowest 48.68 below lsd, Sept. 28, 1954. Records available: 1949-54. Mar. 15, 47.77; Sept. 28, 48.68.

S3/35-4d3. Sigurd Folwick. Drilled irrigation water-table well, diameter 14 inches, reported depth 132 feet, perforations 70-132. Highest water level 44.95 below lsd, Mar. 22, 1950; lowest 47.62 below lsd, Sept. 28, 1954. Records available: 1950-54. Mar. 15, 46.72; Sept. 28, 47.62.

S3/35-14c1. C. Parkinson. Drilled irrigation water-table well, diameter 12 inches, reported depth 79 feet. Highest water level 22.24 below lsd, Nov. 29, 1949; lowest 23.60 below lsd, Mar. 27, 1952. Records available: 1949-52. Measurement discontinued.

S3/35-14c2. C. Parkinson. Drilled irrigation water-table well, diameter 12 inches. Highest water level 23.26 below lsd, Sept. 14, 1953; lowest 30.45 below lsd, Sept. 10, 1951. Records available: 1950-53. No measurement made in 1954.

S3/35-14c4. U. S. Bureau of Land Management. Drilled unused water-table well, diameter 12 inches. Highest water level 38.60 below lsd, Jan. 21, 1948; lowest 41.60 below lsd, Sept. 10, 1951. Records available: 1945, 1947-54. Sept. 28, 41.27.

S3/35-25b1. Bar 99 Ranch. Drilled irrigation water-table well, diameter 14 inches, reported depth 123 feet. Highest water level 3.30 below lsd, Mar. 21, 1950; lowest 11.46 below lsd, Sept. 10, 1951. Records available: 1949-54. Sept. 28, 6.60.

S3/35-26a3. Bar 99 Ranch. Drilled unused water-table well, diameter 12 inches, reported depth 125 feet. Highest water level 11.15 below lsd, Jan. 21, 1948; lowest 17.20 below lsd, Aug. 21, 1948. Records available: 1946-54. Sept. 28, 14.40.

Tonopah and Vicinity

3/40-2c1. Millers Mill. Dug unused water-table well, size 8 by 5 feet, depth 61 feet, cribbed with wood. Highest water level 39.11 below lsd, Sept. 8, 1952; lowest 39.33 below lsd, Sept. 19, 1950. Records available: 1948-54. Sept. 10, 39.29.

Eureka County

Antelope Valley

16/51-7d1. Bartholemae Corp. Dug stock water-table well, diameter 6 feet, depth 29 feet. Highest water level 24.86 below lsd, Oct. 1, 1952; lowest 25.54 below lsd, Sept. 19, 1950. Records available: 1949-52. No measurement made in 1954.

18/51-34d1. Bartholemae Corp. Drilled stock water-table well, diameter 6 inches, depth 134 feet. Highest water level 93.96 below lsd, Oct. 1, 1952; lowest 94.09 below lsd, June 19, 1950. Records available: 1949-53. No measurement made in 1954.

Crescent Valley

29/48-3d1. U. S. Geol. Survey. Drilled observation water-table well, diameter 4 inches, depth 8 feet, cased to 8. Land-surface datum is 4,721.1 feet above msl. Highest water level 3.64 below lsd, Mar. 15, 1949; lowest 5.65 below lsd, Aug. 8, 1948. Records available: 1948-51. Measurement discontinued.

29/48-34c1. Dan Filippini. Drilled stock water-table well, diameter 6 inches. Land-surface datum is 4,731.3 feet above msl. Highest water level 6.08 below lsd, Mar. 15, 1949; lowest 8.01 below lsd, Sept. 21, 1954. Records available: 1948-52, 1954. Sept. 21, 8.01.

30/49-6a1. U. S. Geol. Survey. Drilled observation water-table well, diameter 4 inches, depth 9 feet, cased to 9. Land-surface datum is 4,712.1 feet above msl. Highest water level 2.61 below lsd, Mar. 15, 1949; lowest 5.55 below lsd, Sept. 22, 1954. Records available: 1948-54. Sept. 22, 5.55.

31/49-5c1. Wm. Connelly. Beowawe. Dug domestic water-table well, diameter 4 feet, depth 10 feet. Land-surface datum is 4,698.3 feet above msl. Highest water level 6.58 below lsd, Mar. 29, 1951; lowest 8.33 below lsd, Sept. 22, 1954. Records available: 1948-54. Sept. 22, 8.33.

Diamond Valley

19/53-5a1. A. C. Florio. Drilled stock water-table well, diameter 6 inches. Highest water level 175.71 below lsd, Nov. 16, 1953; lowest 180.04 below lsd, Sept. 13, 1949. Records available: 1947-54. Mar. 9, 176.20.

19/53-13b1. Owner unknown. Eureka. Dug unused water-table well, size 4 by 6 feet, depth 19 feet. Highest water level 14.74 below lsd, July 14, 1948; lowest dry, Sept. 11, 1951. Records available: 1948-53. Measurement discontinued.

20/53-15b1. U. S. Bureau of Land Management. Dug stock water-table well, diameter 4 feet, reported depth 99 feet, cribbed with concrete. Highest water level 71.75 below lsd, Apr. 30, 1948; lowest 76.49 below lsd, Mar. 24, 1949. Records available: 1947-54. Mar. 9, 74.08; Sept. 16, 75.39.

20/53-31d1. A. C. Florio. Drilled stock well, diameter 6 inches. Highest water level 156.95 below lsd, Mar. 9, 1954; lowest 165.90 below lsd, Sept. 13, 1949. Records available: 1947-54. Mar. 9, 156.95.

21/53-5c1. A. C. Florio. Drilled stock water-table well, diameter 4 feet, depth 42 feet. Highest water level 28.61 below lsd, Mar. 8, 1954; lowest 28.98 below lsd, Sept. 13, 1949. Records available: 1947-54. Mar. 8, 28.61; Sept. 16, 28.68.

22/54-27a1. Robert Stucki. Drilled domestic and irrigation well, diameter 12 inches, depth 94 feet, cased to 93, perforations 46-93. Highest water level 5.49 below lsd, Aug. 11, 1949; lowest 10.87 below lsd, Sept. 17, 1954. Records available: 1949-54. Mar. 10, 10.15; Sept. 17, 10.87.

22/54-28dc1. Formerly 22/54-33d1. A. L. Jones. Drilled irrigation well, diameter 12 inches, depth 191 feet, cased to 190, perforations 15-25, 144-190. Highest water level 5.93 below lsd, Dec. 16, 1949; lowest 8.97 below lsd, Sept. 16, 1954. Records available: 1949-54. Mar. 10, 8.28; Sept. 16, 8.97.

Kobeh Valley

21/49-17b1. Pete Etchegaray. Drilled stock water-table well, diameter 6 inches, depth 60 feet. Highest water level 39.15 below lsd, Mar. 2, 1953; lowest 42.85 below lsd, Sept. 11, 1951. Records available: 1948-51, 1953. No measurement made in 1954.

Humboldt County

Grass Valley
[See also Pershing County]

35/37-14d3. Kenneth Eddie. Ranch headquarters. Drilled irrigation water-table well, diameter 12 inches, depth 107 feet. Land-surface datum is 4,318 feet above msl. Highest water level 31.01 below lsd, Apr. 27, 1950; lowest 48.91 below lsd, Sept. 1, 1954. Records available: 1946-54. Mar. 10, 47.20; Sept. 1, 48.91.

35/37-28b1. U. S. Bureau of Land Management. Button sage well. Drilled unused water-table well, diameter 12 inches, depth 73 feet. Land-surface datum is 4,300 feet above msl. Highest water level 33.30 below lsd, Sept. 11, 1952; lowest 38.83 below lsd, Sept. 24, 1951. Records available: 1946-54. Mar. 10, 36.69; Sept. 1, 38.20.

35/37-34a2. Owner unknown. Drilled unused water-table well, diameter 10 inches, depth 83 feet. Land-surface datum is 4,301.5 feet above msl. Highest water level 17.68 below lsd, May 16, 1946; lowest 23.71 below lsd, Sept. 20, 1951. Records available: 1946-54. Mar. 10, 20.77; Sept. 1, 23.00.

Humboldt River Valley
[See also Elko, Lander, and Pershing Counties]

35/36-14c1. Charles Hilyer. Ranch headquarters. Drilled domestic and stock water-table well, diameter 12 inches, depth 18 feet. Land-surface datum is 4,236.3 feet above msl. Highest water level 7.38 below lsd, Mar. 29, 1951; lowest 12.90 below lsd, Sept. 1, 20, 1954. Records available: 1947, 1949-54. Mar. 7, 11.81; Sept. 1, 12.90; Sept. 20, 12.90.

35/37-2b1. Henry Harrar. Drilled stock water-table well, diameter 8 inches, depth 21 feet. Land-surface datum is 4,257.8 feet above msl. Highest water level 2.05 below lsd, Mar. 29, 1951; lowest 8.00 below lsd, Sept. 20, 1954. Records available: 1947-54. Mar. 7, 6.45; Aug. 31, 7.76; Sept. 20, 8.00.

35/37-8d2. D. H. McNinch. Drilled unused water-table well, diameter 16 inches, depth 77 feet. Land-surface datum is 4,301 feet above msl. Highest water level 50.74 below lsd, Mar.17, 1953; lowest 58.96 below lsd, Sept. 22, 1954. Records available: 1947-54. Mar. 7, 57.62; Sept. 1, 58.89; Sept. 22, 58.96; Nov. 19, 58.93.

36/38-16c1. George Hay Co. Drilled irrigation water-table well, diameter 12 inches, depth 55 feet. Land-surface datum is 4,291.6 feet above msl. Highest water level 15.08 below lsd, May 14, 1951; lowest 21.53 below lsd, Oct. 29, 1951. Records available: 1947-54. Mar. 7, 18.23; Sept. 20, 19.92.

36/40-19d1. Diamond S Ranch. Drilled irrigation water-table well, diameter 14 inches, depth 51 feet. Highest water level 12.27 below lsd, Sept. 11, 1952; lowest 23.90 below lsd, Apr. 8, 1949. Records available: 1949-54. Mar. 10, 22.05.

36/40-30aa1. Diamond S Ranch. Drilled unused water-table well, diameter 6 inches, depth 101 feet. Highest water level 23.63 below lsd, Sept. 11, 1952; lowest 35.82 below lsd, Feb. 23, 1950. Records available: 1949-54. Mar. 10, 32.87; Sept. 1, 29.89.

37/38-33d1. George Hay Co. Dug unused water-table well, diameter 36 inches, depth 16 feet. Land-surface datum is 4,294.6 feet above msl. Highest water level 9.86 below lsd, June 28, 1951; lowest 14.17 below lsd, Oct. 28, 1948. Records available: 1947-54. Mar. 7, 12.82; Sept. 1, 14.04; Sept. 20, 14.08.

37/39-33d1. Bullhead Ranch. Drilled stock water-table well, diameter 12 inches, depth 24 feet. Land-surface datum is 4,309.5 feet above msl. Highest water level 1.87 below lsd, Mar. 7, 1951; lowest 9.40 below lsd, Oct. 1, 1947. Records available: 1947, 1949-54. Sept. 1, 9.20.

Paradise Valley

37/38-2a1. U. S. Bureau of Land Management. Drilled stock well, diameter 6 inches, depth 79 feet. Land-surface datum is 4,335 feet above msl. Highest water level 26.88 below lsd, Mar. 18, 1953; lowest 36.67 below lsd, Nov. 24, 1950. Records available: 1945-54. Mar. 9, 30.25; Sept. 23, 31.56.

38/39-28d1. Cordoza. Drilled stock water-table well, diameter 8 inches, depth 30 feet. Land-surface datum is 4,312 feet above msl. Highest water level 10.13 below lsd, May 27, 1949; lowest 14.22 below lsd, Sept. 13, 1949. Records available: 1947-51. Measurement discontinued.

39/39-3c1. Gerhard Miller, Sr. Ranch headquarters. Dug stock and domestic water-table well, diameter 8 feet, depth 22 feet. Land-surface datum is 4,342 feet above msl. Highest water level 6.20 below lsd, Mar. 18, 1953; lowest 15.81 below lsd, Sept. 14, 1948. Records available: 1948-54. Mar. 9, 10.59; Sept. 23, 14.78.

39/39-16d1. Dwight C. Vedder. Drilled stock water-table well, diameter 12 inches, depth 46 feet. Land-surface datum is 4,331.7 feet above msl. Highest water level 3.82 below lsd, May 28, 1951; lowest 10.69 below lsd, Sept. 14, 1948. Records available: 1947-54. Mar. 9, 8.54; Sept. 23, 9.89.

39/39-24b1. Dwight C. Vedder. Drilled domestic water-table well, diameter 6 inches, depth 24 feet. Land-surface datum is 4,333.9 feet above msl. Highest water level 3.30 below lsd, Apr. 5, 1946; lowest 10.00 below lsd, Sept. 23, 1954. Records available: 1945-54. Mar. 9, 7.12; Sept. 23, 10.00.

39/39-33c1. Owner unknown. Drilled stock water-table well, diameter 12 inches, depth 37 feet. Land-surface datum is 4,318.2 feet above msl. Highest water level 4.15 below lsd, Apr. 25, 1946; lowest 9.60 below lsd, Sept. 13, 1949, Sept. 19, 1950. Records available: 1945-51, 1953-54. Mar. 9, 5.45.

40/39-10d1. Owner unknown. Drilled unused water-table well, diameter 12 inches, depth 55 feet. Land-surface datum is 4,422 feet above msl. Highest water level 39.60 below lsd, Sept. 10, 1952; lowest 55.02 below lsd, July 23, 1947. Records available: 1945-54. Mar. 9, 44.94; Sept. 23, 45.89.

40/39-26b1. Henry McCleary Timber Co. Drilled domestic well, diameter 16 inches, reported depth 300 feet. Land-surface datum is 4,360 feet above msl. Highest water level 3.43 below lsd, Apr. 25, 1946; lowest 12.12 below lsd, Jan. 30, 1951. Records available: 1945-54. Mar. 9, 8.00; Sept. 23, 9.88.

41/40-6c1. Joe Boggio. Drilled unused water-table well, diameter 16 inches, depth 55 feet. Land-surface datum is 4,458 feet above msl. Highest water level 2.20 below lsd, Feb. 12, 1951; lowest 11.5 below lsd, Aug. 25, 1947. Records available: 1945-54. Mar. 9, 8.67; Sept. 23, 11.17.

41/40-22d1. Ernest Gondra. Drilled domestic water-table well, diameter 7 inches, depth 41 feet. Highest water level 5.63 below lsd, June 16, 1950; lowest 11.82 below lsd, Jan. 31, 1949. Records available: 1947-54. Mar. 9, 9.77; Sept. 23, 10.06.

41/40-30a1. Shelton School. Drilled domestic water-table well, diameter 8 inches, depth 27 feet. Land-surface datum is 4,414 feet above msl. Highest water level 1.17 below lsd, Apr. 30, 1951; lowest 11.50 below lsd, Sept. 23, 1954. Records available: 1945-54. Mar. 9, 7.14; Sept. 23, 11.50.

42/39-25c1. U. S. Bureau of Land Management. Dug unused water-table well, diameter $5\frac{1}{2}$ feet, depth 18 feet. Land-surface datum is 4,523 feet above msl. Highest water level 2.50 below lsd, Apr. 30, 1951; lowest 10.35 below lsd, Nov. 24, 1954. Records available: 1945-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 19	8.45	May 18	8.13	Aug. 18	9.35	Oct. 20	10.28
Feb. 19	8.18	June 18	7.42	Sept. 22	10.00	Nov. 24	10.35
Mar. 19	8.08	July 16	8.35				

42/40-14c1. J. M. Freeman. Drilled domestic and stock water-table well, diameter 12 inches, depth 13 feet. Land-surface datum is 4,606 feet above msl. Highest water level 3.90 below lsd, Apr. 29, 1949; lowest 9.76 below lsd, Sept. 23, 1947. Records available: 1946-54. Mar. 9, 5.95; Sept. 24, 8.10.

42/40-18a1. E. C. Lye. Drilled irrigation water-table well, diameter 12 inches, depth 53 feet, reported cased to 64. Land-surface datum is 4,614 feet above msl. Highest water level 4.82 below lsd, Apr. 30, 1951; lowest 15.97 below lsd, Sept. 24, 1954. Records available: 1945-54. Mar. 9, 14.10; Sept. 24, 15.97.

Quinn River Valley

42/37-33b2. Hassenyager. Drilled irrigation water-table well, diameter 18 inches, depth 95 feet. Highest water level 35.42 below lsd, Sept. 16, 1953; lowest 40.42 below lsd, July 18, 1948. Records available: 1948-54. Mar. 9, 35.74; Sept. 10, 36.86.

43/37-4c2. Owner unknown. Drilled unused water-table well, diameter 6 inches, depth 42 feet. Land-surface datum is 4,230 feet above msl. Highest water level 30.41 below lsd, Sept. 10, 1952; lowest 34.15 below lsd, Mar. 27, 1952. Records available: 1947-54. Mar. 9, 31.82; Sept. 24, 33.60.

43/37-28a1. Elmo Bowly. Dug and drilled irrigation water-table well, size 5 by 6 feet to 12 feet, 12 inches to 57 feet. Land-surface datum is 4,234 feet above msl. Highest water level 8.13 below lsd, Nov. 5, 1947; lowest 12.18 below lsd, Sept. 18, 1951. Records available: 1946-54. Mar. 9, 10.14; Sept. 24, 16.43, nearby well pumping.

43/37-34d1. A. E. Hosack. Dug and drilled unused water-table well, size 4 by 4 feet to 17 feet, 12 inches to 52 feet. Land-surface datum is 4,270 feet above msl. Highest water level 40.08 below lsd, Sept. 16, 1947; lowest dry, Sept. 10, 1952. Records available: 1947-53. Measurement discontinued.

Lander County

Humboldt River Valley
[See also Elko, Humboldt, and Pershing Counties]

32/45-2a1. E. Marvel. Drilled unused water-table well, diameter 6 inches, depth 65 feet. Land-surface datum is 4,515 feet above msl. Highest water level 4.16 below lsd, May 22, 1947; lowest 6.36 below lsd, Aug. 25, 1948. Records available: 1946-54. Mar. 10, 5.48; Sept. 9, 5.32.

32/45-9ab1. Owner unknown. Drilled unused water-table well, diameter 4 inches. Land-surface datum is 4,509 feet above msl. Highest water level 6.47 below lsd, Apr. 9, 1946; lowest 10.29 below lsd, Oct. 24, 1947. Records available: 1946-53. No measurement made in 1954.

32/45-11d1. U. S. Geol. Survey. Drilled test and observation well, diameter 6 inches, depth 197 feet, cased to 171. Highest water level 4.08 below lsd, July 10, 1952; lowest 10.20 below lsd, Sept. 9, 1954. Records available: 1949-54. Mar. 10, 8.25; Sept. 9, 10.20.

32/45-11d2. U. S. Geol. Survey. Drilled test and observation water-table well, diameter 2 inches, depth 24 feet, cased to 24, perforations 20-24. Highest water level 1.11 below lsd, July 10, 1952; lowest 9.12 below lsd, Dec. 1, 1949. Records available: 1949-53. Measurement discontinued.

32/45-20b1. R. M. Clark. Drilled domestic water-table well, diameter 6 inches, depth 14 feet. Land-surface datum is 4,509 feet above msl. Highest water level 5.93 below lsd, Mar. 20, 1947; lowest 8.64 below lsd, Sept. 19, 1951. Records available: 1946-54. Mar. 10, 6.85; Sept. 14, 7.85.

32/45-22c1. Owner unknown. Drilled observation water-table well, diameter 2 inches, depth 6 feet. Highest water level 3.07 below lsd, Mar. 16, 1951; lowest 5.45 below lsd, Oct. 24, 1947. Records available: 1946-54. Mar. 10, 4.45.

32/46-10d1. U. S. Bureau of Reclamation. Dug stock water-table well, size 8 by 10 feet, depth 10 feet, cribbed with wood. Highest water level 2.36 below lsd, Apr. 11, 1946; lowest 7.15 below lsd, Sept. 22, 1954. Records available: 1945-54. Mar. 10, 5.08; Sept. 22, 7.15.

32/46-11d1. U. S. Bureau of Reclamation. Dug stock water-table well, size 4 by 5 feet, depth 13 feet. Land-surface datum is 4,543 feet above msl. Highest water level 3.77 below lsd, Apr. 11, 1946; lowest 9.50 below lsd, Oct. 24, 1947, Sept. 22, 1954. Records available: 1945-54. Mar. 10, 7.17; Sept. 22, 9.50.

32/46-16d1. U. S. Bureau of Reclamation. Drilled observation water-table well, diameter 2 inches, depth 11 feet. Land-surface datum is 4,538 feet above msl. Highest water level 5.07 below lsd, Apr. 11, 1946; lowest 7.61 below lsd, Sept. 14, 1950. Records available: 1946-51, 1953-54. Mar. 10, 6.27.

32/46-27ba1. Southern Pacific Co. Drilled unused well, diameter 12 inches, depth 431 feet. Land-surface datum is 4,560 feet above msl. Highest water level 18.95 below lsd, Mar. 19, 1953; lowest 20.18 below lsd, Sept. 14, 1954. Records available: 1947-54. Mar. 10, 19.34; Sept. 14, 20.18.

32/46-31bb1. Humboldt Petroleum Co. Drilled oil test well, diameter 6 inches, reported depth 126 feet. Land-surface datum is 4,529 feet above msl. Highest water level 10.75 below lsd, Apr. 3, 1952; lowest 12.19 below lsd, Sept. 19, 1949. Records available: 1947-54. Mar. 10, 11.44; Sept. 14, 12.18.

Reese River Valley

27/43-33cd1. Owner unknown. Watts. Drilled unused well, diameter 6 inches, depth 114 feet. Land-surface datum is 4,810 feet above msl. Highest water level 12.36 below lsd, Apr. 22, 1948; lowest 14.44 below lsd, Mar. 16, 1951. Records available: 1947-54. Sept. 9, 14.20.

30/42-24cc1. U. S. Bureau of Land Management. Drilled stock water-table well, diameter 6 inches, depth 54 feet. Land-surface datum is 4,634 feet above msl. Highest water level 10.30 below lsd, Mar. 16, 1949; lowest 12.78 below lsd, Sept. 18, 1953. Records available: 1947-54. Mar. 10, 11.55; Sept. 9, 12.75.

30/43-9aa1. Copper Canyon Mining Co. Drilled unused well, diameter 12 inches, depth 201 feet, cased to 192. Land-surface datum is 4,767 feet above msl. Highest water level 134.56 below lsd, May 22, 1947; lowest 138.27 below lsd, Mar. 16, 1951. Records available: 1947-54. Nov. 2, 137.62.

30/44-18ad1. Copper Canyon Mining Co. Drilled unused well, diameter 12 inches, depth 329 feet, cased to 300. Land-surface datum is 4,609 feet above msl. Highest water level 5.25 below lsd, Mar. 16, 1951; lowest 6.53 below lsd, Sept. 9, 1954. Records available: 1947-54. Sept. 9, 6.53.

30/44-22cb1. Owner unknown. Dillon. Drilled unused water-table well, diameter 6 inches, depth 80 feet. Land-surface datum is 4,676 feet above msl. Highest water level 26.64 below lsd, Nov. 8, 1947; lowest 27.81 below lsd, Sept. 9, 1954. Records available: 1947-54. Sept. 9, 27.81.

30/45-4bd1. Martin Jenkins Ranch. Drilled domestic and stock well, diameter 6 inches, depth 40 feet. Land-surface datum is 4,613 feet above msl. Highest water level 18.17 below lsd, June 23, 1949; lowest 20.96 below lsd, Sept. 9, 1954. Records available: 1947-54. Sept. 9, 20.96.

30/45-18aa1. U. S. Bureau of Land Management. Dug stock water-table well, size 4 by 4 feet, reported depth 60 feet. Land-surface datum is 4,635 feet above msl. Highest water level 23.69 below lsd, Jan. 8, 1948; lowest 27.33 below lsd, Sept. 9, 1954. Records available: 1947-54. Sept. 9, 27.33.

Lincoln County

Lake Valley
[See also White Pine County]

3/66-23d1. U. S. Bureau of Land Management. Drilled stock well, diameter 6 inches. Highest water level 40.70 below lsd, Sept. 9, 1954; lowest 43.21 below lsd, Sept. 6, 1949. Records available: 1946-51, 1953-54. Sept. 9, 40.70.

9/65-1b1. Fred Twisselman. Drilled irrigation well, diameter 12 inches, depth 165 feet. Highest water level 23.64 below lsd, Apr. 16, 1947; lowest 37.93 below lsd, Mar. 14, 1951. Records available: 1947-54. Sept. 9, 36.74.

Meadow Valley

S1/68-28c1. C. Ronnow. Drilled irrigation well, diameter 12 inches, reported depth 75 feet. Highest water level 43.15 below lsd, Mar. 25, 1952; lowest 49.29 below lsd, Sept. 27, 1948. Records available: 1945-52. Measurement discontinued.

S1/68-32a2. Paul Edwards Estate. Ranch headquarters. Drilled unused water-table well in alluvium of Quaternary age, diameter 12 inches, reported depth 50 feet. Land-surface datum is 4,785.2 feet above msl. Highest water level 32.13 below lsd, Apr. 14, 1946; lowest 39.57 below lsd, Sept. 27, 1948. Records available: 1946-52. Measurement discontinued.

S1/68-33b1. Lafe Matthews Estate. Drilled irrigation well in alluvium of Quaternary age, diameter 10 inches, reported depth 120 feet, cased to 80, perforations 60-80. Land-surface datum is 4,784.7 feet above msl. Highest water level 30.32 below lsd, Apr. 25, 1946; lowest 37.23 below lsd, Sept. 2, 1950. Records available: 1946-54. Mar. 18, 31.93; Sept. 9, 35.90.

S2/67-24d1. Duffin. Dug unused water-table well in alluvium of Quaternary age, size 4 by 4 feet, depth 10 feet, cribbed with wood. Land-surface datum is 4,677.6 feet above msl. Highest water level 3.45 below lsd, Mar. 21, 1949; lowest 6.17 below lsd, Sept. 13, 1951. Records available: 1946-54. Mar. 18, 4.98; Sept. 8, 5.99.

S2/68-5c1. Stockyard well. Dug stock water-table well in alluvium of Quaternary age, size 8 by 8 feet, depth 12 feet. Land-surface datum is 4,733.8 feet above msl. Highest water level 9.39 below lsd, Sept. 8, 1954; lowest 15.25 below lsd, Sept. 16, 1953. Records available: 1946-47, 1949-54. Mar. 18, 12.29; Sept. 8, 9.39. Measurement discontinued.

S2/68-7a2. P. Findlay. Drilled domestic water-table well in alluvium of Quaternary age, diameter 4 inches, reported depth 40 feet, cased to 40. Land-surface datum is 4,726.5 feet above msl. Highest water level 17.16 below lsd, Apr. 14, 1946; lowest 21.73 below lsd, Sept. 16, 1953. Records available: 1946-54. Mar. 18, 19.05. Measurement discontinued.

S2/68-8b1. Lory Free. Drilled irrigation well in alluvium of Quaternary age, diameter 10 inches, reported depth 88 feet. Land-surface datum is 4,721.7 feet above msl. Highest water level 12.09 below lsd, Apr. 14, 1946; lowest 18.57 below lsd, Sept. 12, 1950. Records available: 1946-54. Mar. 18, 13.12; Sept. 8, 17.49.

S2/68-8b5. U. S. Geol. Survey. Drilled test and observation well in alluvium of Quaternary age, diameter 8 inches, depth 110 feet, cased to 110. Highest water level 10.72 below lsd, Mar. 20, 1950; lowest 17.38 below lsd, Sept. 1, 1954. Records available: 1949-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	12.44	14.18	.....	16.57	.....	17.38	15.50	.....	.....
2	.....	.....	.....	12.41	14.24	.....	16.71	.....	.....	15.49	.....	.....
3	.....	.....	.....	12.50	14.15	.....	16.75	.....	.....	15.49	.....	.....
4	.....	.....	12.48	12.59	14.14	.....	16.76	.....	.....	15.50	.....	.....
5	.....	.....	12.47	12.68	14.20	.....	.....	.....	.....	15.49	.....	.....
6	13.30	12.79	12.46	12.75	14.23	.....	16.80	.....	.....	.....	.....	.....
7	13.28	12.78	12.46	12.84	14.25	.....	.....	.....	.....	.....	.....	.....
8	13.26	12.76	12.46	12.75	14.17	.....	.....	.....	16.44	.....	15.09	14.15
9	13.25	12.74	12.43	12.80	14.25	.....	.....	16.65	16.37	.....	15.09	.....
10	13.25	12.70	12.42	12.77	14.29	.....	.....	16.66	16.31	.....	15.09	.....
11	13.21	12.70	12.47	12.69	14.38	.....	.....	16.61	.....	15.29	15.09	.....
12	13.20	12.69	.....	12.68	14.43	.....	16.80	.....	.....	15.28	15.09	13.99
13	13.18	12.68	.....	12.77	14.58	.....	.....	.....	.....	15.27	15.09	.....
14	13.17	12.65	.....	12.77	14.72	.....	.....	.....	.....	15.26	15.09	.....
15	13.17	12.65	.....	12.82	14.83	.....	.....	.....	.....	15.22	14.94	.....
16	13.16	12.61	.....	13.00	.....	.....	.....	.....	.....	15.22	14.92	.....
17	13.15	.....	.....	13.11	15.10	.....	.....	.....	.....	.....	14.92	.....
18	13.10	12.65	12.45	13.22	15.20	.....	.....	.....	16.00	.....	14.85	.....
19	13.08	12.65	12.43	13.34	15.30	.....	16.67	.....	16.03	.....	14.84	.....
20	13.07	12.61	12.43	13.47	15.39	.....	.....	.....	.....	.....	14.84	.....
21	13.08	12.59	12.41	13.59	15.46	.....	.....	.....	.....	.....	14.84	.....
22	13.05	12.59	12.41	13.69	15.47	.....	.....	.....	15.72	.....	14.84	.....
23	.....	12.58	12.41	13.78	15.45	.....	.....	.....	15.72	15.13	14.84	.....
24	.....	12.55	12.40	13.89	15.41	.....	.....	17.24	15.70	15.13	14.84	.....
25	.....	12.52	12.41	13.95	15.40	.....	.....	17.24	15.66	15.13	.....	.....
26	.....	12.50	12.41	13.99	15.40	.....	.....	17.25	.....	15.13	.....	.....
27	.....	12.54	12.41	14.04	.....	.....	.....	17.25	.....	15.13	.....	.....
28	.....	12.50	12.48	14.04	.....	.....	.....	17.26	.....	15.13	15.50	.....
29	.....		.....	14.12	.....	16.45	.....	17.23	.....	15.16	.....	.....
30	.....		12.51	14.13	.....	16.51	.....	17.21	.....	15.17	.....	.....
31	.....		12.51		.....		.....	17.35		16.16		.....

S3/67-2a1. Grant Lee. Drilled irrigation well in alluvium of Quaternary age, diameter 10 inches, depth 220 feet, cased to 180. Land-surface datum is 4,605.1 feet above msl. Highest water level 16.03 below lsd, Mar. 16, 1946; lowest 21.57 below lsd, Apr. 27, 1948. Records available: 1946, 1948-52, 1954. Mar. 18, 19.05; Sept. 8, 20.62.

S3/67-28c2. U. S. Geol. Survey. Drilled observation artesian well in alluvium of Quaternary age, diameter 6 inches, depth 172 feet, cased to 161. Highest water level 2.71 above lsd, Sept. 19, 1949; lowest 1.45 above lsd, Sept. 12, 1951. Records available: 1946-54. Sept. 8, +1.74.

Pahranagat Valley

S4/60-2d1. Wells-Stewart Land and Livestock Co. Drilled unused well, diameter 10 inches, reported depth 150 feet. Highest water level 40.77 below lsd, Dec. 17, 1946; lowest 48.72 below lsd, Sept. 8, 1954. Records available: 1946, 1948-54. Mar. 17, 44.48; Sept. 8, 48.72.

S4/60-2d2. Wells-Stewart Land and Livestock Co. Drilled irrigation well, diameter 12 to 11 inches, reported depth 471 feet, cased to 471, perforations 50-199. Highest water level 42.28 below lsd, Sept. 20, 1949; lowest 52.56 below lsd, Mar. 25, 1952. Records available: 1949-52. Measurement discontinued.

S4/60-34a2. W. U. Schofield, Jr. Drilled unused well, diameter 10 inches, reported depth 96 feet, cased to 96, perforations 60-96. Highest water level 58.12 below lsd, Aug. 8, 1946; lowest 64.31 below lsd, Feb. 19, 1948. Records available: 1946, 1948-54. Mar. 17, 62.46; Sept. 8, 62.00.

S5/60-10b1. Owner unknown. Drilled unused well, diameter 5 inches, depth 81 feet. Highest water level 63.82 below lsd, Mar. 22, 1949; lowest 74.19 below lsd, Dec. 17, 1946. Records available: 1945-46, 1948-53. No measurement made in 1954.

S6/61-18d2. Gardner Chism. Drilled unused well, diameter 6 inches, depth 41 feet. Highest water level 5.55 below lsd, Mar. 14, 1951; lowest 9.66 below lsd, Sept. 8, 1954. Records available: 1946-54. Mar. 17, 7.24; Sept. 8, 9.66.

S6/61-30d1. L. and E. Wadsworth. Drilled unused well, diameter 6 inches, depth 39 feet. Highest water level 12.90 below lsd, Mar. 25, 1952; lowest 16.82 below lsd, Mar. 22, 1949. Records available: 1946-54. Mar. 17, 14.83; Sept. 8, 15.10.

S6/61-32d4. Kirk Buffum. Drilled domestic well, diameter 6 inches, reported depth 57 feet. Highest water level 14.72 below lsd, Mar. 21, 1950; lowest 21.68 below lsd, Mar. 14, 1951. Records available: 1946, 1948-54. Mar. 17, 17.86; Sept. 8, 19.53.

S7/61-5d1. Harvey Frehner. Drilled unused well, diameter 6 inches. Highest water level 12.17 below lsd, Mar. 21, 1950; lowest 15.33 below lsd, Sept. 11, 1952. Records available: 1946-54. Sept. 8, 14.99.

S8/61-2c1. J. H. Hail. Drilled irrigation well, diameter 10 inches, depth 92 feet, sand-filled to 30 feet. Highest water level 19.37 below lsd, Mar. 21, 1950; lowest 26.30 below lsd, Sept. 15, 1953. Records available: 1946-54. Mar. 17, 24.82; Sept. 8, 24.36.

S8/61-24d1. Bill Grieves. Dug unused water-table well, size 4 by 4 feet. Highest water level 2.96 below lsd, Mar. 25, 1952; lowest 7.85 below lsd, Sept. 30, 1948. Records available: 1946-54. Mar. 17, 3.80; Sept. 8, 7.11.

S8/62-31b1. John Richards. Drilled unused well, diameter 10 inches, depth 66 feet. Highest water level 18.29 below lsd, Mar. 25, 1952; lowest 20.66 below lsd, Sept. 15, 1953. Records available: 1945-48, 1950-53. Measurement discontinued.

Lyon County

Carson River Valley

17/22-35b1. R. H. Conklin. Drilled irrigation well, diameter 16 inches. Highest water level 17.49 below lsd, Apr. 1, 1952; lowest 27.80 below lsd, Aug. 15, 1949. Records available: 1949-50, 1952-54. Mar. 1, 21.64.

18/25-31a1. Southern Pacific Co. Appian. Drilled unused well, diameter 6 inches. Highest water level 30.32 below lsd, Mar. 3, 1954; lowest 36.05 below lsd, Mar. 30, 1950. Records available: 1949-54. Mar. 3, 30.32.

Mason Valley

11/25-11a1. McDonald. Drilled irrigation well, diameter 12 inches, reported depth 247 feet. Highest water level 62.33 below lsd, Aug. 19, 1948; lowest 67.75 below lsd, Mar. 30, 1950. Records available: 1948-51,1954. Mar. 1, 63.14.

11/25-11b1. Judd. Drilled domestic and stock well, diameter 6 inches, reported depth 75 feet. Highest water level 26.65 below lsd, Sept. 6, 1951; lowest 39.27 below lsd, Mar. 30, 1950. Records available: 1948-54. Apr. 7, 31.20.

14/25-28d1. School District. Drilled unused well, diameter 6 inches, depth 38 feet. Highest water level 1.75 below lsd, July 13, 1953; lowest 6.00 below lsd, Mar. 26, 1951. Records available: 1947-54. Mar. 1, 5.44.

15/25-26c1. Mason Valley Ranch. Drilled unused well, diameter 8 inches, depth 49 feet. Highest water level 4.10 below lsd, Apr. 1, 1952; lowest 7.40 below lsd, Mar. 1, 1954. Records available: 1945, 1947-54. Mar. 1, 7.40.

Smith Valley

10/24-4cd1. Herb Rountree. Drilled irrigation well, diameter 14 to 12 inches, depth 250 feet. Land-surface datum is 4,910 feet above msl. Highest water level 59.61 below lsd, Nov. 2, 1948; lowest 73.64 below lsd, May 26, 1950. Records available: 1948-54. Mar. 1, 65.72; Apr. 6, 66.48.

10/24-5cb1. Fred Fulstone. Ranch headquarters. Dug and drilled stock and domestic well, size 4 by 5 feet to 60 feet, 8 inches to 480 feet. Land-surface datum is 4,898 feet above msl. Highest water level 52.66 below lsd, Sept. 28, 1950; lowest 65.23 below lsd, Sept. 17, 1952. Records available: 1949-52, 1954. Oct. 4, 63.55. Measurement discontinued.

10/24-7bd1. Rex B. Clark. Ranch headquarters. Drilled domestic well, diameter 4 inches, reported depth 128 feet. Land-surface datum is 4,910 feet above msl. Highest water level 62.13 below lsd, Dec. 21, 1951; lowest 64.53 below lsd, May 26, 1950. Records available: 1949-51, 1953. Measurement discontinued.

11/23-1ab1. C. G. Smith. Dug stock water-table well, diameter 4 feet, depth 30 feet. Highest water level 20.41 below lsd, Sept. 11, 1953; lowest 22.35 below lsd, May 26, 1950. Records available: 1949-54. Mar. 1, 21.19; Oct. 4, 20.89.

11/23-3dc1. R. B. Day. Drilled irrigation well, diameter 12 inches, depth 242 feet, cased to 164, perforations 0-164. Land-surface datum is 4,830 feet above msl. Highest water level 45.34 below lsd, Sept. 11, 1953; lowest 50.55 below lsd, Mar. 26, 1951. Records available: 1948-54. Apr. 7, 47.23; Oct. 4, 47.13.

11/23-11ba1. A. Bunkowski. Drilled domestic well, diameter 3 inches, reported depth 70 feet. Highest water level 8.37 below lsd, Aug. 9, 1950; lowest 12.18 below lsd, Mar. 30, 1950. Records available: 1949-54. Apr. 7, 11.00; Oct. 5, 9.39.

11/23-24cd1. Mrs. Kate Gallaner. Drilled domestic artesian well, diameter 3 inches. Highest water level 37.8 above lsd, Sept. 17, 1952; lowest 32.9 above lsd, Dec. 21, 1951. Records available: 1949-54. Apr. 7, +34.5; Oct. 4, +35.7.

11/23-27dc1. C. and M. Groso. Drilled unused well, diameter 4 inches, depth 88 feet. Highest water level 56.24 below lsd, Aug. 9, 1950; lowest 71.90 below lsd, Mar. 29, 1950. Records available: 1948-54. Mar. 1, 69.84; Oct. 5, 63.86.

11/24-18ad1. Mrs. W. E. Allen. Jetted unused artesian well, diameter 2 inches, reported depth 80 feet. Land-surface datum is 4,727.7 feet above msl. Highest water level 31.9 above lsd, Nov. 27-28, 1954; lowest 21.6 above lsd, Oct. 15, 1949. Records available: 1948-54.

Daily noon water level, above lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	26.6	26.5	26.6	26.7	28.6	....	....	28.6	31.1	....	28.4
2	....	26.6	....	26.7	26.8	28.7	....	28.3	28.3	....	....	28.3
3	....	26.6	....	26.8	26.8	28.7	28.6	28.3	28.3	....	28.2	28.3
4	....	26.6	....	26.8	26.8	28.7	28.7	28.4	....	31.2	28.2	....
5	....	26.6	....	26.7	26.8	....	28.7	28.4	....	30.2	28.1	....
6	....	26.6	....	26.6	26.9	....	28.6	28.2	....	29.1	27.2	....
7	....	26.6	....	26.7	26.7	....	28.9	28.3	....	29.0	28.0	....
8	....	....	....	26.7	26.7	....	28.9	28.5	....	28.9	28.1	....
9	....	26.9	26.4	26.6	26.8	....	28.7	28.3	....	28.6	28.1	....
10	....	26.7	26.3	26.7	....	....	28.6	28.2	....	28.3	28.0	....
11	....	26.6	26.3	26.8	....	....	28.7	28.1	....	28.5	28.1	....
12	....	26.6	26.4	26.9	....	....	28.7	28.2	....	28.6	28.1	....
13	....	26.5	26.5	26.5	28.8	....	28.6	28.2	....	28.6	....	28.0
14	....	26.4	26.5	26.9	28.8	....	28.5	28.3	....	28.6	....	28.0
15	....	26.5	26.7	26.7	28.2	....	28.3	28.3	....	28.7	....	27.0
16	....	26.4	26.6	26.6	28.5	28.7	28.3	28.2	....	28.7	....	27.4
17	....	26.5	26.6	26.7	28.8	28.7	26.7	....	....	28.9	27.7	27.4
18	....	26.3	26.5	26.7	28.9	28.7	26.7	....	....	28.9	27.5	27.4
19	....	26.2	26.5	26.5	29.0	28.7	27.6	....	....	29.0	27.4	27.4
20	....	26.3	26.5	26.8	28.8	28.7	28.0	....	28.6	29.0	27.3	27.3
21	....	....	26.6	....	28.5	28.2	28.1	....	29.1	29.0	27.2	27.2
22	....	....	26.6	....	28.8	28.7	28.3	....	29.6	....	28.0	27.0
23	....	26.4	26.5	....	28.9	28.7	28.3	....	30.0	....	28.1	27.0
24	....	26.5	26.7	....	28.9	28.7	28.4	27.8	30.2	....	30.6	....
25	....	26.5	26.6	....	28.7	28.7	....	28.6	30.4	....	31.1	....
26	26.5	26.5	26.6	....	28.7	28.7	....	28.3	30.5	....	31.8	....
27	26.6	26.4	26.7	....	28.7	28.7	....	26.5	30.8	....	31.9	27.0
28	26.6	26.4	26.8	26.8	28.7	....	....	26.3	30.9	....	31.9	27.0
29	26.6	....	26.6	26.9	28.9	....	....	26.1	30.8	....	29.6	27.0
30	26.6		26.4	26.7	28.9	....	....	27.5	31.1	....	28.5	27.0
31	26.6		26.6		28.7		....	28.2		....		27.0

11/24-18da1. Mrs. Mary Harrison. Drilled domestic and irrigation artesian well, diameter 3 inches, reported depth 81 feet. Land-surface datum is 4,740.26 feet above msl. Highest water level 29.1 above lsd, Oct. 4, 1954; lowest 24.90 above lsd, May 11, 1949. Records available: 1948-54. Mar. 1, +27.6; Oct. 4, +29.1.

11/24-22dc1. Fred Fulstone. Dug unused water-table well, size 18 by 30 inches, reported depth 130 feet, reported cased to 130, cribbed with concrete. Land-surface datum is 4,888.46 feet above msl. Highest water level 53.46 below lsd, Feb. 3, 1953; lowest 62.19 below lsd, Nov. 15, 1949. Records available: 1948-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	59.55	59.96	60.23	60.59	59.92	60.05	60.31	.....	60.74	60.73	.....	60.97
2	59.56	59.97	60.24	60.60	59.87	60.06	60.32	.....	60.74	.....	.....	60.96
3	59.58	59.99	60.25	60.61	59.82	60.07	60.33	.....	60.74	.....	.....	60.95
4	59.59	60.00	60.26	60.62	59.78	60.07	60.33	.....	60.74	.....	.....	60.94
5	59.60	60.01	60.27	60.64	59.74	60.08	60.34	.....	60.74	.....	.....	60.93
6	59.62	60.02	60.28	60.65	59.69	60.09	60.35	.....	60.75	.....	.....	60.91
7	59.63	60.03	60.29	60.66	59.74	60.10	60.36	.....	60.75	.....	.....	60.90
8	59.64	60.04	60.30	60.67	59.73	60.11	60.37	.....	60.75	.....	.....	60.89
9	59.65	60.05	60.32	60.68	59.72	60.12	60.38	.....	60.75	.....	.....	60.87
10	59.66	60.06	60.33	60.69	59.72	60.13	60.39	.....	60.75	.....	.....	60.86
11	59.67	60.07	60.34	60.70	59.73	60.13	60.40	.....	60.75	.....	.....	60.85
12	59.69	60.08	60.35	60.71	59.74	60.14	60.41	.....	60.75	.....	.....	60.84
13	59.70	60.09	60.36	60.71	59.77	60.15	60.42	.....	60.76	.....	.....	60.82
14	59.71	60.09	60.37	60.71	59.80	60.16	60.43	.....	60.76	.....	.....	60.81
15	59.72	60.10	60.38	60.70	59.84	60.17	60.43	.....	60.76	.....	.....	60.80
16	59.73	60.11	60.39	60.67	59.77	60.18	60.44	.....	60.76	.....	.....	60.79
17	59.75	60.12	60.40	60.61	59.79	60.19	60.45	.....	60.76	.....	.....	60.77
18	59.76	60.13	60.42	60.55	59.81	60.20	60.46	.....	60.75	.....	.....	60.76
19	59.77	60.14	60.43	60.47	59.83	60.20	60.47	.....	60.75	.....	.....	60.75
20	59.78	60.15	60.44	60.42	59.85	60.21	60.48	.....	60.75	.....	.....	60.73
21	59.80	60.16	60.46	60.37	59.87	60.22	60.49	.....	60.75	.....	.....	60.72
22	59.81	60.17	60.47	60.30	59.89	60.23	60.50	.....	60.75	.....	.....	60.70
23	59.82	60.18	60.49	60.21	59.92	60.24	60.51	.....	60.74	.....	.....	60.69
24	59.84	60.18	60.50	60.17	59.94	60.25	60.52	.....	60.74	.....	.....	60.67
25	59.85	60.19	60.51	60.14	59.98	60.26	60.53	.....	60.74	.....	.....	60.65
26	59.87	60.20	60.52	60.10	59.99	60.27	60.53	.....	60.74	.....	.....	60.64
27	59.89	60.21	60.53	60.07	60.00	60.27	60.54	.....	60.74	.....	.....	60.62
28	59.91	60.22	60.55	60.04	60.01	60.28	60.54	60.73	60.73	.....	.....	60.61
29	59.92		60.56	60.00	60.02	60.29	.....	60.73	60.73	.....	.....	60.59
30	59.94		60.57	59.96	60.03	60.30	.....	60.74	60.73	.....	.....	60.57
31	59.95		60.58		60.04		.....	60.74		.....		60.56

11/24-27cc1. A. A. Chisholm. Drilled domestic well, diameter 4 inches, reported depth 123 feet. Land-surface datum is 4,879.7 feet above msl. Highest water level 40.67 below lsd, Sept. 11, 1953; lowest 47.80 below lsd, May 11, 1949. Records available: 1948-54. Mar. 1, 43.17; Oct. 4, 41.62.

11/24-32ab1. Nellie Albright. Drilled domestic well, diameter 3 inches, reported depth 130 feet. Land-surface datum is 4,824 feet above msl. Highest water level 0.94 below lsd, Mar. 29, 1948; lowest 7.45 below lsd, May 26, 1950. Records available: 1948-54. Mar. 1, 2.32; Oct. 4, 2.94.

11/24-32dc1. A. Nuti. Drilled irrigation well, diameter 16 inches, reported depth 390 feet. Land-surface datum is 4,865 feet above msl. Highest water level 23.62 below lsd, Mar. 3, 1948; lowest 33.08 below lsd, Sept. 17, 1952. Records available: 1948-54. Mar. 1, 26.88; Oct. 4, 27.02.

12/23-22ac3. S. H. Hunnewill. Drilled stock artesian well, diameter 6 inches, reported depth 50 feet. Land-surface datum is 4,680 feet above msl. Highest water level 10.3 above lsd, Apr. 7, 1954; lowest 8.9 above lsd, Sept. 6, 1951. Records available: 1948-54. Apr. 7, +10.3; Oct. 4, +9.1.

12/24-30cd1. Owner unknown. Drilled unused well, diameter 8 inches, depth 70 feet. Land-surface datum is 4,797.66 feet above msl. Highest water level 46.45 below lsd, May 28, 1948; lowest 48.58 below lsd, June 26, 1950. Records available: 1948-54. Mar. 1, 46.80; Oct. 5, 48.09.

Unnamed Valley

16/21-29c1. Owner unknown. Drilled unused water-table well, diameter 4 inches, depth 59 feet. Highest water level 51.31 below lsd, Nov. 13, 1947; lowest 52.30 below lsd, Sept. 6, 1951. Records available: 1947-54. Mar. 1, 52.12.

Mineral County

Gabbs Valley

10/35-11a1. U. S. Bureau of Land Management. Drilled stock well, diameter 6 inches, depth 265 feet. Highest water level 185.10 below lsd, Mar. 24, 1952; lowest 186.38 below lsd, Mar. 20, 1950. Records available: 1948-53. No measurement made in 1954.

Soda Spring Valley

8/34-28c1. Basic Magnesium Plant. Drilled unused well, diameter 8 inches. Highest water level 136.82 below lsd, Mar. 15, 1954; lowest 137.72 below lsd, Mar. 20, 1950. Records available: 1949-54. Mar. 15, 136.82; Sept. 7, 136.89.

Whisky Flat

6/31-33b2. W. F. Merchant. Drilled unused well, diameter 8 inches, depth 69 feet. Highest water level 42.23 below lsd, Sept. 19, 1950; lowest 42.37 below lsd, Mar. 12, 1951. Records available: 1949-51. Measurement discontinued.

Nye County

Pahrump Valley
[See also Clark County]

S19/53-9bbc1. Van Horn & Stringfellow. Drilled irrigation well, diameter 14 inches, depth 746 feet, cased to 526. Highest water level 83.50 below lsd, July 2, 1947; lowest 91.77 below lsd, Sept. 21, 1953. Records available: 1947-53. No measurement made in 1954.

S19/53-10cbb1. Dickey & Harris. Drilled unused well, diameter 18 inches, depth 250 feet, casing removed. Highest water level 90.32 below lsd, Apr. 1, 1947; lowest 96.30 below lsd, Nov. 13, 1954. Records available: 1946-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 23	95.60	June 23	95.65	Sept. 28	95.85	Nov. 13	96.30
Apr. 22	95.80	July 23	95.80	Oct. 13	95.90	Dec. 13	96.20
May 23	95.70	Aug. 28	95.90				

S19/53-15bd1. Larson Bros. (State Engineer No. 29). Drilled domestic well, diameter 16 inches, depth 64 feet. Highest water level 58.01 below lsd, Apr. 1, 1947; lowest 68.30 below lsd, Nov. 13, 1954. Records available: 1947-54.

Jan. 24	64.60	Apr. 22	65.30	July 23	66.35	Oct. 13	68.10
Feb. 23	65.90	May 23	65.90	Aug. 28	66.68	Nov. 13	68.30
Mar. 23	65.50	June 23	66.18	Sept. 28	66.70	Dec. 13	67.70

S19/53-22acd1. Stavers (State Engineer No. 31). Drilled domestic and irrigation well, diameter 16 inches, reported depth 540 feet, cased to 280, perforations 112-124, cemented at 280. Highest water level 41.27 below lsd, Apr. 1, 1947; lowest 60.00 below lsd, Dec. 13, 1954. Records available: 1947-54.

Jan. 24	53.70	Apr. 22	57.30	July 23	58.30	Oct. 13	57.30
Feb. 23	55.60	May 23	57.70	Aug. 28	57.36	Nov. 13	58.55
Mar. 23	55.70	June 23	56.75	Sept. 28	57.32	Dec. 13	60.00

S19/53-27aaa1. Emma L. Oeder (State Engineer No. 55). Drilled unused well, diameter 10 inches, reported depth 425 feet, cased to 101. Highest water level 41.95 below lsd, May 19, 1948; lowest 66.85 below lsd, May 4, 1954. Records available: 1948-54.

Daily noon water level from recorder graph*

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52.10	52.30	.....	64.45	63.95	.....	65.20	.....	62.25
2	52.05	55.50	.....	64.60	65.65	.....	65.30	.....	66.35
3	51.98	56.61	.....	64.68	66.35	.....	65.30	.....	66.60
4	51.91	.....	.....	64.85	66.85	.....	65.20	.....	66.70
5	51.85	60.70	.....	64.85	66.45	.....	64.85	.....	66.75
6	51.77	60.41	.....	64.90	65.30	.....	65.10	.....	64.20
7	51.72	61.18	.....	65.00	64.60	.....	65.30	.....	61.40
8	51.74	62.32	.....	65.10	64.60	.....	65.30	.....	60.90
9	52.00	62.57	.....	65.05	64.65	.....	65.25	.....	60.60
10	51.82	62.72	.....	65.05	64.70	.....	65.35	.....	60.40

S19/53-27aaa1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	51.68	62.87	.....	65.10	63.30	.....	64.25	.....	.....
12	51.70	62.86	.....	65.05	63.40	.....	65.50	.....	56.70
13	52.30	62.98	.....	65.10	65.90	.....	65.60	63.80	54.00
14	55.58	63.07	.....	64.85	65.80	.....	65.60	62.95	54.20
15	52.83	63.20	.....	64.95	65.80	.....	65.65	62.10	62.00
16	52.75	63.00	.....	65.25	63.15	.....	65.75	62.60	57.90
17	52.55	63.41	.....	62.80	63.65	.....	65.75	63.00	56.20
18	52.75	63.30	.....	62.95	66.25	.....	65.75	62.90	55.30
19	52.57	63.52	.....	65.25	66.35	.....	65.80	62.90	55.60
20	52.36	63.47	.....	65.40	65.55	.....	65.85	62.70	55.30
21	52.07	.....	.....	65.40	.....	.....	65.85	62.65	55.05
22	51.89	.....	.....	65.35	.....	.....	.....	66.60	55.00
23	53.00	.....	58.95	65.35	.....	.....	.....	65.40	56.60
24	.....	.....	58.85	65.70	.....	65.25	.....	63.30	58.00
25	55.00	.....	.....	65.45	.....	64.50	.....	62.80	58.10
26	55.35	.....	61.45	65.40	.....	64.25	.....	62.80	59.50
27	55.45	.....	61.95	65.40	.....	66.10	.....	62.60	59.80
28	55.56	.....	62.40	65.15	.....	64.00	.....	.....	.....
29	55.72		63.35	65.20	.....	64.70	.....	65.00	.....
30	.....		64.10	64.25	.....	65.00	.....	64.00	.....
31	.....		64.30		.....		.....	66.15	

* No record for October, November, and December.

S19/53-32aaa1. Shurtliff (State Engineer No. 57). Drilled unused well, diameter 16 inches depth 300 feet. Highest water level 24.68 below lsd, Dec. 30-31, 1954; lowest 26.89 below lsd, Feb. 17, 1949. Records available: 1949-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.66	25.59	25.45	25.42	25.28	25.19	25.12	25.11	25.05	24.96	24.89	24.78
2	25.64	25.59	25.46	25.42	25.28	25.18	25.12	25.08	25.05	24.96	24.89	24.80
3	25.64	25.58	25.46	25.42	25.26	25.17	25.12	25.08	25.04	24.96	24.89	24.80
4	25.64	25.58	25.46	25.42	25.26	25.16	25.12	25.08	25.04	24.96	24.88	24.78
5	25.64	25.57	25.46	25.41	25.25	25.17	25.12	25.08	25.04	24.96	24.87	24.78
6	25.63	25.57	25.45	25.40	25.25	25.17	25.11	25.08	25.03	24.95	24.87	24.78
7	25.62	25.57	25.45	25.38	25.24	25.16	25.11	25.08	25.03	24.95	24.87	24.78
8	25.61	25.56	25.43	25.38	25.23	25.15	25.11	25.08	25.03	24.95	24.87	24.77
9	25.61	25.55	25.43	25.37	25.23	25.16	25.11	25.07	25.02	24.94	24.86	24.78
10	25.61	25.55	25.41	25.37	25.23	25.16	25.11	25.07	25.02	24.94	24.87	24.77
11	25.61	25.55	25.42	25.37	25.24	25.15	25.11	25.06	25.02	24.93	24.87	24.75
12	25.60	25.54	25.42	25.35	25.25	25.14	25.11	25.06	25.03	24.94	24.86	24.75
13	25.60	25.53	25.41	25.35	25.24	25.15	25.11	25.06	25.02	24.94	24.86	24.75
14	25.60	25.53	25.41	25.35	25.24	25.14	25.11	25.06	25.01	24.93	24.86	24.75
15	25.60	25.53	25.40	25.34	25.23	25.14	25.11	25.05	25.01	24.93	24.87	24.75
16	25.60	25.53	25.39	25.33	25.22	25.14	25.11	25.05	25.01	24.93	24.86	24.74
17	25.59	25.52	25.40	25.32	25.22	25.14	25.11	25.05	25.00	24.92	24.85	24.73
18	25.59	25.53	25.38	25.32	25.21	25.14	25.11	25.04	25.00	24.92	24.85	24.73
19	25.57	25.53	25.38	25.31	25.21	25.14	25.11	25.04	25.00	24.92	24.84	24.71
20	25.57	25.52	25.37	25.31	25.20	25.14	25.11	25.04	24.99	24.92	24.83	24.71
21	25.57	25.52	25.36	25.30	25.21	25.13	25.11	25.03	24.98	24.91	24.83	24.70
22	25.58	25.51	25.35	25.30	25.20	25.13	25.11	25.03	24.99	24.91	24.82	24.70
23	25.59	25.50	25.35	25.31	25.20	25.13	25.11	25.03	24.99	24.92	24.82	24.71
24	25.60	25.49	25.35	25.30	25.19	25.12	.....	25.02	24.98	24.91	24.81	.....
25	25.60	25.48	25.37	25.30	25.18	25.12	.....	25.02	24.98	24.91	24.80	.....
26	25.61	25.47	25.38	25.30	25.18	25.12	.....	25.02	24.97	24.91	24.80	.....
27	25.61	25.48	25.38	25.29	25.18	25.12	.....	25.02	24.96	24.90	24.79	24.71
28	25.60	25.46	25.38	25.28	25.17	25.12	25.07	25.02	24.96	24.90	24.81	24.70
29	25.60		25.40	25.28	25.16	25.12	25.08	25.06	24.96	24.90	24.81	24.69
30	25.59		25.41	25.28	25.19	25.11	25.10	25.05	24.96	24.89	24.79	24.68
31	25.59		.....		25.20		25.10	25.05		24.89		24.68

S19/53-33daa1. Hughes & Harmer (State Engineer No. 56). Drilled unused artesian well, diameter 12 inches. Highest water level 56.65 above lsd, June 17, 1948; lowest 29.15 above lsd, Jan. 21, 1953. Records available: 1948-53. No measurement made in 1954.

S20/53-5bc1. Owner unknown (State Engineer No. 34). Drilled unused well, diameter 6 inches, depth 471 feet. Highest water level 4.82 below lsd, Apr. 1, 1947; lowest 8.63 below lsd, Feb. 15, 1950. Records available: 1947-54. Feb. 24, 7.42; July 23, 8.18; Aug. 28, 8.50; Oct. 13, 8.15; Nov. 13, 8.25; Dec. 13, 7.80; Dec. 27, 8.35.

S20/53-20aaa1. Horgan. Dug domestic well, size 3 by 5 feet, depth 18 feet. Highest water level 14.30 below lsd, May 28, 1953; lowest 17.50 below lsd, Nov. 21, 1950, Nov. 13, 1954. Records available: 1949-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 24	16.50	Apr. 22	16.40	July 23	16.70	Oct. 13	17.40
Feb. 23	16.40	May 23	16.45	Aug. 28	16.69	Nov. 13	17.50
Mar. 23	16.40	June 23	16.48	Sept. 28	17.30	Dec. 13	17.30

S20/53-24caa1. Ray Thomas (State Engineer No. 40). Drilled unused artesian well, diameter 10 inches, depth 570 feet. Highest water level 25.10 below lsd, Mar. 17, 1945; lowest 42.38 below lsd, Sept. 4, 1953. Records available: 1948-54.

Daily noon water level from recorder graph

Jan. 22	38.51	Nov. 8	40.23	Nov. 26	40.07	Dec. 14	39.93
Oct. 22	40.37	9	40.20	27	40.03	15	39.98
23	40.41	10	40.21	28	40.00	16	39.97
24	40.39	11	40.20	29	40.08	17	39.95
25	40.39	12	40.18	30	40.06	18	39.93
26	40.40	13	40.15	Dec. 1	40.00	19	39.90
27	40.38	14	40.13	2	39.96	20	39.89
28	40.36	15	40.19	3	40.03	21	39.87
29	40.35	16	40.20	4	40.00	22	39.87
30	40.31	17	40.16	5	39.96	23	39.85
31	40.31	18	40.14	6	39.95	24	39.87
Nov. 1	40.32	19	40.13	7	39.95	25	39.88
2	40.32	20	40.14	8	39.93	26	39.91
3	40.32	21	40.14	9	39.97	27	39.88
4	40.28	22	40.12	10	40.03	28	39.83
5	40.25	23	40.11	11	39.99	29	39.85
6	40.25	24	40.09	12	39.95	30	39.83
7	40.25	25	40.10	13	39.93	31	39.79

S21/53-1adc1. U. S. Bureau of Land Management (State Engineer No. 41). Drilled unused water-table well, diameter 10 inches, depth 74 feet. Highest water level 25.67 below lsd, May 21, 1952; lowest 27.00 below lsd, Nov. 18, 1948. Records available: 1945, 1947-53. Measurement discontinued.

S21/53-24aa1. Townsend (State Engineer No. 42). Drilled unused well, diameter 10 inches, depth 120 feet. Highest water level 21.27 below lsd, May 21, 1952; lowest 22.72 below lsd, Nov. 29, 1949. Records available: 1947-53. No measurement made in 1954.

S21/54-15aca1. Rooker (State Engineer No. 23). Drilled unused artesian well, diameter 20 to 14 inches, depth 506 feet, 14-inch casing to 130. Highest water level 27.42 below lsd, Apr. 1, 1947; lowest 39.20 below lsd, Oct. 13, 1954. Records available: 1946-54. July 23, 38.30; Aug. 15, 38.40; Oct. 13, 39.20; Nov. 13, 38.10; Dec. 13, 37.80.

S21/54-19dd2. Turner (State Engineer No. 46). Drilled unused well, diameter 10 inches, depth 76 feet. Highest water level 35.45 below lsd, Nov. 28, 1954; lowest 37.86 below lsd, Dec. 13, 1952. Records available: 1947-54. May 28, 37.20; Aug. 28, 35.65; Sept. 28, 35.70; Oct. 28, 35.68; Nov. 28, 35.45; Dec. 27, 35.75.

S21/54-28bd1. Bowman (State Engineer No. 50). Drilled unused well, diameter 10 inches, depth 140 feet. Highest water level 18.65 below lsd, Nov. 18, 1948; lowest 20.72 below lsd, July 26-Aug. 1, 1953. Records available: 1946-54.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.63	20.66	20.57	.....	.....	20.56	20.39	20.56	20.62	.....	20.46	20.44
2	20.62	20.67	20.57	.....	.....	20.56	20.46	20.52	20.63	.....	20.49	20.44
3	20.62	20.67	20.57	.....	.....	20.56	20.43	20.49	20.60	.....	20.50	20.36
4	20.61	20.67	20.57	.....	.....	20.56	20.38	20.48	20.60	.....	20.55	20.43
5	20.60	20.67	20.57	.....	.....	20.55	20.40	20.53	20.63	.....	20.55	20.42
6	20.59	20.67	20.57	.....	.....	20.60	20.39	20.53	20.62	.....	20.54	20.44
7	20.59	20.66	20.57	.....	.....	20.60	20.42	20.59	20.61	.....	20.53	20.45
8	20.58	20.64	20.57	.....	.....	20.53	20.43	20.58	20.62	.....	20.55	20.48
9	20.58	20.62	20.57	.....	.....	20.49	20.44	20.58	20.62	.....	20.55	20.44
10	20.58	20.60	20.57	.....	.....	20.45	20.44	20.61	20.61	.....	20.54	20.52
11	20.57	20.58	20.57	.....	.....	20.28	20.45	20.63	20.59	.....	20.56	20.60
12	20.57	20.57	20.57	.....	.....	20.24	20.43	20.62	20.57	.....	20.56	20.60
13	20.57	20.56	20.57	.....	.....	20.26	20.44	20.61	20.57	.....	20.55	20.65
14	20.57	20.56	20.57	.....	.....	20.32	20.45	20.60	20.58	.....	20.51	20.64
15	20.57	20.56	20.57	.....	.....	20.32	20.45	20.60	20.58	.....	20.51	20.64

S21/54-28bd1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	20.57	20.56	20.56	.....	.....	20.32	20.45	20.58	20.56	.....	20.56	20.65
17	20.57	20.56	20.56	.....	.....	20.33	20.46	20.57	20.59	.....	20.56	20.66
18	20.57	20.56	20.56	.....	.....	20.38	20.44	20.59	20.60	.....	20.52	20.63
19	20.57	20.56	20.55	.....	.....	20.41	20.45	20.60	20.60	.....	20.51	20.62
20	20.58	20.56	20.55	.....	.....	20.45	20.44	20.57	20.62	.....	20.51	20.62
21	20.58	20.56	20.55	.....	.....	20.43	20.48	20.61	20.59	.....	20.53	20.61
22	20.59	20.57	20.54	.....	.....	20.45	20.46	20.62	20.61	.....	20.51	20.61
23	20.60	20.57	20.54	.....	.....	20.40	20.49	20.64	20.61	20.44	20.51	20.59
24	20.60	20.57	.....	.....	.....	20.38	20.50	20.62	20.60	20.44	20.51	20.57
25	20.60	20.57	.....	.....	20.55	20.37	20.51	20.61	20.61	20.49	20.51	20.57
26	20.62	20.57	.....	.....	20.56	20.38	20.51	20.62	20.60	20.49	20.50	20.62
27	20.63	20.57	.....	.....	20.56	20.40	20.50	20.63	20.57	20.47	20.48	20.62
28	20.64	20.57	.....	.....	20.56	20.41	20.50	20.64	20.54	20.48	20.48	20.60
29	20.65		.....	.....	20.54	20.39	20.52	20.65	.....	20.48	20.45	20.59
30	20.66		.....	.....	20.56	20.37	20.56	20.63	.....	20.49	20.48	20.58
31	20.66		.....		20.59		20.56	20.62		20.47		20.55

Ralston Valley

5/44-32bb1. Owner unknown. Dug unused water-table well, depth 18 feet, cribbed with wood. Highest water level 12.17 below lsd, May 12, 1948; lowest 12.85 below lsd, Sept. 11, 1951. Records available: 1948-54. Mar. 16, 12.19; Sept. 10, 12.59.

White River Valley
[See also White Pine County]

9/61-7b1. Lloyd Sorenson. Dug stock water-table well, diameter 4 feet, depth 43 feet. Highest water level 30.24 below lsd, May 22, 1952; lowest 31.1 below lsd, Sept. 15, 1945. Records available: 1945, 1947-54. Sept. 14, 30.40.

10/60-36b1. U. S. Bureau of Land Management. Drilled stock well, diameter 8 inches, reported depth 80 feet. Highest water level 41.07 below lsd, Sept. 14, 1954; lowest 41.62 below lsd, Sept. 18, 1953. Records available: 1947-54. Sept. 14, 41.07.

Ormsby County

Eagle Valley

15/20-8b10. M. W. Johnstone. Dug unused water-table well, diameter 5 feet, depth 18 feet, cased with brick. Highest water level 0.98 below lsd, Mar. 13, 1952; lowest 10.95 below lsd, Sept. 10, 1953. Records available: 1946, 1948-54. Feb. 23, 6.27; Sept. 27, 8.15.

15/20-8c1. J. Harrison. Dug domestic water-table well, diameter 36 inches, depth 10 feet, cased to 10. Highest water level 2.14 below lsd, Mar. 13, 1952; lowest 7.36 below lsd, Sept. 10, 1953. Records available: 1946, 1948-54. Feb. 23, 4.92; Sept. 27, 7.14.

15/20-9a7. Jesse James. Drilled unused well, diameter 6 inches, depth 63 feet. Highest water level 9.62 below lsd, Mar. 13, 1952; lowest 13.74 below lsd, Sept. 26, 1950. Records available: 1948-54. Feb. 23, 12.22; Sept. 27, 13.14.

15/20-17a1. Simone Lompa & Rinaldo Cremetti. Drilled unused well, diameter 10 inches reported depth 590 feet, reported cased to 590. Highest water level 3.91 below lsd, Mar. 23, 1954; lowest 12.04 below lsd, Sept. 26, 1950. Records available: 1946, 1948-54. Mar. 23, 3.91; Sept. 27, 11.84.

15/20-17c1. State Childrens' Home. Drilled irrigation well, diameter 18 to 12 to 10 inches, depth 595 feet, cased to 595. Highest water level 1.84 below lsd, Mar. 13, 1952; lowest 12.77 below lsd, Sept. 18, 1952. Records available: 1946, 1948-52. No measurement made in 1954.

Pershing County

Buena Vista Valley

30/35-4c1. Gallio. Dug stock water-table well, size 4 by 4 feet, depth 46 feet, cribbed with wood. Highest water level 24.26 below lsd, Sept. 9, 1952; lowest 39.55 below lsd, Mar. 14, 1949. Records available: 1947-54. Mar. 7, 35.50; Sept. 15, 38.21.

30/35-27b1. Neill Talcott. Drilled well, diameter 8 inches, reported depth 100 feet, cased to 100, perforations 25-100. Highest water level 21.91 below lsd, Jan. 7, 1948; lowest 28.18 below lsd, Mar. 29, 1952. Records available: 1948-50, 1952-54. Mar. 7, 26.60; Sept. 15, 27.42.

Grass Valley
[See also Humboldt County]

32/38-18b1. U. S. Bureau of Land Management. Drilled stock well, diameter 6 inches, depth 125 feet, reported cased to 130. Land-surface datum is 4,529 feet above msl. Highest water level 76.14 below lsd, Sept. 17, 1953; lowest 76.48 below lsd, Sept. 20, 1951. Records available: 1946-54. Sept. 8, 76.16.

32/38-36b1. Fred Kerlee. Drilled unused well, diameter 12 inches, reported depth 110 feet, cased to 100, perforations 65-100. Land-surface datum is 4,604 feet above msl. Highest water level 78.10 below lsd, Oct. 25, 1947; lowest 80.44 below lsd, Sept. 8, 1954. Records available: 1947-54. Sept. 8, 80.44.

33/37-24a1. Lloyd Sweeney. Dug and drilled unused well, size 6 by 7½ feet to 11 feet, 10 inches to 63 feet. Land-surface datum is about 4,400 feet above msl. Highest water level 1.80 below lsd, Apr. 24, 1946; lowest 13.56 below lsd, Oct. 19, 1950. Records available: 1945-54. Sept. 8, 13.30.

33/37-24d1. Lloyd Sweeney. Drilled irrigation well, diameter 14 inches, depth 73 feet. Land-surface datum is 4,414 feet above msl. Highest water level 9.99 below lsd, Apr. 24, 1946; lowest 16.57 below lsd, Oct. 19, 1950. Records available: 1945-54. Sept. 8, 16.05.

33/38-32b1. U. S. Bureau of Land Management. Drilled stock well, diameter 6 inches, depth 54 feet. Land-surface datum is 4,431 feet above msl. Highest water level 28.17 below lsd, Aug. 18, 1945; lowest 31.08 below lsd, Sept. 20, 1951. Records available: 1945-54. Sept. 8, 29.90.

34/37-22a1. J. Ballard. Drilled unused well, diameter 6 inches, depth 50 feet. Land-surface datum is 4,329 feet above msl. Highest water level 9.85 below lsd, Mar. 19, 1947; lowest 12.97 below lsd, Sept. 20, 1951. Records available: 1946-54. Sept. 8, 11.97.

Humboldt River Valley
[See also Elko, Humboldt, and Lander Counties]

29/33-33c1. Southern Pacific Co. Drilled industrial and municipal well, diameter 12 inches, reported depth 432 feet. Land-surface datum is 4,264 feet above msl. Highest water level 65.16 below lsd, May 19, 1947; lowest 73.30 below lsd, Oct. 21, 1953. Records available: 1945-54. Mar. 7, 71.12; Sept. 20, 72.59; Nov. 3, 71.97.

32/33-28d1. Cliff and Cecil Campbell. Humboldt. Drilled irrigation well, diameter 14 inches, reported depth 288 feet, reported cased to 236. Highest water level 34.37 below lsd, Apr. 26, 1950; lowest 35.72 below lsd, May 15, 1952. Records available: 1950-54. Mar. 11, 34.95; Sept. 20, 35.60.

Washoe County

Steamboat Valley

17/20-5d1. Feretto Estate. Dug domestic water-table well in weathered andesite, depth 17 feet. Highest water level 13.09 below lsd, May 28, 1954; lowest 16.98 below lsd, Dec. 23, 1946. Records available: 1942-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	14.58	Apr. 29	14.66	Sept. 27	16.53	Nov. 30	15.61
Feb. 26	15.32	May 28	13.09	Nov. 1	16.20	Dec. 29	15.56
Mar. 24	15.22	Aug. 27	15.67				

Sun Valley

20/20-17ba1. H. L. Gepford. Drilled unused well, diameter 6 inches, depth 187 feet. Highest water level 88.12 below lsd, Feb. 2, 1948; lowest 93.22 below lsd, Apr. 25, 1950. Records available: 1948-54. Sept. 28, 89.70.

20/20-18aa1. H. L. Gepford. Drilled unused well, diameter 6 inches, reported depth 164 feet. Highest water level 29.09 below lsd, Sept. 18, 1948; lowest 30.58 below lsd, Jan. 2, 1952. Records available: 1948-54. Sept. 28, 29.85.

20/20-30ab2. Frank Nelson. Drilled domestic well, diameter 6 inches, depth 50 feet. Highest water level 13.53 below lsd, June 24, 1952; lowest 20.20 below lsd, Oct. 23, 1950. Records available: 1948-54. Sept. 28, 18.31.

Truckee Meadows

18/19-1cd1. L. H. Pickens. Drilled domestic well, diameter 6 inches, reported depth 110 feet. Land-surface datum is 4,585.73 feet above msl. Highest water level 11.84 below lsd, Oct. 18, 1949; lowest 20.64 below lsd, May 27, 1949. Records available: 1948-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	19.32	Apr. 29	19.33	Aug. 27	13.25	Nov. 1	14.15
Feb. 26	19.28	May 28	17.07	Sept. 27	13.45	Dec. 29	17.13
Mar. 24	19.97	June 30	15.15				

18/19-12ad1. F. P. Quinn. Drilled unused well, diameter 6 inches, depth 26 feet. Land-surface datum is 4,580.1 feet above msl. Highest water level 14.18 below lsd, May 25, 1949; lowest dry, every spring. Records available: 1949-50, 1952-53. No measurement made in 1954.

18/19-12ad2. F. P. Quinn. Drilled domestic and irrigation well, diameter 6 inches, reported depth 135 feet. Land-surface datum is 4,580.1 feet above msl. Highest water level 15.35 below lsd, May 12, 1949; lowest 38.99 below lsd, Mar. 24, 1954. Records available: 1949-54. Jan. 29, 35.14; Feb. 26, 36.49; Mar. 24, 38.99; May 28, 38.56; June 30, 36.57; Aug. 27, 36.20.

18/19-12bd2. Mrs. B. Menzi. Drilled domestic well, diameter 6 inches, depth 86 feet. Land-surface datum is 4,600 feet above msl. Highest water level 26.28 below lsd, Oct. 18, 1949; lowest 35.27 below lsd, Mar. 24, 1954. Records available: 1949-54.

Jan. 29	33.08	Apr. 29	34.59	June 30	32.94	Sept. 27	31.00
Feb. 26	33.89	May 28	33.83	Aug. 27	31.51	Dec. 29	33.21
Mar. 24	35.27						

18/19-12cb1. Godschalk. Drilled domestic well, diameter 6 inches, reported depth 239 feet. Land-surface datum is 4,721 feet above msl. Highest water level 127.64 below lsd, Nov. 6, 19, 24, 1949; lowest 140.97 below lsd, Apr. 29, 1954. Records available: 1949-54.

Jan. 29	135.22	Apr. 12	140.19	June 30	132.63	Sept. 27	132.78
Feb. 26	134.34	29	140.97	Aug. 27	134.39	Dec. 29	131.20
Mar. 24	137.26	May 28	131.85				

18/19-12da1. W. W. Caffrey. Drilled domestic and stock well, diameter 8 inches, reported depth 100 feet. Land-surface datum is 4,604.5 feet above msl. Highest water level 13.10 below lsd, Sept. 12, 1950; lowest 28.35 below lsd, Mar. 14, 1950. Records available: 1949-50, 1953-54. Sept. 27, 14.56.

18/19-13aa1. W. W. Caffrey. Dug domestic water-table well, diameter 4 feet, depth 39 feet. Land-surface datum is 4,651.2 feet above msl. Highest water level 3.94 below lsd, Sept. 12, 1949; lowest 31.05 below lsd, Apr. 18, 1950. Records available: 1949-53. No measurement made in 1954.

18/19-13ab1. Kendrick Johnson. Dug irrigation water-table well, depth 11 feet. Highest water level 1.90 below lsd, Jan. 18, 1950; lowest 4.62 below lsd, Apr. 18, 1950. Records available: 1949-51, 1953-54. Sept. 27, 3.29.

18/20-7bc1. Paul Faulstick. Drilled domestic well, diameter 6 inches, reported depth 118 feet. Land-surface datum is 4,558.41 feet above msl. Highest water level 6.09 below lsd, Sept. 25, 1951; lowest 14.34 below lsd, Apr. 28, 1953. Records available: 1949-54. Feb. 26, 13.87; Mar. 24, 14.28; Apr. 29, 13.50; May 28, 10.69; Sept. 27, 7.33.

18/20-7cb1. Emery Kery. Drilled domestic well, diameter 6 inches, reported depth 109 feet. Land-surface datum is 4,589.95 feet above msl. Highest water level 19.69 below lsd, Dec. 7, 1948; lowest 32.03 below lsd, Mar. 24, 1954. Records available: 1948-54.

Jan. 29	30.33	Apr. 29	31.53	July 26	24.23	Nov. 1	23.62
Feb. 26	31.86	May 28	26.14	Aug. 27	22.71	Dec. 29	28.10
Mar. 24	32.03	June 30	24.57	Sept. 27	22.90		

18/20-7dc1. Mrs. Martin Estate. Sierra Manor subdivision. Drilled unused well, diameter 12 inches, reported depth 203 feet. Land-surface datum is 4,568 feet above msl. Highest water level 8.12 below lsd, Sept. 25, 1951; lowest 15.88 below lsd, Apr. 18, 1950. Records available: 1949-54.

Jan. 29	12.80	Apr. 29	14.10	July 26	12.30	Nov. 1	11.08
Feb. 26	13.74	May 28	12.10	Aug. 27	11.47	30	11.54
Mar. 24	14.30	June 30	12.32	Sept. 27	10.66	Dec. 29	12.31

18/20-20a1. Louis Damonte. Dug unused water-table well, diameter 36 inches, depth 23 feet. Highest water level 1.83 below lsd, Sept. 19, 1952; lowest 11.90 below lsd, Mar. 29, 1949. Records available: 1942-54.

18/20-20a1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	7.30	Apr. 29	6.89	July 26	5.08	Nov. 30	5.65
Feb. 26	7.95	May 28	5.37	Aug. 27	2.45	Dec. 29	7.18
Mar. 24	8.50	June 30	4.48	Sept. 27	3.02		

19/19-11b1. Reno High School. Drilled unused water-table well, diameter 4 inches, depth 49 feet. Highest water level 28.48 below lsd, Aug. 3, 1949; lowest 33.10 below lsd, Feb. 28, 1950. Records available: 1949-54. Feb. 26, 32.81; Mar. 24, 32.79; Apr. 29, 32.84; May 28, 31.75; Sept. 28, 30.00; Nov. 30, 31.61; Dec. 29, 32.17.

19/19-16c1. Chrissie Caughlin. Dug unused well, diameter 4 feet, depth 45 feet. Highest water level 35.74 below lsd, June 24, 1952; lowest 42.30 below lsd, Jan. 23, 1947. Records available: 1942-54.

Jan. 29	41.90	Apr. 29	39.73	July 26	37.44	Nov. 1	40.24
Feb. 26	e42.00	May 28	37.36	Aug. 27	38.03	30	40.82
Mar. 24	e42.30	June 30	37.74	Sept. 27	38.77	Dec. 29	41.10

e Estimated.

White Pine County

Lake Valley
[See also Lincoln County]

10/65-36d2. McCulloch. Drilled unused well, diameter 10 inches, depth 58 feet. Highest water level 22.53 below lsd, Mar. 21, 1949; lowest 28.74 below lsd, Sept. 19, 1949. Records available: 1947-54. Sept. 9, 25.97.

Newark Valley

18/55-31d1. Owner unknown. Dug stock water-table well, diameter 36 inches, depth 43 feet. Highest water level 33.19 below lsd, Sept. 15, 1954; lowest 34.65 below lsd, Dec. 21, 1946. Records available: 1946-54. Sept. 15, 33.19.

19/56-30d2. Don Eldridge. Dug stock water-table well, diameter 42 inches, depth 37 feet, cribbed with concrete. Highest water level 31.63 below lsd, Oct. 1, 1952; lowest 33.38 below lsd, June 19, 1950. Records available: 1948-54. Sept. 16, 31.88.

20/55-10d1. U. S. Bureau of Land Management. Dug stock water-table well, diameter 36 inches, depth 22 feet. Highest water level 8.08 below lsd, Mar. 24, 1949; lowest 9.29 below lsd, Sept. 15, 1954. Records available: 1948-54. Mar. 9, 8.95; Sept. 15, 9.29.

21/55-9b1. R. W. Hooper. Dug domestic water-table well, diameter 5 feet, depth 34 feet. Highest water level 11.75 below lsd, Mar. 24, 1949; lowest 19.15 below lsd, Sept. 19, 1950, Sept. 15, 1953. Records available: 1948-54. Mar. 9, 13.86; Sept. 15, 19.06.

Spring Valley

13/67-8d1. A. Schaurman. Dug stock water-table well, diameter 36 inches, reported depth 45 feet. Highest water level 11.70 below lsd, Mar. 29, 1949; lowest 15.11 below lsd, Sept. 10, 1952. Records available: 1947-54. Sept. 15, 14.09.

15/66-13d1. J. P. Johanson. Drilled domestic well, diameter 6 inches, depth 82 feet. Highest water level 13.68 below lsd, Sept. 10, 1952; lowest 22.15 below lsd, Sept.12, 1951. Records available: 1947-54. Sept. 14, 20.74.

17/68-6d1. U. S. Bureau of Land Management. Dug stock water-table well, diameter 4 feet, depth 28 feet. Highest water level 21.69 below lsd, Mar. 18, 1950; lowest 24.13 below lsd, Sept. 10, 1952. Records available: 1948-54. Sept. 14, 23.83.

18/68-31a1. Delbert Eldridge. Drilled irrigation well, diameter 10 to 6 inches, reported depth 220 feet. Highest water level 41.46 below lsd, Aug. 6, 1948; lowest 43.97 below lsd, Mar. 14, 1951. Records available: 1948-53. No measurement made in 1954.

Steptoe Valley

15/64-7a1. Lloyd Sorenson. Drilled irrigation well, diameter 16 inches, reported depth 200 feet. Highest water level 32.70 below lsd, Mar. 4, 1953; lowest 39.06 below lsd, Mar. 14, 1951. Records available: 1948-54. Mar. 10, 35.42; Sept. 14, 35.47.

16/63-1b1. Owner unknown. Drilled unused well, diameter 6 inches. Highest water level 59.10 below lsd, Mar. 10, 1954; lowest 68.58 below lsd, Sept. 12, 1951. Records available: 1949-54. Mar. 10, 59.10; Sept. 15, 61.68.

16/63-14a1. Bill Goodman. Drilled unused well, diameter 10 inches, reported depth 130 feet. Highest water level 21.56 below lsd, Mar. 4, 1953; lowest 28.54 below lsd, Oct. 3, 1949. Records available: 1947, 1949-54. Mar. 10, 22.16; Sept. 15, 23.57.

19/63-12a1. U. S. Geol. Survey. Drilled test well, diameter 12 to 8 inches, reported depth 915 feet, reported cased to 540. Highest water level 13.81 below lsd, Mar. 4, 1953; lowest 21.20 below lsd, July 5, 1949. Records available: 1949-54. Sept. 15, 15.03.

20/64-32c2. U. S. Geol. Survey. Drilled test well, diameter 10 inches, depth 110 feet, reported cased to bottom. Highest water level 13.56 below lsd, June 20, 1950; lowest 14.56 below lsd, Sept. 30, 1952. Records available: 1918, 1949-54. Sept. 15, 14.27.

White River Valley
[See also Nye County]

11/61-35a1. Public domain. Drilled stock well, diameter 6 inches. Highest water level 10.49 below lsd, Sept. 18, 1953; lowest 13.06 below lsd, Sept. 11, 1951. Records available: 1947-54. Sept. 14, 11.81.

12/61-34a1. U. S. Bureau of Land Management. Drilled stock well, diameter 7 inches, depth 72 feet. Highest water level 57.65 below lsd, Dec. 15, 1949; lowest 60.52 below lsd, May 22, 1952. Records available: 1947-54. Sept. 14, 60.32.

12/62-18d1. U. S. Geol. Survey. Drilled test and observation well, diameter 6 inches, depth 108 feet, cased to 105. Highest water level 43.56 below lsd, Sept. 9, 1952; lowest 50.73 below lsd, Dec. 18, 1947. Records available: 1947-53. No measurement made in 1954.

12/62-29a1. Jim Oxborrow. Drilled stock well, diameter 6 inches. Land-surface datum is 5,546.29 feet above msl. Highest water level 20.16 below lsd, July 17, 1947; lowest 29.08 below lsd, Sept. 13, 1950. Records available: 1947-54. Sept. 14, 25.38.

12/62-31d2. Carter Bros. Dug stock water-table well, size 4 by 4 feet, depth 16 feet. Land-surface datum is 5,516.25 feet above msl. Highest water level 11.78 below lsd, Dec. 2, 1947; lowest 16.30 below lsd, Sept. 11, 1951. Records available: 1947-54. Sept. 14, 16.5, nearby well being pumped.

12/62-33a5. Wayne Gardner. Lund. Dug domestic water-table well, size 4 by 4 feet, depth 31 feet. Land-surface datum is 5,578.45 feet above msl. Highest water level 19.39 below lsd, Nov. 6, 1947; lowest 25.44 below lsd, Mar. 15, 1950. Records available: 1947-54. Sept. 14, 25.35.

NEW MEXICO

By H. O. Reeder, R. W. Mower, L. J. Bjorklund, J. W. Hood, U. N. Benge, J. T. Hollander, and J. W. Howard

Scope of Water-Level Program

The measurement of water levels in observation wells in most of the principal areas in New Mexico where ground water is used for irrigation was continued in 1954 as a part of the program of investigations of ground-water conditions made in cooperation with the State Engineer Office. These investigations have been in progress in certain of the irrigated areas since 1925. The observation-well program has been expanded from time to time to obtain information on changes in water level in newly developed areas.

In 1954, measurements were made in about 1,440 wells in January or February and, in 1955, in about 1,490 wells during the same period. Measurements made at this time of year, just prior to the start of the irrigation season, provide the best information for a comparison of the year-to-year change in water level. The annual measurements made in January or February 1954 and 1955 were used to prepare the accompanying maps showing changes in water level in the various areas; measurements made only annually have not been tabulated in the water-level reports since 1950. About 1,660 additional measurements of water level, mostly on a bimonthly basis, were made in 374 wells to determine the seasonal changes in water level. Gages were maintained on 33 wells to record details of water-level fluctuation. The measurements made on a bimonthly basis and data obtained from the recording gages are tabulated in this report. All measurements, except the mean monthly and mean annual artesian heads in 7 wells in the Roswell basin, are given in feet above or below land-surface datum, which approximates the land surface at the well. The mean artesian heads are given in feet above mean sea level. Measurements of water level in observation wells in the Virden Valley in Hidaigo County were made by the Arizona office of the U. S. Geological Survey.

Acreage Irrigated

About 820,000 acres is estimated to have been irrigated in New Mexico in 1954. An estimated 275,000 acres was irrigated entirely with surface water, 400,000 acres entirely with ground water (an increase of 50,000 acres over 1953), and 145,000 acres with a combination of ground water and surface water. Within the ground-water basins declared by the State Engineer, an estimated 335,000 acres was irrigated entirely with ground water in 1954; and an additional 40,000 acres received supplemental irrigation with ground water. The 11 declared basins are the Roswell artesian basin in Chaves and Eddy Counties, the Carlsbad basin in Eddy County, the Hondo basin in Lincoln County, the Penasco basin in Otero and Chaves Counties, the Lea County basin, the Portales basin in Roosevelt County, the Estancia Valley in Torrance and Santa Fe Counties, the Hot Springs artesian basin in Sierra County, the Mimbres basin in Luna County, and the Animas Valley and the Virden Valley in Hidalgo County.

Other important but undeclared areas in which ground water is being used for irrigation include the expanding developments in the vicinity of Clovis in Curry County, the Causey-Lingo area in southern Roosevelt County, the Sunshine Valley in the Rio Grande Valley in Taos County, the Tularosa Valley in Otero County, and the areas in the middle and lower Rio Grande Valley. Other undeclared areas in which development was not increasing so rapidly in 1954 include the House area in Quay County, the Grants-Bluewater area in Valencia County, the Playas Valley in Hidalgo County, and the Crow Flats area in Otero County. Altogether, an estimated 65,000 acres in these areas, 40,000 of which was in Curry County, was irrigated entirely with ground water in 1954. An additional 105,000 acres, mostly in the lower Rio Grande Valley in New Mexico, received supplemental ground water.

Precipitation and Pumpage

Although rainfall over most of New Mexico is seldom sufficient for successful farming, it does supplement water applied to crops by irrigation and thus may reduce the amount of water required from surface- and ground-water supplies. In 1954, precipitation over the State as a whole was 11.14 inches, about 2.7 inches below normal. This extends the period in which precipitation has been below normal to 5 consecutive years, but the deficiency in 1954 was not so

great as in the previous 4 years. Severe storms in October in the Pecos Valley ended the need for irrigation in most of the Roswell artesian basin and the Carlsbad basin for the remainder of 1954.

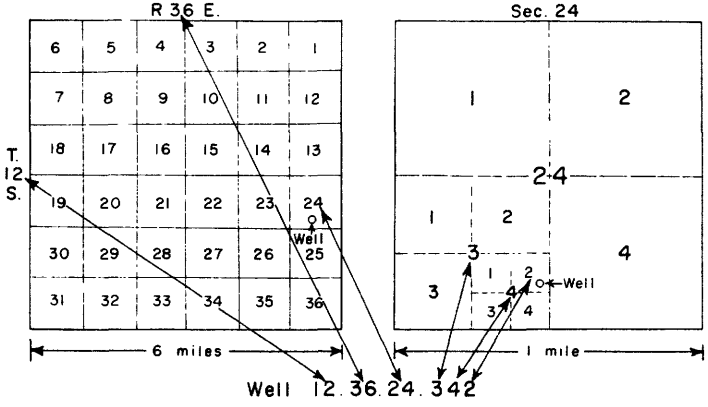
It is estimated that, in 1954, about 1,300,000 acre-feet of water was obtained from ground-water sources to irrigate 545,000 acres, 145,000 acres of which received supplemental surface water. Pumpage in 1954 was greater than in 1953, when more than 1,000,000 acre-feet was obtained from ground-water sources. Most of the increased pumpage was due to the increase in acreage irrigated. Some of it, however, was the result of an increased amount of water applied to the land in spite of the greater precipitation in 1954 than in 1953. A part of the increased use of ground water is only apparent, because some areas included in this report were not known or reported in the 1953 summary.

Summary of Changes of Water Levels

In general, water levels continued to decline in 1954 in the areas where ground water is used for irrigation, but the rates of decline were not so great as in 1953. By the end of 1954, water levels in most areas were at record-low stages. In the Carlsbad area, water levels were generally slightly higher in January 1955 than in January 1954. Detailed discussions of the changes in water levels are included in this report under the various county headings.

Well-Numbering System

The system of numbering wells in New Mexico, used in all counties except for the thermal wells in the Truth or Consequences area in Sierra County, is based on the common subdivision of public lands into sections. 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 by periods into four segments. The first segment denotes the township north or south of the New Mexico base line; the second, the range east or west of the New Mexico principal meridian; and the third, the section. In a county 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 well is north of the base line. Similarly, in a county where wells are both east and west of the meridian, an E is added to the second segment of the number if the well is east of the meridian. In counties entirely within one quadrant of the principal meridian and base line, 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 3 digits, denotes the particular 10-acre tract in which the well is situated. For this purpose, the section is divided into quarters, numbered 1, 2, 3, and 4, in the normal reading order, for the northwest, northeast, southwest, and southeast quarters. The first digit of the fourth segment gives the quarter section. 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 12.36.24.342 in Lea County is in the $NE\frac{1}{4}SE\frac{1}{4}SW\frac{1}{4}$ sec. 24, T. 12 S., R. 36 E. If a well cannot be located within a 10-acre tract, a zero is used as the third digit, and if it cannot be located 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 locate more accurately 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 whose numbers end in one or two zeros correspond to wells whose numbers in earlier reports are the same except for the omission of such 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 diagrams show the method of numbering the tracts.



Water-Level Changes, Well Descriptions, and Water-Level Measurements by Counties

Chaves County

Roswell basin. --About three-fourths of the Roswell basin lies in Chaves County and one-fourth in the northern part of Eddy County. The Roswell artesian basin as originally declared by the State Engineer in August 1931 included about 760 square miles, extending from about 8 to 12 miles west of the Pecos River to the river and from about 8 miles north of Roswell to about 6 miles south of Lakewood. The boundaries of the basin have been extended from time to time until now it contains about 3,550 square miles, extending from the original east boundary along the Pecos River westward about 25 to 50 miles and from about 25 miles north of Roswell to about 6 miles south of Lakewood, where it adjoins the Carlsbad basin. The Hondo and the Penasco basins, which extend westward from the Roswell basin along the Hondo and Penasco Valleys, were declared September 1, 1953. The area of the three declared basins is about 4,460 square miles. Ground water is discharged from the Roswell basin by both natural and artificial means. Natural discharge is by springs, by seepage to the Pecos River, and by evapotranspiration. Artificial discharge is by means of wells and drains, and it far exceeds the natural discharge. The discharge reduces the ground water in storage and is reflected by a lowering of water levels. Conversely, recharge by direct precipitation and flood runoff into sinkholes and over porous outcrops in the intake area of the artesian aquifer causes an increase in storage and a rise in water levels. The shallow-water aquifer is recharged also by return irrigation water and by leakage from the artesian aquifer. Ground water for irrigation is obtained from both shallow water-table wells and deep artesian wells. The artesian water and shallow water are closely related hydrologically, but the two classifications are considered by the State Engineer as indicating separate sources. Applications for further development in the original declared area have not been approved for artesian water since August 1931, and for shallow water since August 1937. As the declared area has been extended and closed to further appropriation of ground water from time to time, development for irrigation has ceased in the extended areas.

Precipitation in 1954 at stations in the Roswell basin was about 75 to 85 percent of normal and at stations in the plains and mountains to the west about 75 to 90 percent of normal. In the Roswell basin, precipitation was 10.18 inches at Roswell, 1.89 inches below normal; 11.53 inches at Hagerman, 2.00 inches below normal; 9.31 inches at Artesia, 2.99 inches below normal. In the plains and mountains to the west of the Roswell basin, precipitation was 15.50 inches at Mayhill, 4.68 inches below normal; and 14.93 inches at Elk, 2.48 inches below normal. More than 90 percent of the precipitation was recorded from May to October and more than 70 percent in May, August, and October at all stations. Most of the precipitation for these 3 months occurred as intense storms of 1 or 2 days' duration, resulting in floods along the tributary streams and the Pecos River.

Recharge to the basin is directly affected by the amount and rate of precipitation in the intake area. Recharge in 1954 was below normal. Only three storms in 1954 were general throughout the area and produced quantities and rates of runoff large enough to recharge the aquifer appreciably; nevertheless, recharge was probably greater than in any year since 1949. Recharge from the October storm apparently was greater than from other storms during 1954; however, the recharge was not so great as it seemed from the rises in water levels. The rises after the October storm were due not only to recharge but also to the small amount of irrigation water applied during the remainder of 1954. Because much smaller quantities of winter irrigation water were required in 1954 than in previous years, the cones of depression in the shallow-water aquifer had a longer-than-normal period in which to recover; as a consequence, the rise of water levels was greater than normal.

Records of electric power used in 1954 to pump 1,150 wells, for which there were comparable records in 1953, indicate that possibly as much as 470,000 acre-feet of water was pumped for irrigation in 1954 as compared with 460,000 acre-feet in 1953. Of this amount, an estimated 172,000 acre-feet was from shallow-water sources and 298,000 acre-feet from artesian sources. In addition, an estimated 30,000 acre-feet of ground water was used to irrigate lands in the Salt Creek-Macho Draw area of the northern extension of the Roswell basin.

The annual changes in storage of the shallow-water aquifer in 1954 were observed by measuring water levels in about 425 shallow wells in January 1954 and 1955. Measurements were also made bimonthly in about 80 of these wells, 5 of which were equipped with recording gages. The January measurements were used in preparing the maps (figs. 49 and 50) that show changes in the shallow-water levels in the Roswell basin from January 1954 to January 1955; however, only bimonthly measurements are included in this report. Measurements in wells in Eddy County appear under the heading Eddy County. Measurements of water levels in the shallow wells have been published in the annual series of water-supply papers since 1938.

From January 1954 to January 1955, water levels rose in the shallow ground-water aquifer under a large part of the Roswell basin. In general, water levels rose under the area east of U. S. Highway 285 and declined under the area west of the highway. (See figs. 49 and 50.)

Mean monthly and mean annual artesian heads in artesian wells in Roswell basin in 1954 and highest and lowest mean annual and mean monthly artesian heads, in feet above msl

Name of well	Berrendo		Berrendo-Smith		Mountain View		Orchard Park		Greenfield		Cottonwood		Artesia	
Location no.	10. 24. 9. 333		10. 24. 21. 212		11. 24. 29. 242		12. 25. 23. 110		13. 25. 27. 211		16. 25. 11. 113		18. 26. 5. 330	
1954	Days of record	Head	Days of record	Head	Days of record	Head	Days of record	Head	Days of record	Head	Days of record	Head	Days of record	Head
January	31	3556. 21	31	3555. 61	31	3552. 34	31	3521. 94	26	e3513. 75	26	e3403. 69	31	3337. 17
February	28	3555. 64	28	3554. 50	28	3551. 20	28	3508. 55	20	e3494. 34	28	3400. 33	26	e3329. 45
March	31	3555. 03	31	3552. 16	31	3548. 42	31	3485. 12	31	3468. 19	28	e3398. 24	25	e3318. 17
April	30	3551. 10	30	3547. 69	30	3542. 23	30	3467. 08	30	3444. 17	21	e3393. 06	30	3310. 08
May	31	3552. 25	31	3549. 40	31	3543. 36	31	3476. 23	23	e3457. 17	31	3391. 70	31	3309. 78
June	30	3549. 73	30	3546. 48	28	e3540. 17	30	3459. 97	22	e3433. 59	30	3386. 19	22	e3289. 18
July	31	3546. 58	31	3542. 83	19	e3535. 04	31	3444. 18	31	3416. 85	31	3376. 39	29	e3274. 20
August	31	3545. 44	31	3542. 01	22	e3533. 01	31	3448. 68	29	e3425. 32	17	e3374. 17	31	3274. 82
September	30	3547. 37	30	3544. 15	21	e3536. 77	30	3466. 21	24	e3446. 50	22	e3380. 23	24	e3293. 55
October	27	e3552. 12	31	3550. 19	21	e3544. 39	31	3507. 07	31	3495. 50	31	3386. 50	31	3318. 72
November	30	3554. 55	30	3553. 16	30	3548. 97	30	3521. 16	30	3511. 42	30	3372. 82	30	3332. 54
December	31	3556. 08	31	3554. 62	31	3551. 14	31	3523. 62	26	e3516. 67	21	e3372. 72	31	3339. 30
Mean annual		3551. 84		3549. 45		3543. 92		3485. 82		3468. 62		3386. 34		3310. 58
Mean annual	Year	Head	Year	Head	Year	Head	Year	Head	Year	Head	Year	Head	Year	Head
Highest	1942	3571. 8	1942	3571. 0	1942	3569. 6	1942	3528. 1	1941	3517. 5	1952	3399. 97	1942	3391. 9
Lowest	1954	3551. 84	1954	3549. 45	1954	3543. 92	1954	3485. 82	1954	3468. 62	1954	3386. 34	1954	3310. 58
First year of record	1927	3571. 2	1941	3566. 2	1941	3564. 2	1926	3525. 7	1941	3517. 5	1952	3399. 97	1932	3384. 6
Mean monthly	Month	Head	Month	Head	Month	Head	Month	Head	Month	Head	Month	Head	Month	Head
Highest	Dec. '26	3574. 2	Jan. '43	3574. 4	Jan. '43	3573. 7	Jan. '42	3544. 0	Jan. '42	3535. 4	Jan. '52	3413. 06	Jan. '43	3402. 1
Lowest	Aug. '54	3545. 44	Aug. '54	3542. 01	Aug. '54	3533. 01	July '54	3444. 18	July '54	3416. 85	Dec. '54	3372. 72	July '54	3274. 20
First month of record	June '26	3571. 7	June '40	3559. 7	July '40	3556. 2	Aug. '25	3525. 9	June '40	3496. 0	Apr. '51	3404. 63	Apr. '31	3377. 2

e Estimated.

Departure in 1954 from average and change from 1953 to 1954, in feet, of mean monthly and mean annual heads in artesian wells in Roswell basin

Name of well	Berrendo		Berrendo-Smith		Mountain View		Orchard Park		Greenfield		Cottonwood		Artesia	
Location no.	10.24.9.333		10.24.21.212		11.24.29.242		12.25.23.110		13.25.27.211		16.25.11.113		18.26.5.330	
	Departure from average	1953 to 1954	Departure from average	1953 to 1954	Departure from average	1953 to 1954	Departure from average	1953 to 1954	Departure from average	1953 to 1954	Departure from average	1953 to 1954	Departure from average	1953 to 1954
January	-13.1	-3.36	-12.7	-2.48	-13.3	-2.94	-11.2	-2.95	-12.4	-2.66	-6.5	-3.69	-45.8	-6.05
February	-13.5	-3.72	-13.4	-3.45	-14.0	-3.34	-20.2	-9.78	-23.4	-9.24	-5.1	-2.58	-50.4	-10.05
March	-12.9	-2.32	-12.9	-2.03	-14.0	-2.03	-31.9	-3.31	-26.3	+.28	-5.5	-3.21	-54.0	-6.13
April	-14.7	-2.90	-14.4	-3.69	-15.8	-3.87	-40.5	-8.90	-35.7	-9.71	-6.9	-2.64	-55.4	-9.14
May	-13.6	-1.81	-13.7	-2.67	-15.2	-3.68	-36.3	-18.68	-33.6	-20.32	-10.4	-6.74	-59.5	-18.36
June	-15.7	-2.05	-14.9	-2.53	-17.1	-2.92	-50.1	-22.56	-52.4	-29.73	-13.6	-9.23	-76.9	-27.72
July	-17.6	-3.67	-17.4	-4.45	-21.4	-5.03	-62.0	-16.02	-63.0	-19.34	-17.3	-11.50	-87.0	-16.50
August	-18.0	-4.44	-16.7	-4.19	-21.2	-5.20	-54.0	-4.32	-47.0	-2.66	-14.7	-8.96	-80.4	-8.31
September	-17.2	-1.89	-16.6	-2.03	-19.0	-1.51	-44.3	+3.92	-38.5	+6.82	-7.0	-1.89	-68.3	+.64
October	-14.6	+.10	-14.0	-.34	-16.2	-.22	-18.3	+9.49	-15.4	+10.84	-6.7	-1.94	-56.5	-3.31
November	-13.3	-1.04	-13.0	-.81	-14.5	-.61	-11.0	-1.44	-11.9	-3.11	-27.8	-23.33	-48.7	-6.33
December	-12.6	-1.01	-12.6	-1.22	-13.9	-1.26	-10.4	-4.59	-9.6	-4.19	-33.6	-29.18	-44.0	+5.55
Annual	-14.6	-2.34	-14.5	-2.49	-16.4	-2.68	-32.4	-6.59	-30.7	-6.92	-12.6	-8.72	-60.1	-9.73
Record began	June 1926		June 1940		July 1940		August 1925		June 1940		March 1951		April 1931	

Southward from Roswell to the Eddy County line, water levels rose under about 350 square miles and declined under about 250 square miles; they rose more than 2 feet under 26 square miles and more than 6 feet under 1 square mile; they declined more than 2 feet under 47 square miles and more than 6 feet under 2 square miles. For the 15-year period January 1940 to January 1955, water levels declined under 410 square miles and rose under only 4 square miles. During this period, water levels declined more than 5 feet under 260 square miles and more than 40 feet under 21 square miles.

In Eddy County, water levels rose from January 1954 to January 1955 under more than 250 square miles and declined under 77 square miles; they rose more than 2 feet under 57 square miles and more than 8 feet under 2 square miles; they declined more than 2 feet under 47 square miles and more than 8 feet under 2 square miles. During the 15-year period from 1940 to 1955, water levels declined under more than 290 square miles, more than 5 feet under 210 square miles, and more than 40 feet under 19 square miles; by the end of 1954 they were lower than in 1940 by as much as 50 feet west of Hagerman and by as much as 40 feet northwest of Dexter and west of Artesia.

Recording gages were maintained in 9 wells finished in the artesian aquifers and bimonthly measurements were made in 7 wells in the intake area of the artesian aquifer about 20 miles west of the Pecos River. Record-low mean annual and mean monthly artesian heads occurred in 1954 in 6 of the artesian wells equipped with recording gages and having long periods of record. Mean annual heads in 1954 were lower than in 1953 by 2.3 feet in the Berrendo well and by 9.7 feet in the Artesia well. The average decline was about 5.1 feet or about 0.9 foot less than in 1953 and about 0.4 foot greater than in 1952. The departure from the average in 1954 in the 6 artesian wells with long records ranged from 14.5 feet below average in the Berrendo-Smith well to 60.1 feet below average in the Artesia well. The difference in the mean annual artesian heads between the highest on record, which was in 1941 in the Greenfield well and 1942 in the others, and that in 1954 ranged from 20.0 feet in the Berrendo well to 81.3 feet in the Artesia well. The mean monthly and the mean annual heads, the departures from average in 1954, and the change in the mean monthly heads in 7 artesian wells are tabulated on pages 184 and 185. The fluctuations in mean monthly artesian heads since 1940 in the 6 artesian wells are shown in figures 51, 52, 53, and 54. Measurements of artesian head in the Roswell basin have been published in the annual series of water-supply papers since 1935.

In the intake area, water levels in 5 wells (having long periods of record and in which bimonthly measurements were made in 1954) showed a general decline in 1954 from the levels of 1953, reaching their lowest of record. The low water levels in 4 wells were in September, and that in well 18.23.5.333 was in November. In well 11.22.1.312 the water level was 3.8 feet lower than the low in November 1953 and 26.0 feet lower than the highest of record; in well 14.23.8.144 the water level was 3.6 feet lower than in September 1953 and 27.3 feet lower than the highest of record; in well 16.23.15.323 the water level was 3.6 feet lower than in September 1953 and 27.4 feet lower than the highest of record; in well 18.23.5.333 the November 1954 water level was 4.9 feet lower than in September 1953 and 45.3 feet lower than the highest of record; and in well 19.23.27.111 the water level was 2.2 feet lower than in September 1953 and 14.8 feet lower than the highest of record. The average decline from the fall of 1953 to the fall of 1954 was 3.6 feet for the 5 wells.

Water-level records for 5 wells in the Salt Creek-Macho Draw area in which bimonthly measurements were made in 1954 and which have comparable records in 1953 ranged from 0.7 foot to 2.6 feet below the lowest water levels observed in 1953, an average decline of 1.5 feet.

Roswell Basin

7.23.23.242. Jess Corn. Drilled irrigation artesian well in limestone member of San Andres formation, diameter 14 inches, depth 426 feet. Land-surface datum is 3,814 feet above msl. Highest water level 239.83 below lsd, May 26, 1951; lowest 250.29 below lsd, Nov. 9, 1954. Records available: 1951-54. Jan. 7, 247.71; Mar. 9, 247.24; May 11, 249.12; Nov. 9, 250.29.

8.24.5.233. Jess Corn. Drilled irrigation artesian well in Chalk Bluff formation and limestone member of San Andres formation, diameter 12 inches, depth 446 feet. Land-surface datum is 3,645 feet above msl. Highest water level 65.34 below lsd, Jan. 25, 1950; lowest 80.48 below lsd, July 8, 1954. Records available: 1949-54. Jan. 5, 76.02; Mar. 9, 76.07; July 8, 80.48; Sept. 7, 79.55; Nov. 9, 77.01.

8.24.15.111. Jess Corn. Drilled unused artesian well in Chalk Bluff formation and limestone member of San Andres formation, diameter 16 inches, depth 215 feet. Land-surface datum is 3,593 feet above msl. Highest water level 20.18 below lsd, Sept. 11, 1950; lowest 34.36 below lsd, July 8, 1954. Records available: 1949-54. Jan. 7, 33.05; Mar. 9, 33.23; May 11, 34.09; July 8, 34.36; Sept. 8, 31.65; Nov. 9, 27.34.

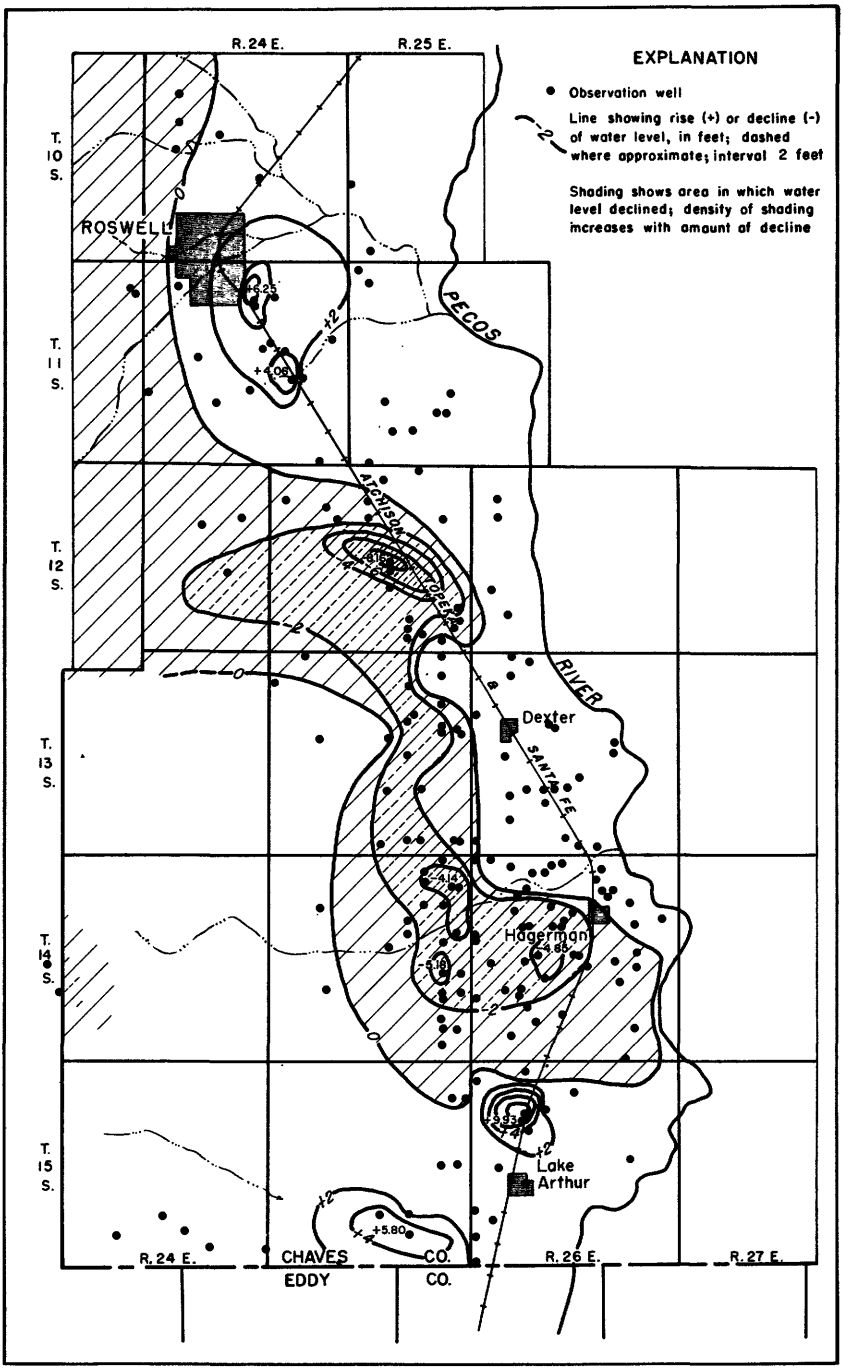


Figure 49. --Change in shallow ground-water level from January 1954 to January 1955 in northern part of Roswell basin, Chaves County, N. Mex.

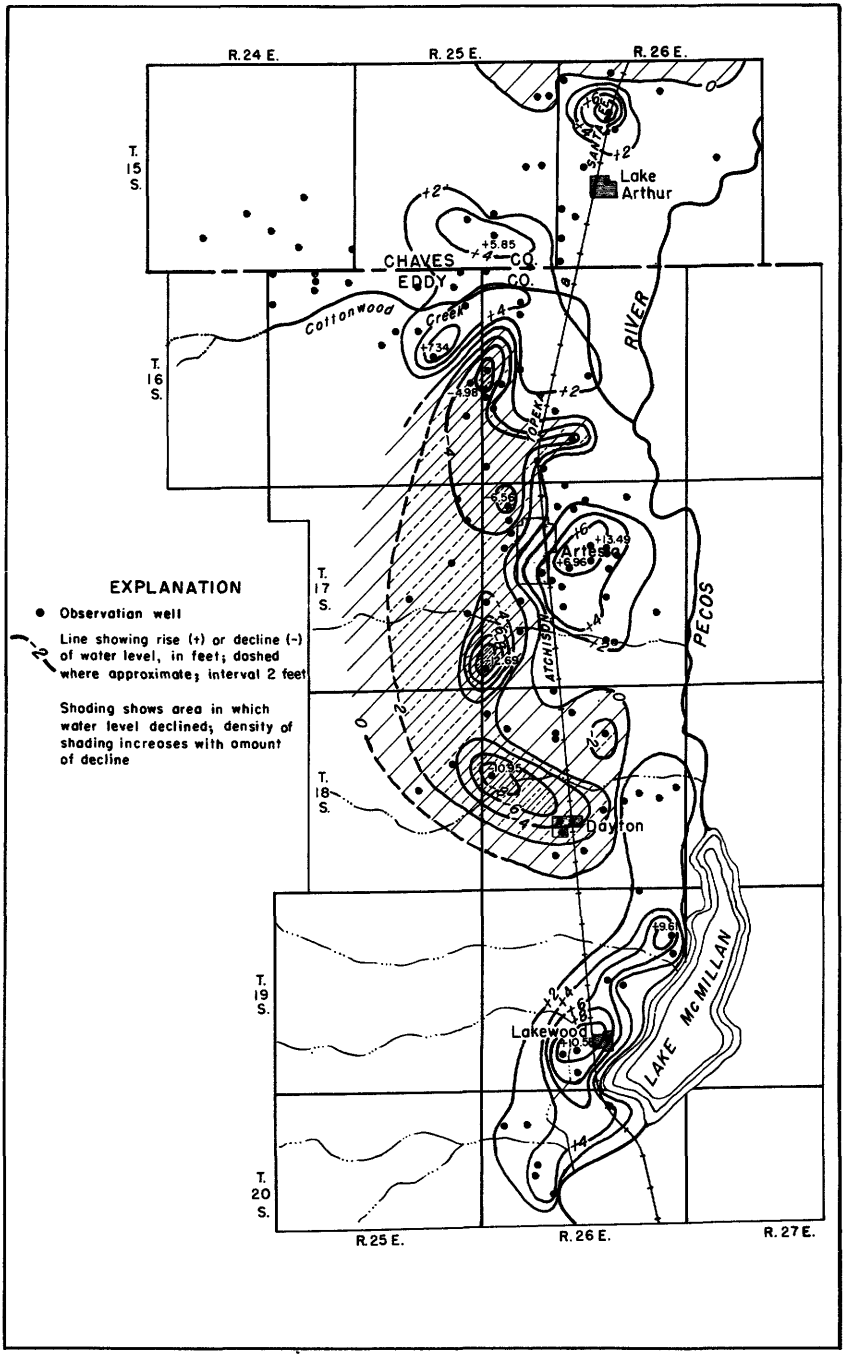


Figure 50. --Change in shallow ground-water level from January 1954 to January 1955 in southern part of Roswell basin, Eddy County, N. Mex.

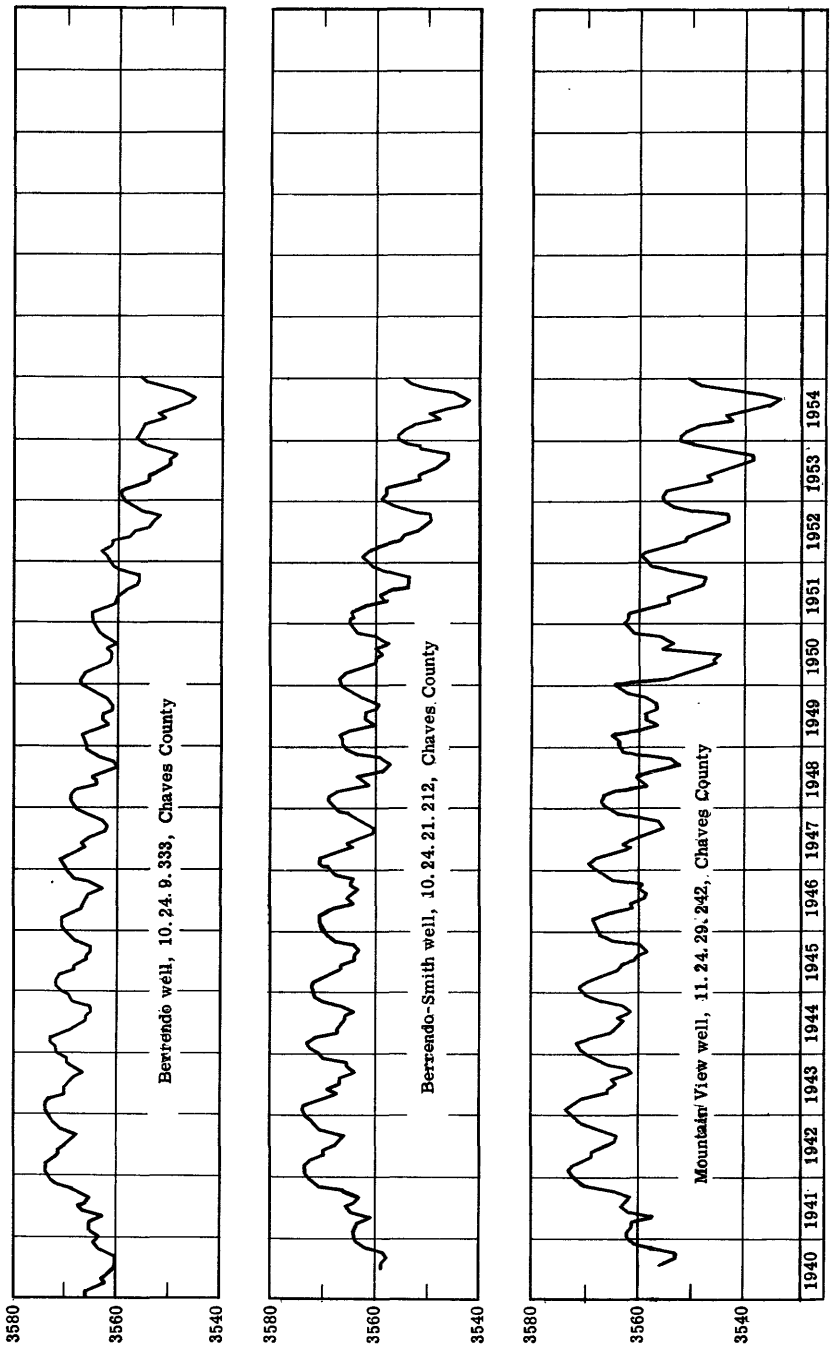


Figure 51.--Artesian water level in wells 10.24.9.333, 10.24.21.212, and 11.24.29.242 in Roswell basin, Chaves County, N. Mex.

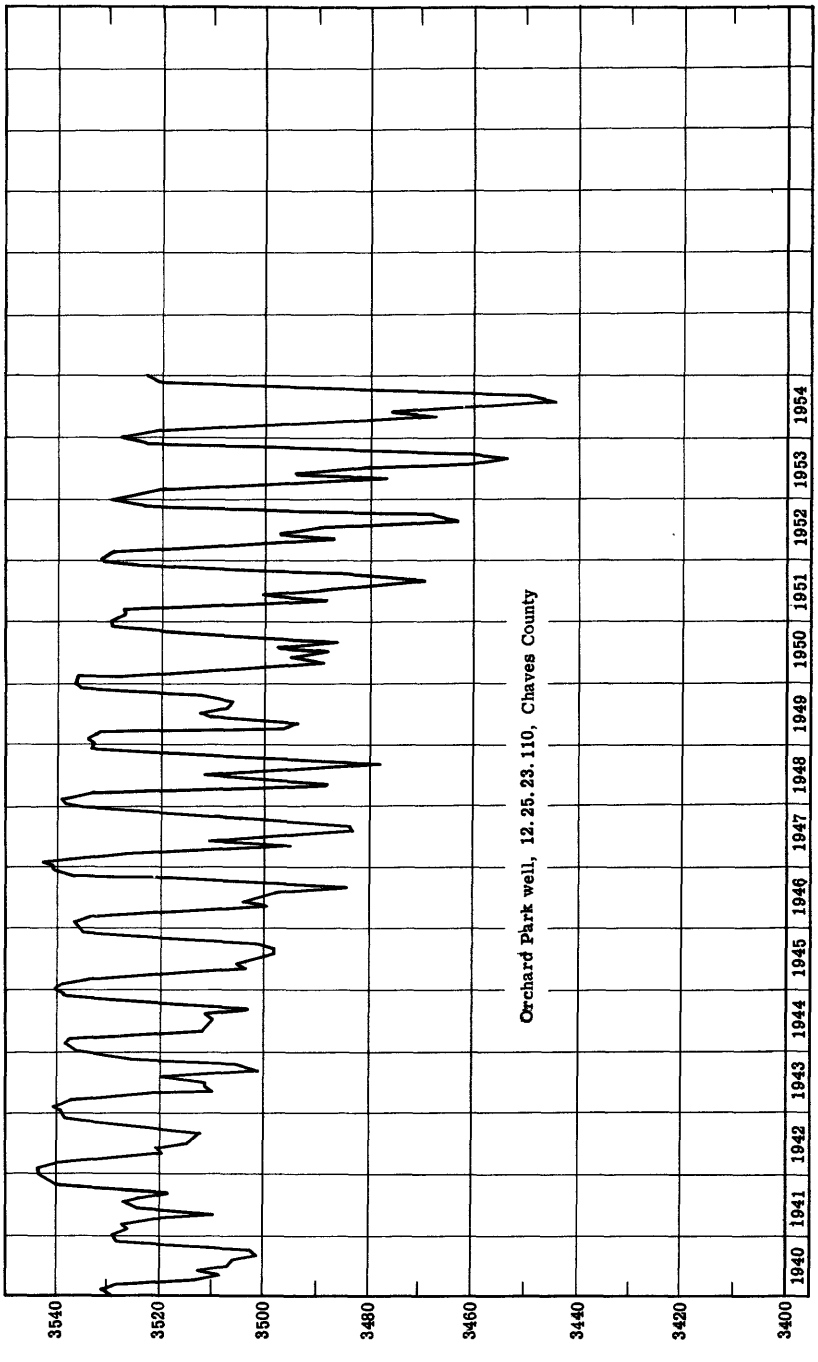


Figure 52.--Artesian water level in well 12.25.23.110 in Roswell basin, Chaves County, N. Mex.

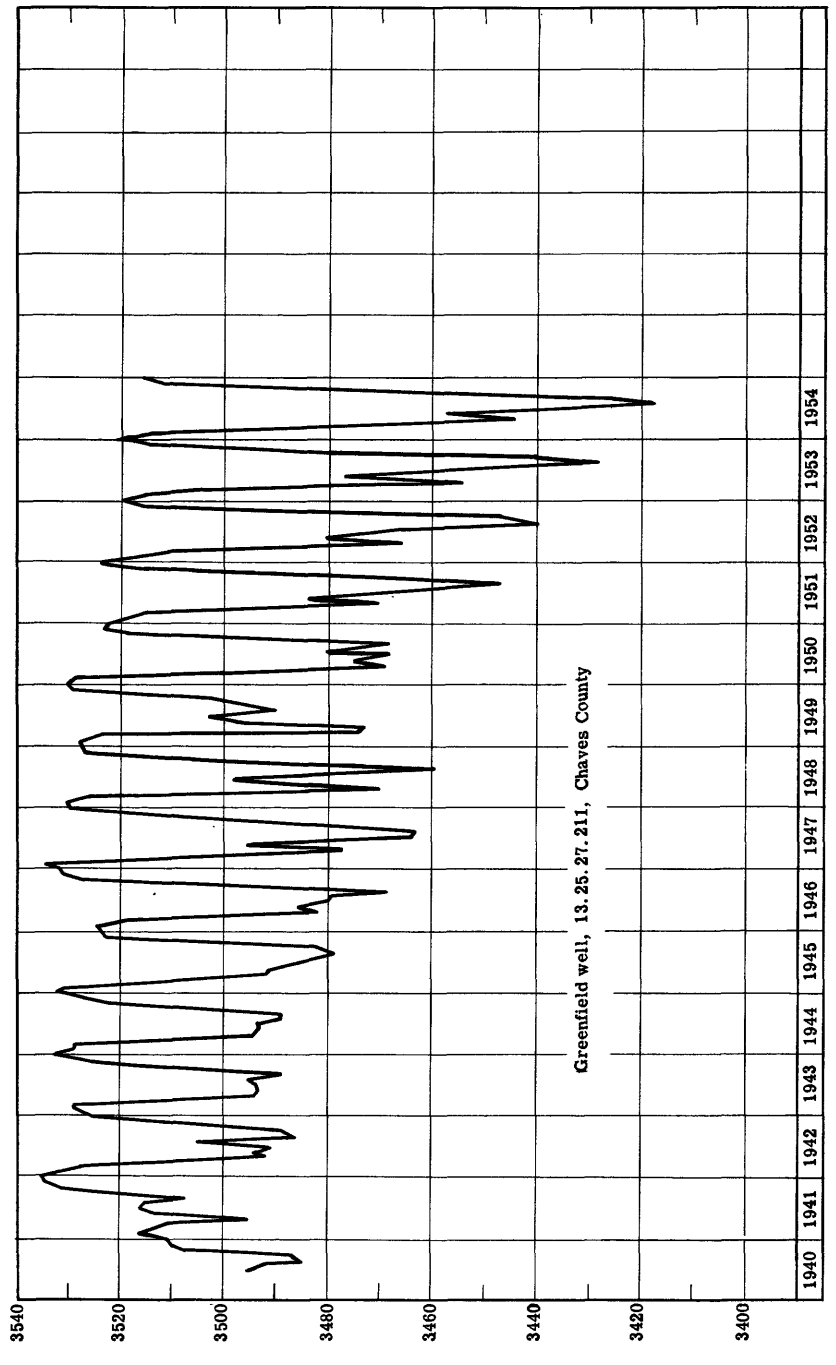


Figure 53.--Artesian water level in well 13.25.27.211 in Roswell basin, Chaves County, N. Mex.

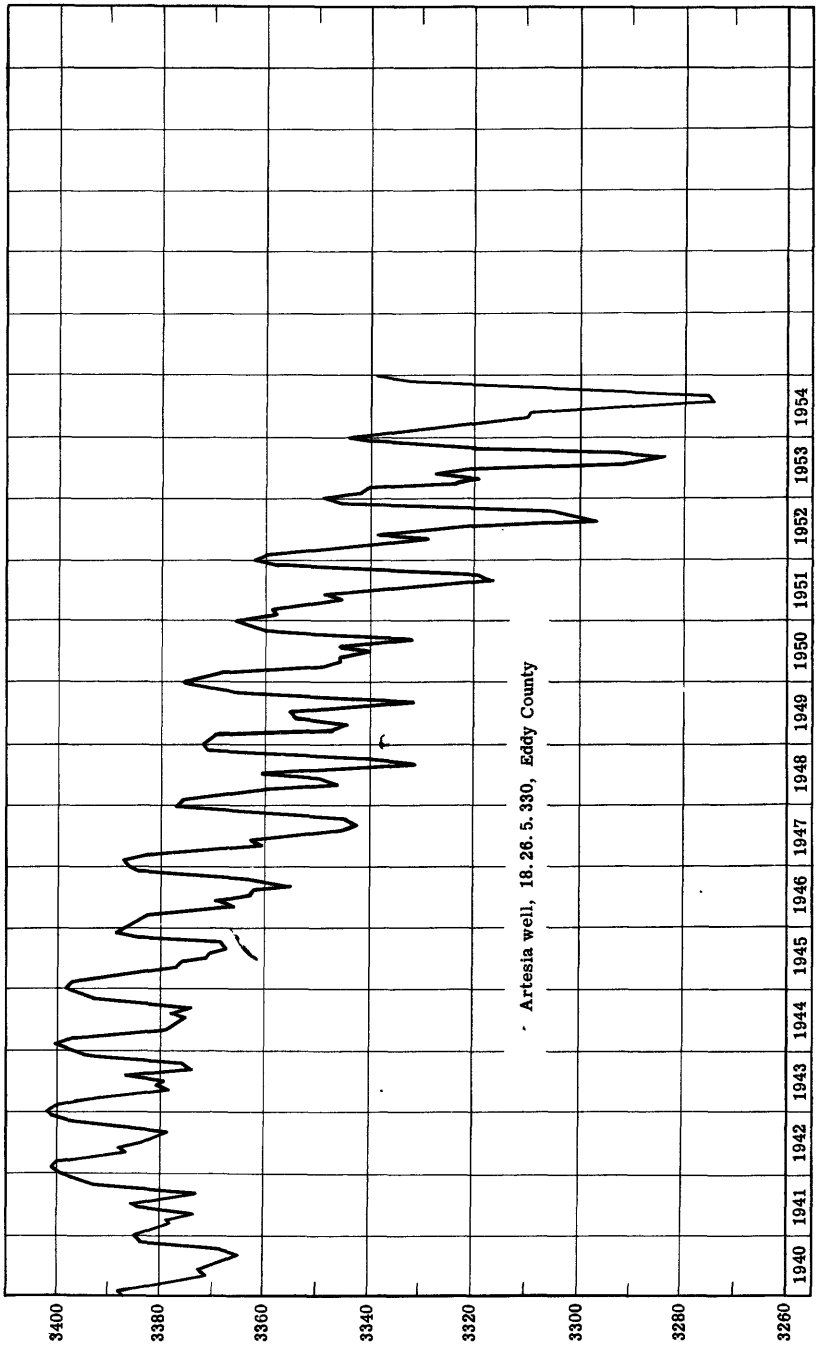


Figure 54.--Artesian water level in well 18. 26. 5. 330 in Roswell basin, Eddy County, N. Mex.

8.24.18.144. Alex Hill. Formerly Jess Corn. Drilled irrigation artesian well in Chalk Bluff formation and limestone member of San Andres formation, diameter 12 to 8 inches, depth 444 feet, cased to 417. Land-surface datum is 3,698 feet above msl. Highest water level 121.71 below lsd, Mar. 11, 1949; lowest 135.92 below lsd, Nov. 9, 1954. Records available: 1949-54. Jan. 6, 133.22; Mar. 9, 133.65; Sept. 8, 139.67, pumped recently; Nov. 9, 135.92.

8.24.22.143. Jess Corn. Drilled irrigation artesian well in limestone member of San Andres(?) formation, diameter 16 inches, depth 275 feet. Highest water level 26.33 below lsd, Mar. 11, 1949; lowest 42.05 below lsd, Sept. 8, 1954. Records available: 1949-54. Jan. 8, 37.43; Mar. 9, 37.42; May 11, 40.46; July 8, 41.32; Sept. 8, 42.05; Nov. 9, 39.67.

8.24.35.432. W. L. Wiggins. Drilled unused water-table well in limestone member of San Andres(?) formation, diameter 6 inches, depth 75 feet. Land-surface datum is 3,616 feet above msl. Highest water level 50.66 below lsd, Mar. 7, 1950; lowest 66.30 below lsd, Sept. 8, 1954. Records available: 1949-54. Jan. 8, 60.64; Mar. 10, 60.18; May 11, 63.25; July 8, 64.37; Sept. 8, 66.30; Nov. 9, 64.10.

9.24.5.130. Lacy Shortridge. Drilled irrigation artesian well in limestone member of San Andres(?) formation, diameter 10 to 8 inches, depth 364 feet. Land-surface datum is 3,661 feet above msl. Highest water level 87.25 below lsd, Sept. 12, 1950; lowest 105.73 below lsd, July 8, 1954. Records available: 1948-54. Jan. 6, 100.47; Mar. 10, 100.73; July 8, 105.73.

9.24.17.331. Oscar White. Drilled unused artesian well in limestone member of San Andres(?) formation, diameter 6 inches. Land-surface datum is 3,699 feet above msl. Highest water level 94.79 below lsd, Aug. 17, 1950; lowest 133.17 below lsd, May 16, 1954. Records available: 1948-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	128.29	.....	129.26	.....	.....	113.22	118.95	122.07	121.96	122.27	100.42	105.04
2	128.30	.....	129.29	h130.31	.....	113.33	119.13	122.12	121.07	122.48	100.37	105.35
3	128.31	.....	129.31	130.28	.....	113.45	119.29	122.25	121.43	122.70	100.35	105.73
4	.....	.....	129.34	130.22	.....	113.63	119.47	122.38	120.05	122.92	e100.33	105.94
5	h128.34	.....	129.36	130.17	.....	113.79	119.65	122.51	119.81	123.15	.....	106.22
6	128.35	.....	129.39	130.12	.....	113.97	119.84	122.68	119.67	122.25	.....	106.52
7	128.37	.....	129.41	130.02	.....	114.16	120.02	122.81	119.57	117.18	.....	106.78
8	128.37	.....	.....	129.97	.....	114.39	120.19	122.97	119.52	114.38	.....	107.03
9	128.38	.....	.....	129.91	.....	114.61	120.45	123.13	119.52	112.13	h100.63	107.26
10	128.40	.....	h129.50	129.84	.....	114.83	120.60	123.21	119.52	110.49	100.65	107.51
11	128.42	.....	129.50	129.77	.....	115.06	120.76	123.47	119.55	109.11	100.76	107.72
12	128.43	.....	129.52	129.70	h133.00	115.28	120.93	123.67	119.58	107.95	100.88	107.93
13	128.45	.....	129.54	129.62	133.01	115.50	121.12	123.85	119.62	106.97	101.00	108.15
14	128.45	.....	129.57	.....	133.06	115.72	121.29	123.96	119.69	106.14	101.13	108.37
15	128.47	.....	129.59	.....	133.11	115.93	121.46	123.95	119.77	105.40	101.27	108.57
16	128.48	.....	129.61	.....	133.17	116.14	121.64	123.90	119.87	104.75	101.43	108.76
17	.....	.....	129.63	.....	132.09	116.34	121.83	123.90	119.96	104.18	101.60	108.96
18	.....	.....	129.67	.....	127.09	116.55	122.03	123.71	120.06	103.67	101.79	109.18
19	.....	.....	129.68	.....	123.81	116.71	122.23	123.53	120.18	.....	101.99	109.38
20	128.52	.....	129.71	.....	121.36	116.91	122.40	123.37	120.29	h103.08	102.21	109.59
21	128.53	.....	129.74	.....	119.11	117.09	122.59	123.16	120.33	.....	102.44	109.79
22	128.54	.....	129.77	.....	117.05	117.28	122.77	122.96	120.59	102.51	.....	110.01
23	128.55	.....	.....	.....	115.43	117.45	122.95	122.77	120.75	102.23	102.91	110.20
24	128.56	.....	.....	.....	114.34	117.63	123.13	122.65	120.91	101.90	103.15	110.42
25	128.57	129.17	.....	.....	113.60	117.80	123.30	122.58	121.09	101.59	103.43	110.59
26	128.57	129.18	.....	.....	113.16	117.98	123.47	122.46	121.26	101.30	103.69	110.79
27	128.58	129.20	.....	.....	112.99	118.18	123.64	122.32	121.44	101.05	103.95	110.99
28	128.59	129.23	.....	.....	112.97	118.37	123.56	122.17	121.62	100.86	104.21	111.20
29	128.60		.....	.....	113.03	118.58	122.51	122.00	121.81	100.71	104.50	111.39
30	128.62		.....	.....	113.04	118.76	122.09	121.80	122.03	100.59	104.77	111.58
31	128.63		.....		113.09		122.01	121.21		100.49		111.77

e Estimated.
h Tape measurement.

10.24.8.333. Ira Lee. Drilled irrigation water-table well in valley fill, diameter 13 to 10 inches, depth 181 feet. Highest water level 40.67 below lsd, Feb. 5, 1947; lowest 65.36 below lsd, Sept. 11, 1954. Records available: 1946-54. Feb. 3, 56.38; Mar. 10, 57.08; May 13, 61.72; July 8, 63.84; Sept. 11, 65.36; Nov. 10, 59.33.

10.24.9.333. Berrendo. Drilled observation artesian well in limestone member of San Andres formation, diameter 10 inches, depth 258 feet, depth to artesian aquifers 170 and 241. Land-surface datum is 3,586.16 feet above msl. Highest water level 11.29 below lsd, Dec. 19-20, 1926; lowest 41.84 below lsd, Aug. 20, 1954. Records available: 1926-54.

10.24.9.333--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.30	28.99	29.44	32.72	34.10	32.32	38.64	e39.50	38.65	36.85	31.73	30.54
2	28.29	28.97	29.52	33.13	34.00	32.59	38.56	40.65	38.38	36.74	31.65	30.42
3	28.33	29.00	29.55	33.23	33.88	34.33	37.10	41.06	39.75	36.69	31.59	30.34
4	28.32	29.17	29.43	33.72	34.41	33.55	36.52	40.95	39.84	36.53	31.58	30.28
5	28.52	29.30	29.39	33.62	34.28	33.37	36.37	41.18	38.97	36.64	31.52	30.27
6	28.65	29.37	29.38	33.79	34.10	33.34	36.60	39.83	38.78	36.29	31.47	30.18
7	28.74	29.44	29.35	33.87	34.22	33.24	36.87	39.42	38.95	.....	31.46	30.09
8	28.80	29.30	29.31	34.18	34.20	33.47	36.92	39.00	39.17	.....	31.48	30.14
9	30.21	29.26	29.37	34.34	34.08	33.67	36.85	38.78	40.28	.....	31.46	30.15
10	30.28	29.25	29.50	34.48	34.00	33.79	37.07	38.78	39.98	.....	31.49	30.04
11	30.22	29.27	29.59	34.53	34.33	34.00	37.27	38.72	39.72	33.75	31.47	30.07
12	30.24	29.39	29.54	34.12	34.28	34.63	37.04	38.78	38.47	33.60	31.48	29.92
13	30.18	29.51	29.69	34.05	34.80	34.82	37.78	38.87	38.28	33.54	31.38	29.80
14	30.18	29.28	29.62	34.19	34.55	36.09	38.32	39.09	38.28	33.42	31.33	29.80
15	30.14	29.19	29.53	34.00	35.70	36.32	37.78	39.34	38.18	33.28	31.24	29.82
16	30.15	29.39	29.62	34.05	35.82	36.42	39.41	39.14	37.84	33.15	31.18	29.76
17	30.25	29.63	29.64	34.43	36.18	36.12	39.12	39.98	37.65	33.04	31.28	29.84
18	30.18	29.61	29.74	33.89	33.10	35.38	39.45	41.38	37.59	32.95	31.20	29.80
19	30.19	29.67	29.94	33.74	33.10	35.68	39.70	41.43	37.33	32.83	32.43	29.79
20	30.19	29.63	30.20	34.02	31.90	35.61	40.00	41.84	37.21	32.75	32.38	29.72
21	30.17	29.69	30.32	34.09	31.68	35.44	40.10	40.00	37.19	32.70	31.20	29.69
22	29.33	29.69	30.30	34.15	31.45	35.83	40.04	39.49	37.12	32.63	31.08	29.67
23	30.16	29.80	30.82	34.15	31.34	35.79	38.98	39.33	37.24	32.50	31.05	29.63
24	30.19	29.81	31.30	34.15	31.29	36.43	38.83	39.82	37.26	32.40	30.91	29.62
25	29.10	29.79	31.18	33.92	31.29	36.87	38.80	39.28	37.13	32.34	30.78	29.46
26	28.95	29.83	31.64	33.84	31.32	36.80	38.88	39.88	36.87	32.29	30.69	29.48
27	28.96	29.82	31.98	33.96	31.43	36.84	40.63	38.55	36.74	32.12	30.61	29.46
28	28.90	29.60	32.02	34.02	31.65	37.94	40.65	38.25	36.88	32.02	30.57	29.49
29	28.90		31.93	34.05	31.86	38.54	40.43	38.59	36.77	31.90	30.48	29.34
30	29.17		32.28	34.13	32.00	38.64	40.27	38.43	36.81	31.85	30.42	29.40
31	29.05		32.60		32.06		39.45	38.16		31.74		29.37

e Estimated.

10.24.21.212. Berrendo-Smith. Drilled observation artesian well in limestone member of San Andres formation, diameter 10 inches, depth 324 feet, depth to artesian aquifers 269 and 310. Land-surface datum is 3,580.65 feet above msl. Highest water level 6.06 below lsd, Jan. 19, 1943; lowest 39.02 below lsd, Aug. 19, 1954. Records available: 1940-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	23.88	24.57	25.51	30.16	31.36	30.37	35.29	37.82	35.82	34.39	27.77	26.42
2	23.88	24.74	25.69	30.78	30.93	30.88	36.01	37.07	36.02	34.02	27.66	26.27
3	23.93	24.86	25.84	30.83	30.74	31.23	35.63	38.00	36.42	33.57	27.55	26.17
4	24.02	24.98	25.65	30.68	30.89	31.30	34.45	37.48	36.76	33.38	27.57	26.17
5	24.16	25.16	25.64	30.23	31.10	31.26	34.11	38.12	36.17	33.44	27.49	26.13
6	24.28	25.18	25.69	31.77	31.00	30.92	34.64	38.26	35.79	32.76	27.37	26.10
7	24.40	25.21	25.65	31.32	31.17	30.74	34.83	38.24	36.06	31.98	27.41	25.91
8	24.44	25.02	25.55	32.03	31.26	31.12	34.90	37.53	36.43	31.57	27.40	26.02
9	24.65	25.00	25.73	32.23	30.92	31.24	34.75	37.20	36.24	31.23	27.36	26.00
10	24.68	25.00	25.88	32.52	30.76	31.23	35.23	37.55	35.94	30.90	27.45	25.80
11	24.45	25.10	26.05	31.87	31.04	31.35	35.28	37.32	35.74	30.77	27.46	25.88
12	24.62	25.27	26.02	31.20	31.18	31.50	34.87	37.21	35.60	30.43	27.39	25.70
13	24.52	25.22	26.19	31.59	31.48	31.67	35.70	37.32	35.25	30.30	27.24	25.58
14	24.44	25.18	25.96	31.59	31.63	31.39	36.21	37.43	35.49	30.06	27.25	25.75
15	24.47	25.08	25.84	31.58	31.57	32.07	35.55	37.53	35.40	29.80	27.14	25.83
16	24.55	25.32	26.06	31.57	31.67	32.23	36.04	37.20	35.27	29.61	27.12	25.78
17	24.54	25.51	26.19	31.72	31.43	32.67	36.34	38.18	35.39	29.41	27.33	25.92
18	24.40	25.50	26.33	31.20	30.28	33.49	35.98	38.88	35.45	29.35	27.23	25.87
19	24.52	25.64	26.43	30.93	29.90	33.48	36.22	39.02	35.02	29.12	27.18	25.86
20	24.66	25.60	26.70	31.49	29.58	33.47	36.89	38.55	34.69	29.01	27.03	25.84
21	24.74	25.68	26.77	31.63	29.34	33.34	37.17	38.03	34.88	28.95	26.94	25.75
22	24.72	25.46	26.58	31.62	29.15	33.88	37.19	36.82	34.82	28.83	27.08	25.73
23	24.62	25.72	27.28	31.56	28.93	33.85	37.09	36.54	34.84	28.69	26.98	25.73
24	24.63	25.81	27.98	31.58	28.84	34.12	36.92	35.88	34.82	28.58	26.84	25.76
25	24.49	25.93	28.04	31.33	28.95	34.43	36.74	35.50	34.46	28.48	26.70	25.60

10.24.21.212--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	24.79	25.94	28.63	31.02	29.02	34.79	36.73	35.55	34.08	28.40	26.60	25.54
27	24.93	25.98	28.93	31.32	29.23	34.67	37.78	36.02	33.87	28.17	26.45	25.52
28	24.80	25.83	29.08	31.49	29.74	34.63	38.00	35.71	34.29	28.06	26.52	25.63
29	24.80		29.03	31.38	30.00	35.52	37.63	35.51	34.10	27.92	26.38	25.54
30	25.00		29.80	31.50	29.90	35.47	38.04	35.13	34.34	27.84	26.34	25.51
31	24.70		30.37		29.78		37.95	35.70		27.75		25.48

10.24.32.111. F. W. Lewis. Dug unused water-table well in valley fill, diameter 40 inches, depth 52 feet. Highest water level 27.48 below lsd, Jan. 28, 1946; lowest dry at 36.59, Nov. 4, 1953. Records available: 1946-53. Measurement discontinued.

10.25.19.331. E. H. Pugh. Drilled stock water-table well in valley fill, diameter 4 inches. Highest water level 30.76 below lsd, Feb. 12, 1942; lowest 37.86 below lsd, Nov. 4, 1953. Records available: 1942-54. Feb. 2, 37.29; Mar. 10, 37.13; May 13, 37.71; July 9, 40.61, pumping; Sept. 9, 40.33, pumping; Nov. 10, 39.90, pumping.

11.23.1.433. S. M. Wiggins. Drilled irrigation water-table well in valley fill, diameter 14 inches. Highest water level 56.07 below lsd, Feb. 4, 1947; lowest 85.64 below lsd, Sept. 10, 1954. Records available: 1947-54. Jan. 5, 72.54; Mar. 13, 74.05; May 14, 80.10; July 9, 83.72; Sept. 10, 85.64; Nov. 10, 76.68.

11.23.3.342. J. L. Mask. Drilled unused irrigation artesian well in limestone member of San Andres formation, diameter 15 inches, depth 595+ feet, black lime 170-175, gray lime 505-508, brown lime 540-595. Highest water level 159.59 below lsd, Jan. 6, 1953; lowest 172.22 below lsd, Aug. 30, 1954. Records available: 1952-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	163.06	163.00	163.33	165.31	.....	166.90	168.98	170.86	172.11	.....	166.61	165.29
2	163.08	162.95	163.57	165.44	.....	166.95	169.12	170.85	172.08	.....	166.50	165.24
3	163.12	163.06	163.56	165.57	.....	167.11	169.19	171.00	172.08	.....	166.45	165.21
4	163.14	162.99	163.41	165.58	.....	167.11	169.16	171.05	172.02	.....	166.45	165.08
5	163.14	163.15	163.53	165.99	.....	167.08	169.13	171.19	172.15	.....	166.34	165.16
6	163.01	163.14	163.43	166.00	.....	167.12	169.22	171.21	172.11	.....	166.33	165.03
7	163.08	163.20	163.51	166.54	.....	167.13	169.31	171.30	172.03	.....	166.26	164.96
8	162.96	163.06	163.44	166.59	.....	167.18	169.40	171.23	171.99	.....	166.28	164.98
9	163.13	163.14	163.39	166.65	.....	167.23	169.43	171.20	.....	.....	166.21	165.01
10	163.06	163.12	163.42	166.44	.....	167.32	169.47	171.23	171.80	.....	166.21	164.90
11	163.11	163.12	163.47	166.55	.....	167.41	169.75	171.31	171.64	.....	166.17	164.86
12	163.00	163.26	163.50	166.54	.....	167.71	169.60	171.34	.....	.....	166.09	164.88
13	162.94	163.14	163.57	166.67	.....	167.52	169.65	171.40	.....	.....	165.96	164.79
14	162.90	163.21	163.59	166.73	168.13	167.45	170.02	171.57	.....	.....	165.99	164.74
15	162.89	163.21	163.57	166.81	167.87	167.60	169.87	171.56	.....	.....	165.87	164.66
16	162.99	163.26	163.60	136.98	167.74	167.62	169.88	171.47	.....	.....	165.86	164.64
17	162.99	163.22	163.61	167.06	167.72	167.58	170.01	171.61	.....	.....	165.86	164.72
18	162.97	163.24	163.68	166.86	167.53	167.92	170.32	171.65	.....	.....	165.84	164.70
19	162.89	163.22	163.74	.....	167.34	168.10	170.02	171.73	.....	167.92	165.74	164.69
20	162.91	163.28	163.83	.....	167.19	168.11	170.10	171.80	.....	167.80	165.67	164.63
21	162.95	163.58	163.90	.....	167.13	168.14	170.24	171.85	.....	167.65	165.70	164.55
22	162.88	163.45	163.88	.....	167.00	168.31	170.33	171.96	.....	167.52	165.66	164.53
23	162.84	163.37	163.96	.....	166.93	168.40	170.45	171.84	.....	167.42	165.56	164.50
24	162.85	163.34	164.06	.....	166.89	168.45	170.46	171.86	.....	167.30	165.58	164.44
25	162.83	163.32	164.26	.....	166.81	168.71	170.47	171.91	.....	167.21	165.47	164.39
26	162.91	163.35	164.49	.....	166.80	168.94	170.59	172.10	.....	167.19	165.39	164.37
27	162.95	163.54	164.59	.....	166.80	168.92	171.00	172.10	.....	166.99	165.28	164.36
28	163.03	163.36	164.68	.....	166.81	168.63	171.00	172.12	.....	166.91	165.35	.....
29	162.90		164.75	.....	166.81	168.83	170.81	172.15	.....	166.81	165.31	.....
30	163.08		164.95	.....	166.83	168.93	170.86	172.22	.....	166.72	165.29	.....
31	162.97		165.16		166.84		170.96	172.18		166.61		.....

11.23.15.222. C. E. Smith. Drilled irrigation artesian well in Chalk Bluff formation and limestone member of San Andres formation, diameter 16 inches, depth 649 feet. Highest water level 101.29 below lsd, Jan. 28, 1950; lowest 117.98 below lsd, Nov. 6, 1953. Records available: 1950-54. Jan. 5, 114.08; Mar. 12, 114.89; May 14, 132.90, pumping; July 12, 133.55, pumping, measurement uncertain; Sept. 10, 135.00, pumping; Nov. 11, 132.65, pumping, measurement uncertain.

11.23.22.343a. Byrum Brown. Drilled irrigation artesian well in Chalk Bluff formation and limestone member of San Andres formation, diameter 14 inches, depth 231 feet. Highest water level 164.36 below lsd, Jan. 28, 1953; lowest 180.60 below lsd, Sept. 10, 1954. Records available: 1952-54. Jan. 5, 167.88; Mar. 12, 168.38; Sept. 10, 180.60; Nov. 11, 173.25.

11.24.10.224. C. E. Smith. Drilled stock water-table well in valley fill, diameter 8 inches, depth 129 feet. Land-surface datum is 3,563 feet above msl. Highest water level 11.14 below lsd, Dec. 10, 1941; lowest 47.01 below lsd, Sept. 11, 1953. Records available: 1937-54. Pressure pump operates intermittently. Feb. 1, 25.04; Mar. 13, 34.17, pumping; May 13, 37.58, pumped recently; July 9, 48.60, pumped recently; Sept. 9, 44.74; Nov. 10, 24.95.

11.24.14.331. G. C. Porter. Formerly H. M. Flourney. Drilled irrigation water-table well in valley fill, diameter 8 inches. Highest water level 27.58 below lsd, Feb. 3, 1948; lowest 68.63 below lsd, July 9, 1954. Records available: 1947-54. Jan. 29, 44.70; Mar. 13, 49.31; May 13, 57.85; July 9, 68.63; Sept. 9, 64.61; Nov. 10, 44.60.

11.24.28.113. S. W. Skinner. Drilled domestic water-table well in valley fill, diameter 6 inches, depth 143 feet. Highest water level 50.78 below lsd, Nov. 14, 1941; lowest 94.60 below lsd, Sept. 9, 1954. Records available: 1938-54. Jan. 30, 77.87; Mar. 13, 80.29, pumped recently; May 13, 87.40, pumped recently; July 8, 92.78; Sept. 9, 94.60; Nov. 12, 81.53.

11.24.29.242. Mountain View. Drilled artesian well in limestone member of San Andres formation, diameter 10 inches, depth 553 feet, depth to artesian aquifers 290, 410, 460, 505, and 545. Land-surface datum is 3.627.18 feet above msl. Highest water level 53.18 below lsd, Jan. 18, 1943; lowest 95.31 below lsd, Aug. 21, 1954. Records available: 1940-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	73.95	74.38	75.90	83.11	84.72	84.12	.....	e93.55	90.59	.....	79.34	77.08
2	74.08	74.94	76.54	83.71	83.93	84.72	.....	e93.45	90.87	.....	79.18	76.84
3	74.09	75.18	76.72	83.87	83.63	85.23	.....	94.14	91.04	.....	79.05	76.70
4	73.99	75.28	76.63	83.38	83.90	85.26	.....	94.13	91.22	.....	79.03	76.55
5	74.30	75.47	76.49	82.83	84.13	85.25	89.18	94.60	90.54	.....	78.82	76.45
6	74.50	75.55	76.55	83.92	84.14	84.65	.....	94.89	e90.15	.....	78.70	76.33
7	74.63	75.14	76.34	84.62	84.14	84.42	.....	94.94	90.85	.....	78.55	76.17
8	74.69	74.94	76.17	84.94	83.94	84.80	.....	93.85	90.99	.....	78.44	76.14
9	74.85	75.13	76.52	85.11	83.38	84.95	90.65	e93.55	91.17	.....	78.48	76.22
10	74.59	75.15	76.85	85.20	83.13	85.17	90.85	93.82	91.20	.....	78.54	76.00
11	74.44	75.29	77.26	84.37	83.78	85.10	90.50	94.22	91.28	83.68	78.43	75.99
12	74.58	75.46	77.06	83.90	84.08	85.25	90.28	94.38	90.62	83.38	78.40	75.86
13	74.40	75.57	77.54	83.89	84.25	85.23	91.08	94.28	90.29	83.08	78.18	75.65
14	74.41	75.32	e76.85	84.30	84.30	84.80	91.51	94.35	90.77	82.97	78.08	75.74
15	74.41	75.16	e76.60	84.66	84.35	85.67	91.39	94.06	90.67	82.60	77.92	75.82
16	74.50	75.70	e77.18	84.92	83.98	e86.18	91.72	93.72	90.55	82.26	77.93	75.65
17	74.31	75.84	77.62	84.73	83.63	86.45	91.89	94.47	90.68	81.96	78.07	76.00
18	74.16	75.99	77.87	83.82	83.00	87.07	91.69	94.93	90.58	81.85	78.12	75.94
19	74.46	76.02	78.24	83.45	82.59	87.29	91.47	95.17	89.87	81.62	78.13	75.97
20	74.69	75.93	78.71	84.38	82.39	87.12	92.33	95.22	89.67	81.43	78.01	75.70
21	74.89	75.68	78.44	84.63	82.20	86.85	92.55	95.31	e89.90	81.27	77.79	75.74
22	74.68	75.50	78.14	84.66	81.95	87.60	92.75	93.70	.....	81.11	77.65	75.77
23	74.64	76.10	79.23	84.82	81.83	88.02	.....	.....	.....	80.85	77.52	75.84
24	74.42	76.20	79.88	84.84	81.67	88.38	.....	.....	.....	80.54	77.61	75.73
25	74.30	76.28	80.24	84.30	82.06	88.92	.....	.....	.....	80.44	77.42	75.48
26	74.75	76.29	80.79	83.98	82.50	89.21	.....	.....	.....	80.34	77.18	75.37
27	74.89	76.40	81.22	84.63	82.87	88.73	e93.53	.....	.....	80.13	77.25	75.35
28	74.86	76.10	81.32	84.74	83.37	88.39	e93.50	.....	.....	79.95	77.14	75.58
29	74.85		80.83	84.84	83.65	89.41	e93.70	.....	.....	79.78	76.96	75.45
30	75.12		81.95	84.81	83.18	.....	e93.90	90.26	.....	79.60	76.93	75.39
31	74.64		82.78		82.94		94.09	90.34		79.30		75.37

e Estimated.

11.25.6.421a. W. M. Kent. Formerly T. H. Eicher. Drilled unused water-table well in valley fill, diameter 8 inches, depth 85 feet. Highest water level 1.05 below lsd, July 7, 1953; lowest 11.14 below lsd, Sept. 15, 1948. Records available: 1941-54. Feb. 1, 8.58.

11.25.29.444. Glenn C. Wheeler. Drilled unused water-table well in valley fill, diameter 6 inches, depth 30 feet. Highest water level 3.14 below lsd, Mar. 15, 1942; lowest 15.49 below lsd, Nov. 3, 1948. Records available: 1937-54. Jan. 29, 13.13; Mar. 13, 13.85; May 13, 12.43; July 12, 13.62; Sept. 9, 13.80; Nov. 12, 9.56.

12.24.13.111. W. T. Weldy. Drilled stock water-table well in valley fill, diameter 8 inches. Highest water level 62.36 below lsd, Jan. 7, 1943; lowest dry at 90.54, Sept. 12, 1953; and dry at 90.40, July 12, 1954. Records available: 1942-54. Jan. 29, 82.40; Mar. 16, 83.40; May 15, 89.36; July 12, 90.40, dry.

12.25.9.422. Cumberland townsite. Drilled unused water-table well in valley fill, diameter 10 inches, reported depth 90 feet. Highest water level 38.64 below lsd, Oct. 16, 1941; lowest 68.88 below lsd, Sept. 9, 1954. Records available: 1937-54. Jan. 28, 62.14; Mar. 15, 63.94; May 13, 66.74; July 12, 67.80; Sept. 9, 68.88; Nov. 12, 65.35.

12.25.22.411. W. T. Clardy. Drilled unused water-table well in valley fill, diameter 18 inches, depth 147 feet. Highest water level 86.86 below lsd, Mar. 11, 1948; lowest 115.18 below lsd, Sept. 9, 1954. Records available: 1947-54. Jan. 28, 103.94; Mar. 15, 109.94, nearby well being pumped; May 13, 113.18; July 12, 118.30, nearby well pumped recently; Sept. 9, 115.18; Nov. 12, 112.43.

12.25.23.110. Orchard Park. Drilled unused artesian well in limestone member of San Andres formation, diameter 8 inches, depth 810 feet, depth to artesian aquifers 600-790. Land-surface datum is 3,546.19 feet above msl. Highest water level 1.74 below lsd, Jan. 15, 1942; lowest 111.10 below lsd, Aug. 6, 1954. Records available: 1925-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21.61	27.85	42.60	83.23	70.82	77.49	98.65	108.99	69.89	72.20	24.15	22.37
2	20.78	29.70	44.38	85.87	66.36	77.27	97.49	107.54	70.91	68.48	24.59	22.33
3	17.98	31.02	47.05	87.57	64.66	81.52	99.26	109.81	71.82	63.23	24.95	22.33
4	16.70	31.94	45.72	84.27	63.50	84.13	96.22	109.79	72.10	60.64	26.55	22.89
5	17.17	31.65	47.20	81.98	65.98	86.67	95.40	110.18	69.67	62.99	25.60	22.72
6	17.98	30.82	47.39	87.59	67.41	79.82	98.21	111.10	67.64	53.60	25.49	21.99
7	18.57	29.45	42.77	90.44	70.12	77.60	101.00	108.13	71.64	46.62	25.34	21.63
8	19.78	28.50	41.52	90.89	67.00	83.61	100.00	104.47	74.73	43.11	24.86	21.22
9	20.44	29.47	51.90	92.27	60.63	83.34	94.40	101.60	78.95	41.37	25.10	21.74
10	21.15	30.45	53.44	90.87	59.11	85.33	98.38	102.09	83.78	39.08	24.93	21.97
11	20.60	30.77	51.45	81.22	63.88	83.15	95.00	102.85	86.70	38.23	23.94	21.00
12	21.11	32.45	48.70	74.20	63.73	80.00	93.31	105.92	82.58	37.53	.....	19.93
13	20.35	33.10	52.25	68.95	67.63	70.35	98.15	105.60	82.50	36.83	24.84	19.39
14	21.13	33.82	52.79	73.03	67.13	66.78	101.10	107.57	83.77	35.92	25.37	21.82
15	22.51	33.09	51.92	74.03	67.19	72.14	98.71	101.92	85.34	34.40	25.13	22.86
16	24.54	36.19	55.15	70.43	62.57	76.43	101.62	99.75	81.92	32.50	25.43	23.12
17	23.94	38.15	59.42	72.85	73.50	78.66	103.01	105.38	84.05	31.42	25.99	23.45
18	23.22	40.22	60.40	67.50	65.72	83.10	97.36	107.23	85.21	30.72	26.37	25.22
19	26.44	40.55	62.61	64.40	64.50	87.20	97.50	109.29	83.70	29.38	25.65	23.88
20	26.42	40.91	64.18	67.79	63.65	84.20	100.49	110.17	81.39	29.05	25.59	24.37
21	26.62	40.20	62.95	67.60	67.60	85.25	105.10	106.50	82.85	29.03	24.99	22.94
22	26.25	41.06	61.62	69.73	66.27	87.22	105.52	95.64	82.36	28.24	24.61	23.70
23	26.69	43.54	70.57	71.97	63.25	92.64	103.85	85.35	80.22	28.48	24.73	22.70
24	26.25	44.65	71.04	74.28	60.15	94.39	101.97	73.18	81.04	27.47	23.18	21.74
25	25.40	46.46	71.84	72.62	69.80	94.65	98.90	70.38	78.70	26.77	22.21	19.88
26	26.34	44.70	74.33	73.09	74.98	94.14	97.98	69.18	74.30	26.19	21.68	19.25
27	27.48	48.30	74.33	74.22	76.70	91.43	101.53	68.36	72.85	26.56	22.49	18.93
28	29.36	44.42	76.43	74.28	78.15	89.48	104.63	68.45	75.99	26.22	22.37	18.88
29	30.03		74.96	73.40	77.98	92.36	106.96	62.98	75.79	25.79	21.85	18.53
30	30.48		79.38	73.92	72.72	97.03	108.49	63.03	74.85	25.39	22.87	18.77
31	28.47		82.73		71.43		109.10	66.68		24.40		18.40

12.25.35.411a. A. C. Stone. Drilled irrigation water-table well in valley fill, diameter 16 inches. Highest water level 40.23 below lsd, Jan. 20, 1945; lowest 90.57 below lsd, Sept. 14, 1954. Records available: 1945-54. Jan. 27, 76.59; Mar. 15, 95.85, pumping; May 17, 84.94; July 13, 114.63, pumping; Sept. 14, 90.57; Nov. 12, 80.23.

12.26.7.421. Cecil Johnson. Drilled irrigation artesian well in valley fill, depth 150-160 feet. Highest water level 0.72 above lsd, Jan. 25, 1951; lowest 10.53 below lsd, Sept. 9, 1954. Records available: 1938-41, 1943-54. Jan. 28, 1.87; Mar. 15, 2.73; May 13, *7.97; July 12, *8.74; Sept. 9, 10.53; Nov. 12, 9.90. * Possible discrepancy of a few tenths of a foot between present and previous land-surface datum.

12.26.18.221a. Cecil Johnson. Drilled irrigation water-table well in valley fill, diameter 6 inches, depth 68 feet. Highest water level 14.22 below lsd, Mar. 23, 1945; lowest 18.16 below lsd, Sept. 9, 1954. Records available: 1944-54. Jan. 28, 16.81; Mar. 15, 16.88; May 13, 17.45; July 12, 17.65; Sept. 9, 18.16; Nov. 12, 17.78.

12.26.29.333. T. S. Lawing. Drilled unused water-table well in valley fill, diameter 13 inches, reported depth 250 feet. Highest water level 14.20 below lsd, Jan. 25, 1940; lowest 20.02 below lsd, Sept. 14, 1953. Records available: 1939-54. Jan. 28, 16.65; Mar. 15, 16.60; May 17, 17.52; July 13, 19.58; Sept. 9, 19.90; Nov. 12, 14.55.

13.25.14.231. F. W. Pfeiffer. Drilled domestic water-table well in valley fill, diameter 12 inches, depth 152 feet. Highest water level 40.12 below lsd, Jan. 28, 1942; lowest 89.99 below lsd, Nov. 5, 1953. Records available: 1940-54. Jan. 26, 81.14; Mar. 15, 89.07, nearby well being pumped.

13.25.14.231a. F. W. Pfeiffer. About 200 feet south of 13.25.14.231. Drilled irrigation well. Highest water level 91.42 below lsd, May 17, 1954; lowest 93.33 below lsd, Nov. 12, 1954. Records available: 1954. May 17, 91.42; July 13, 117.95, pumping; Sept. 14, 117.90, pumping; Nov. 12, 93.33.

13.25.17.411. R. Thaman. Drilled stock water-table well in valley fill, diameter 6 inches, depth 148 feet. Highest water level 55.08 below lsd, Feb. 3, 1942; lowest 133.67 below lsd, Nov. 5, 1953. Records available: 1939, 1941-54. Jan. 27, 82.55; May 17, 113.31, pumped recently; July 13, 132.02, pumping, possible discrepancy of a few tenths of a foot between present and previous lsd; Sept. 14, 116.15, pumping; Nov. 15, 110.35, pumping.

13.25.27.211. Greenfield well. Drilled artesian well in limestone member of San Andres formation, diameter 10 inches, depth 880 feet, depth to artesian aquifers 740, 795. Land-surface datum is 3,523.76 feet above msl. Highest water level 12.94 above lsd, Jan. 13, 1942; lowest 117.43 below lsd, Aug. 20, 1954. Records available: 1940-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.93	.....	32.67	78.46	68.45	77.33	100.81	110.99	57.14	64.68	9.72	8.59
2	2.90	.....	35.49	80.48	64.96	79.44	101.18	110.10	58.16	61.05	11.47	7.88
3	1.36	.....	36.90	82.27	61.68	83.82	102.08	115.45	60.86	56.37	13.00	6.93
4	.79	.....	36.50	76.40	60.53	87.64	97.25	115.15	61.38	54.56	13.16	7.69
5	.94	.....	35.79	71.85	60.39	88.93	95.83	114.55	59.88	55.30	12.92	7.92
6	1.72	.....	36.66	81.82	60.48	83.12	104.28	114.75	57.63	42.68	12.16	6.93
7	1.91	.....	30.97	90.89	61.38	82.15	104.57	101.42	66.07	36.06	12.34	6.38
8	3.91	.....	29.18	91.12	57.95	85.59	98.80	107.54	69.67	32.48	11.58	6.18
9	4.53	17.82	39.26	91.33	52.73	85.32	95.00	108.70	76.48	30.30	12.64	5.91
10	5.16	20.29	40.38	88.25	49.78	87.02	105.00	106.35	80.24	28.37	10.74	5.13
11	4.37	19.11	37.45	80.78	59.69	84.32	105.22	110.80	82.39	27.48	9.35	4.43
12	.....	25.52	35.43	68.93	61.67	84.35	103.58	109.09	78.83	27.14	9.68	4.11
13	5.32	26.00	42.08	64.47	60.10	69.65	107.87	111.97	77.96	25.44	13.78	3.40
14	6.76	23.62	42.48	71.35	58.10	65.68	106.29	114.23	82.45	24.91	13.26	5.39
15	9.05	25.34	41.62	72.30	60.28	.....	105.02	108.95	77.83	22.92	12.94	5.92
16	10.38	28.16	45.07	69.51	59.15	.....	109.82	107.17	74.07	21.37	13.14	8.48
17	9.06	31.78	50.82	67.15	56.71	.....	104.16	110.90	.....	19.42	12.15	7.96
18	8.21	36.04	54.30	64.03	e67.50	.....	97.63	115.07	.....	18.13	11.87	7.48
19	10.34	31.06	56.32	60.05	e65.00	.....	96.61	116.10	.....	16.98	12.76	7.24
20	10.53	30.60	56.38	66.02	65.78	.....	99.91	117.43	.....	16.50	11.58	7.05
21	10.95	34.14	52.32	69.65	69.33	.....	106.64	102.80	.....	16.12	10.55	6.59
22	10.15	32.47	52.91	72.37	66.65	95.88	109.35	91.25	84.42	15.84	12.29	6.70
23	12.10	38.77	e67.35	76.34	.....	100.00	107.80	81.67	82.47	14.48	10.50	6.39
24	10.21	35.83	64.78	79.58	.....	98.94	107.85	64.25	82.03	13.25	9.40	5.78
25	9.35	35.75	67.93	74.10	69.35	97.29	103.90	58.27	76.95	13.05	8.57	5.53
26	12.20	37.03	74.92	71.88	.....	95.68	103.02	56.82	71.05	12.30	7.93	4.73
27	14.02	38.23	75.37	77.12	.....	92.03	108.59	56.10	69.53	13.37	8.00	4.44
28	14.69	34.62	74.44	78.15	.....	92.09	109.41	54.32	74.07	12.84	7.00	.....
29	15.81		72.81	77.83	.....	94.80	110.99	52.87	71.27	13.10	7.65	.....
30	.....		77.67	75.00	66.03	101.31	112.14	51.87	70.73	12.23	7.50	.....
31	.....		86.29		63.64		111.60	55.72		10.34		.....

e Estimated.

13.25.34.323. L. D. and W. F. Kerr. Drilled unused water-table well in valley fill, diameter 12 inches, depth 141 feet. Highest water level 86.31 below lsd, Mar. 12, 1948; lowest 100.14 below lsd, Nov. 15, 1954. Records available: 1948-54. Jan. 25, 98.23; Mar. 15, 98.55; May 17, 98.88; July 13, 99.30; Sept. 14, 99.75; Nov. 15, 100.14.

13.26.7.333. Howard Amason. Drilled unused water-table well in valley fill, diameter 6 inches, depth 118 feet. Highest water level 4.45 below lsd, Oct. 1, 1941; lowest 29.88 below lsd, Aug. 14, 1954. Records available: 1941-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	26.34	.....	h28.05	.....	.....	29.05	29.53	.....	28.90	25.68	h25.99
2	.....	26.32	.....	28.05	.....	.....	29.05	29.57	.....	28.90	25.77	.....
3	.....	26.31	.....	28.06	.....	.....	29.06	29.59	.....	28.89	25.73	.....
4	.....	.....	.....	28.08	.....	.....	29.10	.....	.....	28.87	h25.79	.....
5	.....	26.29	.....	28.09	.....	.....	29.15	.....	.....	28.86	25.76	.....

13.26.7.333--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	27.11	26.29	.....	26.07	.....	.....	29.20	h29.69	.....	.....	25.76	.....
7	27.11	26.28	.....	28.05	.....	.....	29.25	29.69	.....	.....	25.76	.....
8	27.11	26.27	.....	28.03	.....	.....	29.29	29.72	.....	.....	25.82	h25.93
9	27.11	26.26	.....	.....	.....	.....	29.33	29.75	h28.90	.....	25.87	25.95
10	27.09	26.26	.....	.....	.....	.....	29.38	29.76	28.86	.....	25.95	25.91
11	27.07	26.26	.....	.....	.....	.....	29.41	29.78	28.86	.....	26.07	25.92
12	27.04	26.27	.....	.....	.....	.....	29.42	29.81	28.82	.....	e26.16	26.00
13	.....	.....	.....	.....	.....	.....	29.42	29.83	28.78	.....	26.14	25.93
14	.....	.....	.....	.....	.....	.....	29.38	29.88	28.73	h25.72	26.07	25.94
15	.....	.....	h27.37	.....	h28.59	.....	29.39	29.85	28.70	25.68	26.00	25.89
16	.....	26.37	27.38	.....	28.59	.....	29.38	29.83	28.67	25.63	25.97	25.88
17	26.69	26.37	27.42	.....	28.56	h29.21	29.38	29.82	.....	25.60	25.98	25.94
16	26.84	26.40	27.49	.....	28.52	29.22	29.39	29.81	.....	25.60	26.00	25.96
19	26.79	26.42	27.56	.....	28.50	29.27	29.43	29.81	.....	25.59	25.95	25.93
20	26.74	26.45	27.62	.....	28.47	29.29	29.45	29.84	.....	25.57	.....	25.87
21	26.70	26.48	27.69	.....	28.44	29.28	29.49	.....	.....	25.58	.....	25.85
22	26.66	26.50	27.73	.....	28.42	29.27	29.52	.....	.....	25.60	.....	25.84
23	26.61	26.51	27.77	.....	28.42	29.24	29.54	.....	.....	25.59	.....	25.96
24	26.57	.....	.....	.....	28.42	h29.19	29.56	.....	.....	25.58	h25.89	25.97
25	26.53	.....	.....	.....	28.41	29.16	29.57	.....	.....	25.58	.....	25.89
26	26.50	.....	.....	.....	28.40	29.14	29.57	.....	.....	25.61	.....	25.87
27	26.47	.....	.....	.....	28.40	29.12	29.56	.....	.....	25.69	.....	25.84
28	26.44	.....	.....	.....	28.40	29.09	29.55	.....	.....	25.67	.....	25.86
29	26.41		.....	.....	28.40	29.06	29.53	.....	28.91	25.67	.....	25.61
30	26.38		.....	.....	.....	29.05	29.53	.....	28.90	25.68	.....	25.80
31	26.36		.....		.....		29.53	.....		25.68		25.76

h Tape measurement.

13.26.17.321. Leo Nowak. Drilled domestic water-table well in valley fill, diameter 6 inches, depth 122 feet. Highest water level 6.00 below lsd, Apr. 15, 1942; lowest 22.37 below lsd, May 16, 1944. Records available: 1937-54. Jan. 26, 27.55, pumped recently; Mar. 15, 20.40; May 17, 22.63, pumped recently; July 13, 32.49, pumped recently; Sept. 14, 19.48; Nov. 12, 18.28.

13.26.23.111. S. A. and L. A. Wasson. Formerly Horton Burke. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 267 feet. Highest water level 3.55 below lsd, Feb. 2, 1942; lowest 11.16 below lsd, Sept. 10, 1951. Records available: 1938-54. Jan. 26, 7.26; Mar. 15, 8.09; May 17, 10.08; July 13, 41.91, pumping; Nov. 12, 6.65.

13.26.28.121. G. L. Grassie. Drilled stock water-table well in valley fill, diameter 6 inches. Highest water level 13.99 below lsd, Apr. 5, 1941; lowest 37.23 below lsd, July 13, 1954. Records available: 1938-54. Jan. 26, 22.91; Mar. 15, 30.30; May 17, 29.70; July 13, 37.23; Sept. 14, 26.14; Nov. 15, 22.73.

14.23.8.144. Formerly 14.23.8.340. M. D. Kincaid. Drilled stock water-table well in limestone member of San Andres formation, diameter 8 inches, depth 460 feet. Land-surface datum is 3,845 feet above msl. Highest water level 257.55 below lsd, Feb. 9, 1943; lowest 284.85 below lsd, Sept. 13, 1954. Records available: 1940-54. In intake area of artesian aquifer. Jan. 21, 279.64; Mar. 16, 279.90, pumped recently; May 18, 281.89; July 14, 283.39; Sept. 13, 284.85; Nov. 13, 263.20.

14.23.24.444. Rosendo Casarez. Formerly M. D. Kincaid. Drilled stock water-table well in valley fill, diameter 6 inches, depth 178 feet. Highest water level 152.15 below lsd, July 13, 1951; lowest 164.22 below lsd, Sept. 13, 1954. Records available: 1951-54. Jan. 21, 159.10; Mar. 16, 159.44; May 18, 161.45; July 14, 162.95; Sept. 13, 164.22; Nov. 13, 162.62.

14.25.1.344a. V. F. Flores Estate. Drilled domestic water-table well in valley fill, diameter 6 inches, depth 135 feet. Highest water level 71.19 below lsd, Jan. 23, 1950; lowest 105.02 below lsd, Sept. 14, 1954. Records available: 1949-54. Jan. 23, 94.60; Mar. 15, 96.24; May 17, 101.73; July 14, 104.62; Sept. 14, 105.02; Nov. 15, 101.75.

14.25.2.233a. Massey & Dale. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 200 feet. Highest water level 52.13 below lsd, Jan. 27, 1942; lowest 106.41 below lsd, Sept. 14, 1954. Records available: 1940-54. Jan. 23, 99.35; Mar. 15, 99.26; May 17, 103.67; July 14, 118.00, pumping; Sept. 14, 106.41; Nov. 15, 104.93.

14.25.20.443. Breeb Hurst. Drilled unused water-table well in valley fill, diameter 10 inches, depth 86 feet. Highest water level 71.46 below lsd, Jan. 22, 1942; lowest 77.98 below lsd, July 14, 1954. Records available: 1938-54. Jan. 21, 77.76; Mar. 16, 77.82; May 18, 77.97; July 14, 77.98; Sept. 13, 77.66; Nov. 13, 76.92.

14.25.25.221. John M. Norris. Drilled unused water-table well in valley fill, diameter 6 to 4 inches. Highest water level 24.50 below lsd, Jan. 16, 1926; lowest 82.01 below lsd, Feb. 27-28, Mar. 1, 1953. Records available: 1926, 1937-47, 1949, 1951-53. Daily or bi-monthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

14.26.7.433. Henry Johnson. Formerly O. T. Kunkel. Drilled unused domestic water-table well in valley fill, diameter 10 inches, depth 126 feet. Highest water level 88.15 below lsd, Jan. 21, 1953; lowest 104.54 below lsd, Sept. 14, 1954. Records available: 1953-54. Jan. 24, 99.03; Mar. 15, 99.38; May 17, 100.68; July 14, 109.38, nearby well being pumped; Sept. 14, 104.54; Nov. 15, 102.60.

14.26.12.433b. Commins. Drilled irrigation water-table well in valley fill. Highest water level 12.50 below lsd, Jan. 22, 1942; lowest 20.10 below lsd, Sept. 10, 1951. Records available: 1940-54. Jan. 20, 17.70; Mar. 16, 18.34; May 17, 19.78; July 14, 36.85, pumping; Sept. 14, 18.70; Nov. 15, 17.05.

14.26.15.333. Dub Andrus. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 178 feet. Highest water level 13.61 below lsd, Oct. 16, 1941; lowest 57.29 below lsd, Sept. 14, 1954. Records available: 1938-54. Jan. 20, 47.93; Mar. 16, 49.11; May 17, 55.27, pumped recently; July 14, 54.84; Sept. 14, 57.29; Nov. 15, 52.39.

14.26.19.444a. E. E. Lane. Drilled domestic water-table well in valley fill, diameter 16 inches, depth 109 feet. Highest water level 86.74 below lsd, Mar. 14, 1949; lowest 103.79 below lsd, Nov. 10, 1953. Records available: 1949-53. Measurement discontinued.

14.26.30.111. State Engineer and Pecos Valley Artesian Conservancy District. Drilled water-table well in sands and gravels in Orchard Park terrace of Pecos Valley fill, diameter 9 inches, depth 210 feet, cased to 190, perforation 95-190. Highest water level 81.36 below lsd, July 15, 1953; lowest 86.58 below lsd, Dec. 11, 14, 1954. Records available: 1953-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	h83.97	.....	84.66	85.08	85.38	85.69	85.99	86.27	86.54
2	.....	.....	.....	84.00	.....	84.71	85.09	85.39	85.68	86.00	86.25	86.53
3	.....	.....	.....	84.00	.....	84.73	85.10	85.41	85.69	86.01	86.28	86.53
4	.....	.....	.....	84.02	.....	84.73	85.11	85.43	85.70	86.02	86.30	86.52
5	.....	.....	.....	84.02	.....	84.74	85.12	85.43	85.72	86.03	86.31	86.56
6	h83.57	.....	.....	.....	.....	84.76	85.13	85.46	85.72	86.05	86.33	86.53
7	83.57	.....	.....	.....	.....	84.80	85.14	85.47	85.73	86.07	86.34	86.54
8	83.56	.....	.....	.....	.....	.....	85.14	85.48	85.75	86.06	86.36	86.57
9	83.57	.....	.....	.....	.....	.....	85.15	85.48	85.77	86.08	86.38	86.55
10	83.58	.....	.....	.....	.....	.....	.....	85.48	85.77	86.08	86.39	86.55
11	83.56	.....	.....	.....	.....	.....	.....	85.49	85.77	86.10	86.40	86.58
12	83.56	.....	.....	.....	.....	.....	.....	85.51	85.78	86.11	86.40	86.57
13	83.56	.....	.....	.....	.....	.....	.....	85.51	85.80	86.12	86.42	86.55
14	.....	.....	.....	.....	.....	.....	85.17	85.52	85.81	86.10	86.44	86.58
15	.....	.....	83.90	.....	.....	.....	85.17	85.53	85.81	86.10	86.46	86.50
16	.....	.....	83.87	.....	.....	.....	85.17	85.52	85.82	86.10	86.43	86.52
17	h83.58	.....	83.84	.....	h84.44	h84.87	85.16	85.54	85.83	86.12	86.45	86.53
18	83.59	.....	83.87	.....	84.42	84.88	85.17	85.56	85.84	86.13	86.46	86.52
19	83.58	.....	83.88	.....	84.47	84.89	85.17	85.57	85.85	86.13	86.46	86.53
20	.....	.....	83.87	.....	84.49	84.90	85.17	85.57	85.87	86.14	86.47	86.52
21	.....	.....	83.88	.....	84.49	84.91	85.20	85.60	85.87	86.15	86.47	86.52
22	.....	.....	83.89	.....	84.50	84.94	85.21	85.59	85.88	86.16	86.48	86.52
23	.....	.....	.....	.....	84.53	84.95	85.23	85.63	85.89	86.17	86.49	86.52
24	83.58	.....	.....	.....	84.56	84.96	85.25	85.61	85.92	86.17	86.50	86.52
25	83.56	.....	.....	.....	84.56	85.01	85.27	85.65	85.92	86.18	86.51	86.52
26	83.58	.....	.....	.....	84.57	85.02	85.28	85.67	85.93	86.21	86.51	86.51
27	83.58	.....	.....	.....	84.59	85.03	85.30	85.67	85.93	86.21	86.49	86.52
28	83.56	.....	.....	.....	84.61	85.04	85.32	85.67	85.95	86.22	86.52	86.52
29	83.56		.....	.....	.....	85.05	85.34	85.67	85.97	86.22	86.51	86.51
30	83.58		.....	.....	.....	85.07	85.35	85.67	85.98	86.24	86.54	86.51
31	83.57		.....		h84.69		85.37	85.68		86.24		86.50

h Tape measurement.

14.26.35.344a. J. Q. Mitchell. Drilled stock and domestic water-table well in valley fill, diameter 6 inches. Highest water level 73.63 below lsd, Nov. 11, 1952; lowest 76.68 below lsd, Nov. 16, 1954. Records available: 1952-54. Jan. 20, 75.45; Mar. 16, 75.59; May 19, 75.89; July 15, 76.17; Sept. 15, 76.50; Nov. 16, 76.68.

15.24.32.211. Carl Mangum. Drilled stock water-table well in valley fill, diameter 10 inches, depth 200 feet. Highest water level 37.63 below lsd, Jan. 9, 1945; lowest 68.17 below lsd, July 15, 1954. Records available: 1940-54. Jan. 18, 60.69; Mar. 16, 61.96; May 19, 63.95; July 15, 66.17; Sept. 15, 67.66; Nov. 16, 62.90.

15.25.35.111. M. M. Spence. Drilled domestic water-table well in valley fill, diameter 6 inches. Highest water level 12.48 below lsd, Oct. 15, 1941; lowest 35.78 below lsd, Sept. 16, 1953. Records available: 1938-54. Jan. 18, 34.10; Mar. 16, 33.78; May 19, 37.34, pumping; July 15, 33.14; Sept. 15, 33.90, pumping; Nov. 16, 27.66.

15.26.4.444. Mrs. H. B. Cowan. Drilled unused water-table well in valley fill, diameter 6 inches, depth 106 feet. Highest water level 32.71 below lsd, Nov. 12, 1941; lowest 60.31 below lsd, July 14, 1954. Records available: 1939-54. Jan. 19, 51.11; Mar. 16, 58.58; May 19, 54.08; July 14, 60.31; Sept. 15, 53.88; Nov. 16, 51.87.

15.26.19.212. Jim Revado. Drilled domestic and stock water-table well in valley fill, diameter 6 inches, depth 104 feet. Highest water level 39.53 below lsd, Jan. 17, 1951; lowest 46.90 below lsd, Sept. 15, 1954. Records available: 1951-54. Jan. 18, 45.13; Mar. 16, 45.44; May 19, 45.88; July 15, 46.32; Sept. 15, 46.90; Nov. 16, 47.58, pumping.

Curry County

Clovis area.--Curry County is in east-central New Mexico on the High Plains section of the Great Plains province. Measurements of water levels were begun in the Clovis area in 1954 to determine the effect of pumping and precipitation upon the ground-water body. As Curry County is one of the areas in which use of ground water for irrigation has recently begun, no previous records have been published. Rapid development of irrigation, which is exclusively with ground water, began in Curry County in 1953. In order to obtain information on the number and location of irrigation wells in the county, the position of the water table before pumping started, the thickness and character of the water-bearing formation, the qualityof the water, and the characteristics of the wells, the Geological Survey in cooperation with the New Mexico State Engineer made a reconnaissance of Curry County in February and March 1954. During this period all known irrigation wells were visited. By March 1954 about 150 wells had been drilled, and by the end of 1954 about 250 wells had been drilled. In February, March, and April, 1954, water levels were measured in about 100 irrigation wells. Measurements were made in 12 wells at bimonthly intervals during 1954 and in 46 wells in January 1955. The winter measurements, not all of which are listed in this report, were used in preparing the map showing the change in water levels in 1954. (See fig. 55.)

During 1953 an estimated 20,000 acres was irrigated, and during 1954 the area was increased to about 40,000 acres. Most of the irrigated lands are in the southeastern part of Curry County in Tps. 1 to 3 N., Rs. 35 to 37 E. The precipitation at Clovis in 1954 was 14.86 inches, compared with a 44-year annual average of 17.54 inches. Precipitation at Clovis during the growing season (April to September) was 9.89 inches, compared with a 44-year average of 11.25 inches. About 62 percent of the precipitation in 1954 fell during August.

Figure 55 shows the changes in water levels in observation wells from February, March, and April, 1954, to January 1955. The measurements indicate an average net decline of about 2 feet. The changes in water level over most of the area were irregular, ranging from a rise of 1.4 feet to a decline of 7.7 feet in the various observation wells. At the present early stage of development in this area, it appears probable that the net changes in water level in 1954 were mainly the result of pumping of the individual wells rather than integration of effects from more distant wells. As irrigation in the county continues, a more uniform pattern of the annual changes in water level should develop, and levels may be expected to decline at a fairly uniform rate. After the pumping becomes stabilized, the areas of water-level decline will continue to expand, but the magnitude of annual decline should become smaller.

Clovis Area

1.32.7.300. Previously listed as Roosevelt County 1N.32.7.300. W. J. Crenshaw. Drilled stock water-table well in valley fill, diameter 14 inches, depth 50 feet. Highest water level 14.68 below lsd, May 11, 1944; lowest 18.89 below lsd, July 11, 1940. Records available: 1931-54. Pumping. Jan. 18, 18.07; Mar. 24, 18.23; May 24, 16.30; July 23, 18.53; Sept. 22, 16.70; Nov. 23, 17.20.

1.36.6.121. R. W. Hyman. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 317 feet. Highest water level 164.60 below lsd, Feb. 24, 1954; lowest 165.73 below lsd, Sept. 22, 1954. Records available: 1954. Feb. 24, 164.60; May 26, 165.13; July 26, 186.40, pumping; Sept. 22, 165.73; Nov. 23, 165.63.

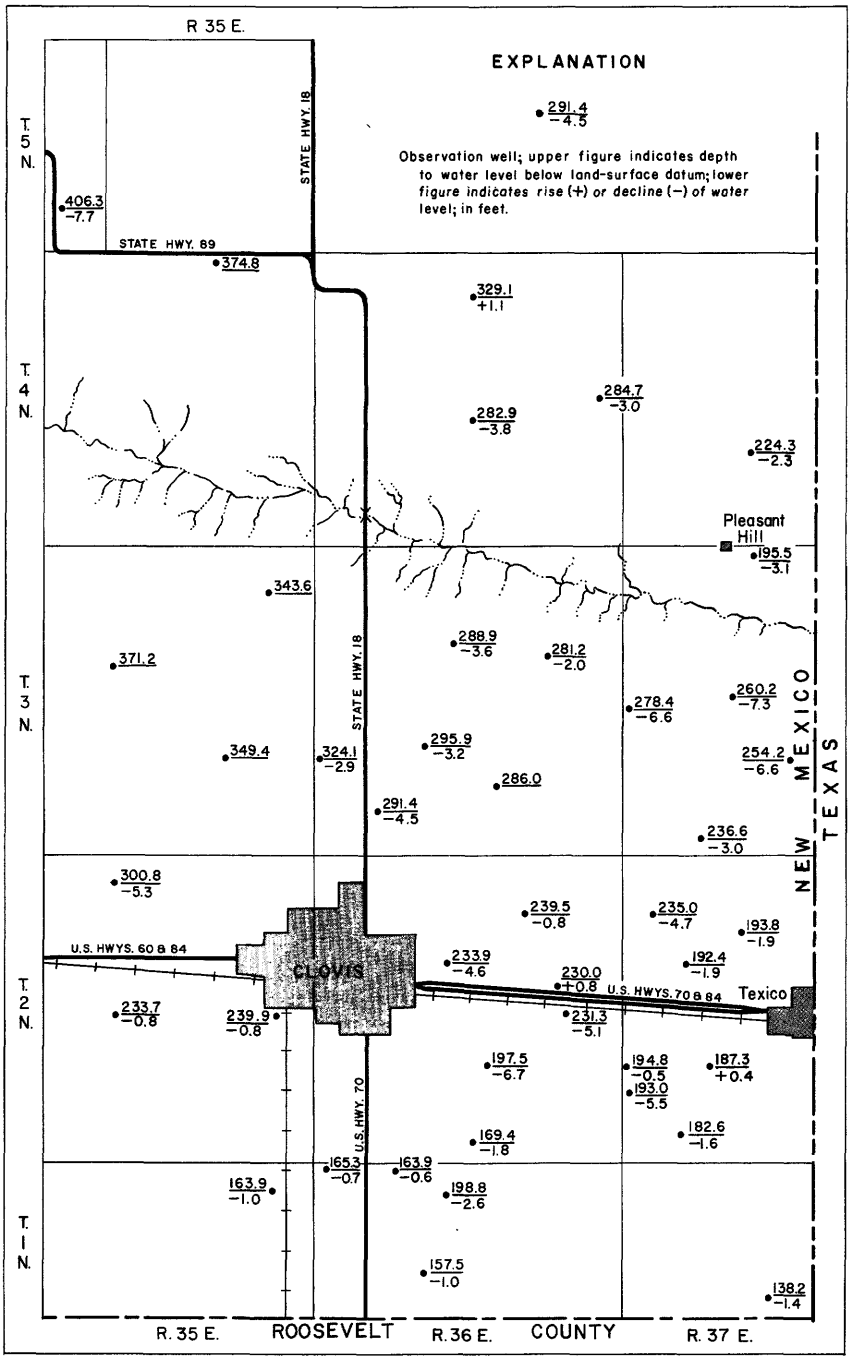


Figure 55.--Water level in January 1955 and change in ground-water level from 1954 in the Clovis area of High Plains, Curry County, N. Mex.

1.36.16.111. H. E. Hathorn. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 264 feet. Highest water level 156.56 below lsd, Feb. 23, 1954; lowest 158.95 below lsd, Sept. 22, 1954. Records available: 1954. Feb. 23, 156.56; May 26, 159.90, pumped recently; July 26, 177.58, pumping, measurement uncertain; Sept. 22, 158.95; Nov. 23, 157.57.

1.37.16.422. Sam McLarty, Jr. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 338 feet. Highest water level 136.78 below lsd, Feb. 17, 1954; lowest 138.67 below lsd, Nov. 23, 1954. Records available: 1954. Feb. 17, 136.78; May 26, 138.49; July 26, 143.03, nearby well being pumped; Sept. 22, 138.60; Nov. 23, 138.67.

2.36.11.111. Harold Holland. Drilled irrigation water-table well in Ogallala formation. Highest water level 238.65 below lsd, Mar. 4, 1954; lowest 247.77 below lsd, May 26, 1954. Records available: 1954. Mar. 4, 238.65; May 26, 247.77; Sept. 23, 252.19, pumping; Nov. 24, 239.65.

2.36.14.441. W. W. Bomar. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 387 feet. Highest water level 230.89 below lsd, Mar. 1, 1954; lowest 235.06 below lsd, Nov. 24, 1954. Records available: 1954. Mar. 1, 230.89; July 26, 249.49, pumped recently; Nov. 24, 235.06.

2.37.9.321. Gene Lovelace. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 362 feet. Highest water level 191.90 below lsd, Mar. 1, 1954; lowest 195.39 below lsd, Sept. 23, 1954. Records available: 1954. Mar. 1, 191.90; May 26, 194.10; July 26, 215.30, pumping; Sept. 23, 195.39; Nov. 24, 194.08.

2.37.22.444. Frank Seale. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 285 feet. Highest water level 191.01 below lsd, Nov. 24, 1954; lowest 192.02 below lsd, Sept. 23, 1954. Records available: 1954. Mar. 2, 191.53; July 26, 214.88, pumping; Sept. 23, 192.02; Nov. 24, 191.01.

3.34.23.433. Archie Baker. Drilled unused irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 418 feet. Highest water level 340.79 below lsd, Sept. 23, 1954; lowest 340.98 below lsd, Apr. 21, Nov. 24, 1954. Records available: 1954. Apr. 21, 340.98; May 27, 340.85; July 27, 340.83; Sept. 23, 340.79; Nov. 24, 340.98.

4.36.10.111. O. E. Pattison. Drilled irrigation water-table well in Ogallala formation, diameter 18 inches, reported depth 411 feet. Highest water level 328.37 below lsd, July 26, 1954; lowest 330.25 below lsd, Mar. 6, 1954. Records available: 1954. Mar. 6, 330.25; May 26, 328.76; July 26, 328.37; Sept. 23, 330.13; Nov. 24, 328.75.

6.36.35.122. Paul Harrison. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 373 feet. Highest water level 300.55 below lsd, Mar. 27, 1954; lowest 303.94 below lsd, Sept. 23, 1954. Records available: 1954. Mar. 27, 300.55; May 27, 300.76; Sept. 23, 303.94; Nov. 24, 302.97.

7.37.32.131. Roy M. Potts. Drilled irrigation water-table well in Ogallala formation. Highest water level 225.45 below lsd, Nov. 24, 1954; lowest 227.40 below lsd, Sept. 23, 1954. Records available: 1954. Mar. 26, 225.81; May 27, 226.12; Sept. 23, 227.40; Nov. 24, 225.45.

Eddy County

Roswell basin.--The general discussion of water-level changes in the Eddy County part of the Roswell basin has been included with Chaves County, as the areas are one continuous ground-water province. The tabulation of water-level measurements for Eddy County is placed after the discussion of the Carlsbad area.

Carlsbad area.--The Carlsbad ground-water basin, as declared by the State Engineer, includes an area of about 635 square miles. It is estimated that about 32,500 acres of this area, about 23,500 of which is in the Carlsbad Irrigation District, has been irrigated. Land within the irrigation district receives water diverted from the Pecos and Black Rivers when available. These surface-water supplies generally are supplemented by ground-water supplies pumped from wells. Of the 9,000 acres of irrigated land outside the irrigation district, about half is irrigated by water diverted from the Pecos and Black Rivers and from Blue Springs by private users; the remainder is irrigated with ground water pumped from wells. The principal areas irrigated entirely from wells are (1) south of Carlsbad and west of the Southern Canal and (2) the upper Black River valley. Two aquifers furnish most of the ground-water supplies in the Carlsbad basin. In the vicinity of La Huerta, West Carlsbad, and Happy Valley, water is pumped from solution channels in limestone of the Carlsbad group. South of Carlsbad and in the Black River valley, ground water is pumped from alluvium of the valley fill. In La Huerta and part of Carlsbad, water is pumped from both limestone and alluvium. It is estimated that in 1954 a total of about 16,300 acre-feet of water was pumped from limestone of the Carlsbad group, and about 51,200 acre-feet was pumped from the alluvium.

A survey made during July 1954 indicated that about 30,530 acres was being irrigated--about 24,220 acres largely or entirely with ground water pumped from wells and about 6,310 acres entirely with surface water diverted from streams. The crop acreage consisted of cotton, 62 percent; alfalfa, 22 percent; maize, 7 percent; castor beans, 3 percent; barley, 3 percent; irrigated pasture, 2 percent; and others, 1 percent. All crops, except alfalfa, require about six applications of water per year. Although alfalfa usually requires about 12 applications per year, many alfalfa fields did not receive a full quota of water because they were so severely damaged by aphids that further irrigation would have been impracticable. It is estimated that, on the average, alfalfa used about twice as much water per acre during 1954 as other crops in the area.

Precipitation in the vicinity of Carlsbad has been deficient since 1950. At the U. S. Weather Bureau station 4 miles south of Carlsbad, the precipitation for the past 5 years was as follows: 1950, 13.4 inches; 1951, 6.1 inches; 1952, 5.5 inches; 1953, 7.3 inches; and 1954, 8.3 inches. Normal annual precipitation at this station is 13.3 inches. The first 3 months of 1954 were extremely dry; not more than a trace of precipitation was recorded. Although showers in April and May amounted to 1.7 inches, the total precipitation for the first 7 months was only 1.9 inches. The persistent dry weather was relieved by heavy general rains during August and October. On August 22, 23, and 24, rainfall of 2.9 inches was recorded. It was a slow soaking rainfall with only slight runoff; consequently, vegetation received maximum benefit. The precipitation supplied the final irrigation of cotton and other crops, and heavy pumping stopped for the season. On October 4, 5, and 6, 2.7 inches of precipitation was recorded. However, 6 or more inches of rainfall was reported by residents in the area westward within the drainage basin. Almost every arroyo in the Carlsbad area flooded, and the Pecos River flooded for several days. Recharge to the ground-water reservoir was indicated by a rise of water levels in observation wells in the limestone of the Carlsbad group and in the alluvium. The greatest recorded rise was in the airport well 22.26.36.111a in alluvium (about 4 miles south of Carlsbad and about 300 feet from Dark Canyon Draw), where water levels rose 11 feet in about 2 days after the flood and about 3 feet during the following week.

Surface water diverted at Lake Avalon for use in the Carlsbad Irrigation District during the past 5 years was as follows, in acre-feet: 1950, 89,300; 1951, 91,160; 1952, 71,350; 1953, 55,450; and 1954, 54,330. Carlsbad Irrigation District officials estimate that about 65 percent of this water was delivered to the fields. Of the 54,330 acre-feet diverted in 1954, about 24,000 acre-feet was diverted after the heavy rains of August and October and after the normal growing season. These quantities of water were not sufficient to complete a crop in this area and had to be supplemented by heavy pumping from wells.

Changes of ground-water level in the Carlsbad area during 1954, measured in 86 observation wells, ranged from a decline of more than 4 feet to a rise of more than 6 feet, rises predominating over declines. (See fig. 56.) A rise of more than 6 feet was indicated in 1 square mile, more than 4 feet in 5 square miles, and more than 2 feet in 17 square miles. A decline of more than 2 feet was indicated in about 6 square miles. All rises in water level were caused, directly and indirectly, by the heavy general rainstorms in the drainage basin during August and October. The principal factors effecting these rises, not necessarily in the order of importance, are (1) infiltration of water into the ground-water reservoir from the general land surface and from flooded arroyos during and after the storms, (2) infiltration of water from irrigated fields and irrigation systems which were supplied by water precipitated during the storms, (3) a shortened pumping season, which reduced the quantity of water that would have been pumped from wells and also allowed more time for recovery of water levels prior to measurement.

The greatest rises in water level were south and southeast of Carlsbad over a distance of about 5 miles in an area divided by the Southern Canal. The ground water in this area is in the alluvium. The greatest declines in previous years were in the part of this area west of the Southern Canal. Moderate declines of water levels in wells during 1954 were indicated in an area 1 to 3 miles around Otis. The recharge due to heavy rains in August and October was not sufficient to compensate for heavy withdrawals of water from wells in this area earlier in the season. A general decline of ground-water level, over a large area, was noted for the 5-year period January 1950 to January 1955. The decline was as much as 40 feet in a small area, whose center was about 3 miles west of Otis. A decline of more than 35 feet was indicated in about 1 square mile, more than 30 feet in about 4 square miles, more than 20 feet in 24 square miles, more than 10 feet in 51 square miles, and more than 5 feet in about 87 square miles. The maximum declines were west of the Southern Canal, where surface water is not available for irrigation and where there is heavy pumping of ground water throughout the irrigation season. Large declines over the 5-year period were noted also in the vicinity of Otis where irrigation with ground water pumped from wells supplements irrigation with surface water.

Rises of ground-water level of slightly more than 1 foot during 1954 were noted in most of the wells that derive water from limestone of the Carlsbad group. Water in interconnecting solution channels in the limestone easily moves through the aquifer; consequently, in the vicinity of Carlsbad, it stands at about the same level and rises or declines with relative uniformity. (See fig. 57.) Thus, measured fluctuations in a single well in limestone of the Carlsbad group could be an index of the water-level fluctuations within that formation in a large area. Irrigated

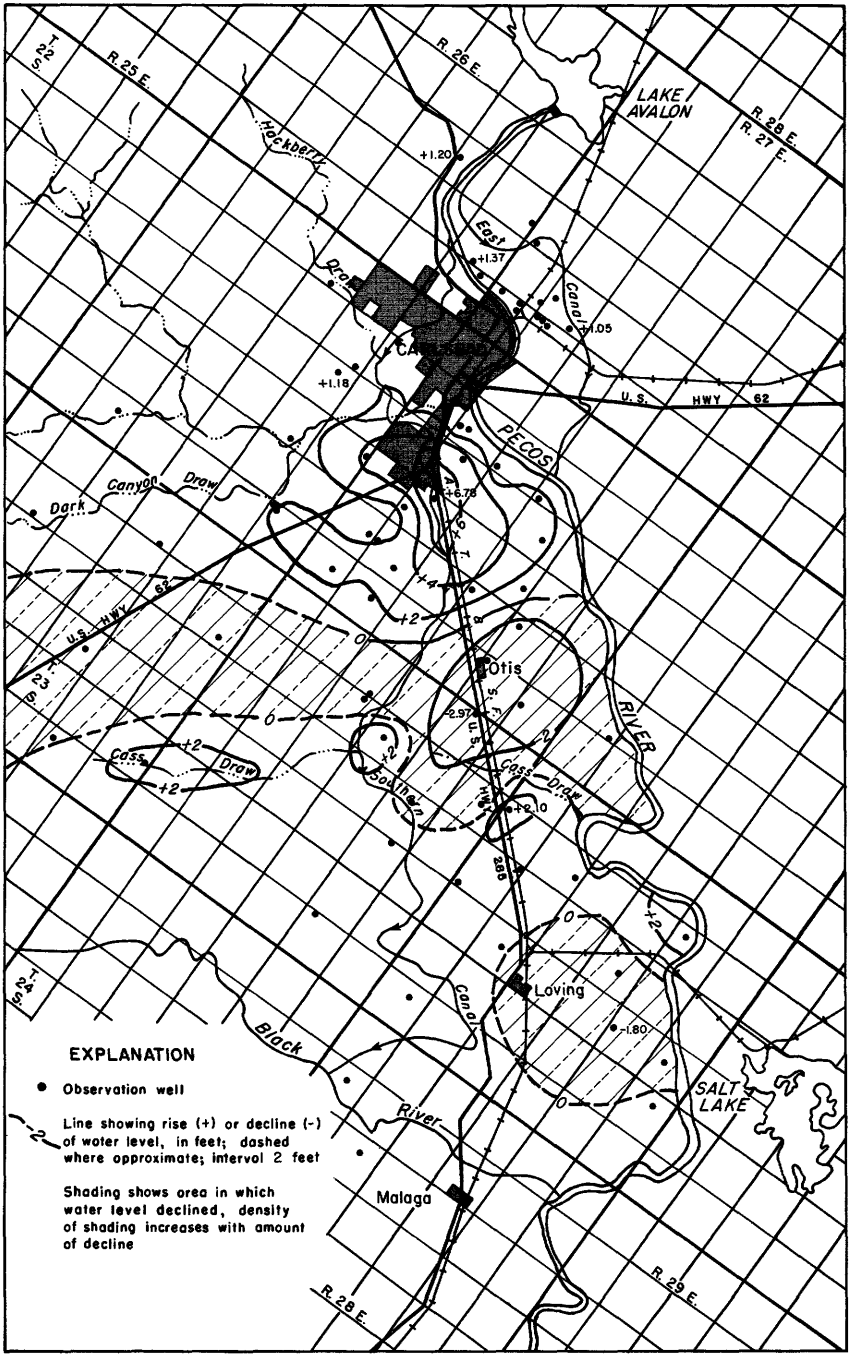


Figure 56.--Change in ground-water level from January 1954 to January 1955 in Carlsbad area, Eddy County, N. Mex.

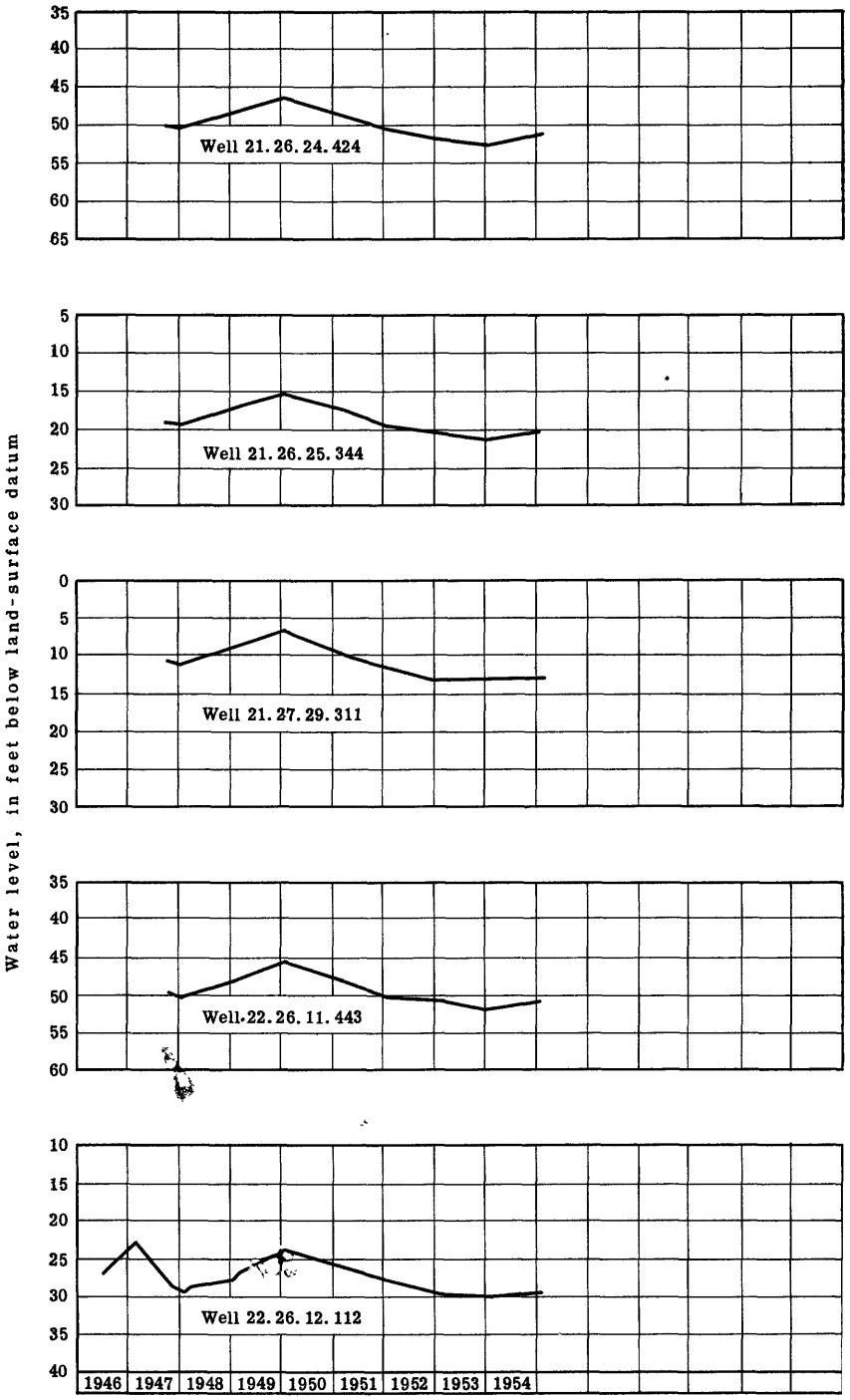


Figure 57. --Water levels in 5 wells in the limestone aquifer near Carlsbad, N. Mex.

areas underlain by saturated limestone containing interconnecting solution channels include the vicinity of La Huerta, the western half of Carlsbad, and the area from Happy Valley southward for about 3 miles.

Water-level measurements in the part of the area along the Upper Black River showed slight changes from January 1954 to January 1955, ranging, except for 1 well, from a decline of 0.5 foot to a rise of 0.8 foot. Five wells in T. 25 S., R. 24 E., in the vicinity of Rattlesnake Springs, showed an average decline of 0.3 foot; 4 wells in T. 26 S., R. 24 E. showed an average rise of 0.6 foot. One well showed a rise of 6.3 feet, but it is not considered significant because the water level in January 1954 was unreasonably low as compared to the level at other times in the well. The rise in water levels was due to recharge from the heavy rains.

Water levels south of Carlsbad and east of the Southern Canal may continue to rise during 1955, if surface water is used for irrigation in the Carlsbad Irrigation District. Water levels in the irrigated area west of the Southern Canal, which does not receive surface water, may continue the general trend of decline, unless precipitation during 1955 is sufficient to cause additional rise.

Roswell Basin

16.23.15.323. D. W. Runyan. Drilled stock water-table well in limestone member of San Andres formation, diameter 10 inches, depth 1,485 feet. Highest water level 211.87 below lsd, Mar. 25, 1945; lowest 239.30 below lsd, Sept. 16, 1954. Records available: 1940-54. In intake area of artesian aquifer. Jan. 16, 234.90; Mar. 17, 235.29; May 20, 236.75; July 16, 238.70; Sept. 16, 239.30; Nov. 18, 237.75.

16.25.1.344. Noah Buck. Formerly Buck Bros. Drilled domestic and stock water-table well in valley fill, diameter 6 inches, reported depth 120 feet. Highest water level 9.50 below lsd, Jan. 16, 1942; lowest 45.32 below lsd, Sept. 11, 1951. Records available: 1938-54. *Jan. 15, 38.42; *Mar. 18, 50.34; *May 19, 52.40; *July 15, 60.94; *Sept. 15, 58.27; Nov. 16, 28.35. *Pumped recently.

16.25.6.Lot 4. F. M. Nelson. Drilled unused water-table well in valley fill, diameter 6 inches, depth 100 feet. Highest water level 9.46 below lsd, May 19, 1954; lowest 15.97 below lsd, Dec. 6, 1943. Records available: 1937-54. Jan. 17, 11.37; Mar. 16, 11.00; May 19, 9.46; July 15, 10.58; Sept. 15, 10.47; Nov. 16, 9.98.

16.25.6.313. Frank Childress. Drilled unused water-table well in valley fill, diameter 20 inches. Highest water level 27.06 below lsd, Apr. 23, 1942; lowest 30.59 below lsd, Aug. 9-10, 1954. Records available: 1937-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	29.76	.....	29.88	30.37	.....	.....	30.50	30.05	29.75
2	.....	.....	.....	29.76	.....	29.87	30.35	.....	.....	.....	30.07	29.80
3	.....	.....	.....	29.72	.....	29.89	30.35	.....	.....	.....	30.02	29.72
4	.....	.....	.....	29.68	.....	29.98	30.35	.....	.....	.....	30.02	29.62
5	.....	.....	.....	29.68	.....	29.90	30.36	.....	.....	.....	30.08	29.62
6	29.82	.....	.....	29.68	.....	29.90	30.33	h30.53	.....	.....	30.01	.....
7	29.72	.....	.....	29.66	.....	.....	30.32	30.53	.....	.....	29.97	.....
8	29.66	.....	.....	29.71	.....	.....	30.33	30.56	.....	.....	29.97	29.59
9	29.66	.....	.....	29.83	.....	.....	30.33	30.59	.....	.....	29.97	29.65
10	29.71	.....	.....	.....	.....	.....	30.33	30.59	.....	.....	29.97	29.59
11	29.84	.....	.....	.....	.....	.....	30.33	30.52	.....	.....	.....	29.58
12	29.81	.....	.....	.....	.....	.....	30.34	30.52	.....	.....	.....	29.67
13	.....	.....	.....	.....	.....	.....	30.39	30.49	h30.47	.....	.....	29.61
14	.....	.....	.....	.....	.....	.....	30.40	30.49	30.47	h30.44	.....	29.60
15	.....	.....	.....	.....	.....	.....	30.40	30.51	30.48	30.50	.....	29.52
16	h29.74	.....	29.77	.....	.....	.....	30.43	30.54	30.48	30.42	29.76	29.50
17	29.71	.....	29.56	.....	.....	30.05	30.44	30.51	30.48	30.35	29.76	.....
18	29.67	.....	29.55	.....	.....	30.05	30.41	30.51	30.48	30.35	29.83	.....
19	29.62	.....	29.56	.....	29.81	30.11	30.40	30.50	30.49	30.31	29.89	.....
20	29.62	.....	29.62	.....	29.78	30.18	30.38	30.51	30.49	h30.22	29.80	.....
21	29.76	.....	29.64	.....	29.75	30.16	30.38	.....	.....	30.22	29.80	.....
22	29.81	.....	29.64	.....	29.72	30.16	30.38	.....	.....	30.22	29.82	29.50
23	29.71	.....	29.59	.....	29.71	30.20	30.40	.....	.....	30.22	29.78	29.50
24	29.71	.....	.....	.....	29.71	30.25	30.45	.....	.....	30.14	29.78	29.51
25	29.71	.....	.....	.....	29.78	30.26	30.46	.....	.....	30.12	29.74	.....
26	29.71	.....	.....	.....	.....	30.26	30.47	.....	.....	30.12	29.68	.....
27	29.77	.....	.....	.....	.....	30.29	30.47	.....	.....	30.16	29.71	29.45
28	.....	.....	.....	.....	.....	30.30	30.43	.....	h30.41	30.13	29.71	.....
29	.....		.....	.....	.....	30.30	30.43	.....	30.41	30.13	29.80	29.57
30	.....		.....	.....	.....	30.30	.....	.....	30.46	30.10	29.80	29.52
31	.....		.....		h29.90		.....	.....		30.06		29.46

h Tape measurement.

16.25.11.113. Cottonwood. Drilled observation artesian well in limestone member of San Andres formation, diameter 7 to 4 inches, depth 800 feet, 526 feet of 7-inch casing, 155 feet of 4-inch casing, depth to artesian aquifers 226-230, 526-550, 770-790. Land-surface datum is 3,454.39 feet above msl. Highest water level 40.44 below lsd, Jan. 16, 1952; lowest 91.30 below lsd, Nov. 28, 1954. Records available: 1951-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	52.44	54.93	60.13	61.54	65.20	71.06	83.29	75.25	72.01	66.25	90.86
2	50.10	52.86	55.12	60.54	61.70	65.48	71.50	84.55	75.20	71.70	67.29	90.07
3	50.05	53.16	.....	60.75	61.80	65.85	72.12	84.78	75.24	71.46	68.31	89.15
4	50.02	53.42	.....	60.69	61.70	66.28	72.32	e84.80	75.34	71.37	69.36	88.09
5	50.00	53.72	.....	60.62	61.76	66.54	72.75	.....	75.15	71.38	70.59	87.47
6	50.00	53.85	54.82	60.56	61.68	66.77	73.43	.....	.....	70.62	71.49	86.73
7	50.02	54.13	54.76	60.54	61.64	67.16	74.17	.....	.....	70.23	72.35	86.26
8	50.00	54.06	54.60	60.65	61.59	67.43	75.27	.....	.....	70.05	73.40	86.11
9	49.98	53.88	54.62	60.60	61.59	67.56	76.35	.....	.....	69.88	74.53	86.28
10	49.95	53.75	54.65	60.63	61.48	67.70	76.56	.....	.....	69.39	75.84	86.33
11	49.95	53.73	54.70	60.98	61.45	67.89	72.90	.....	.....	68.92	77.00	86.35
12	.....	53.78	54.70	61.15	61.49	68.05	72.98	.....	.....	68.50	77.91	86.53
13	.....	53.73	54.86	.....	61.44	68.14	73.06	.....	.....	68.10	78.46	86.36
14	.....	53.73	54.84	.....	61.55	68.17	73.21	.....	74.05	67.90	79.17	86.36
15	.....	53.82	54.85	61.43	61.73	68.05	73.62	.....	74.25	67.47	80.08	86.62
16	50.41	53.93	55.06	61.68	62.03	67.98	74.08	.....	74.33	67.12	81.27	86.19
17	50.55	53.95	55.07	61.77	62.15	67.96	74.81	.....	74.26	66.78	83.97	86.27
18	50.70	53.83	55.19	61.64	62.34	68.00	75.46	e77.15	74.09	66.70	85.56	86.44
19	50.80	53.87	55.43	61.61	62.75	68.12	76.12	77.25	73.99	66.30	86.73	86.18
20	50.87	54.10	55.75	61.58	63.01	68.32	76.77	77.35	73.95	65.67	87.74	85.82
21	51.10	54.30	56.09	61.72	63.20	68.36	77.59	77.34	73.87	65.54	88.76	.....
22	51.16	54.47	56.33	62.18	63.40	68.53	77.09	77.33	73.62	65.44	89.37	.....
23	51.15	54.70	56.78	.....	63.57	68.83	78.28	77.20	73.48	65.27	89.74	.....
24	51.21	54.75	57.25	.....	63.60	68.98	79.34	76.87	73.44	65.19	90.24	.....
25	51.23	54.80	57.82	.....	63.67	69.37	80.18	76.82	73.29	65.18	90.77	.....
26	51.32	54.80	58.25	.....	63.99	69.89	80.25	76.74	73.07	65.18	90.77	.....
27	51.44	54.90	58.73	61.69	64.27	70.32	80.17	76.43	72.78	65.21	90.88	.....
28	51.58	55.00	59.09	61.60	64.45	70.54	82.13	76.17	72.65	65.32	91.30	66.29
29	51.70		59.15	61.54	64.58	70.58	81.98	75.82	72.53	65.35	91.10	.....
30	51.85		59.35	61.57	64.84	70.77	82.93	75.60	72.18	65.54	90.88	.....
31	52.19		59.56		64.98		82.98	75.39		65.86		.....

e Estimated.

16.26.19.133a. E. Jeffries. Drilled unused water-table well in valley fill, diameter 13 inches, depth 71 feet. Highest water level 24.30 below lsd, Jan. 11, 1952; lowest dry at 58.87, July 23, 1953, 49.00, Mar. 18, 1954. Records available: 1951-54. Jan. 15, 47.02; Mar. 18, dry at 49.00.

16.26.28.431. Robert Horner. Drilled unused irrigation water-table well in valley fill, diameter 16 inches, depth 200 feet. Highest water level 8.72 below lsd, Jan. 15, 1942; lowest 49.12 below lsd, Sept. 15, 1954. Records available: 1938-54. Jan. 14, 23.64; Mar. 18, 30.17. May 19, 34.20; July 15, 40.45, measurement uncertain; Sept. 15, 49.12; Nov. 16, 32.73.

17.26.7.421. Charles Denton. Drilled irrigation water-table well in valley fill, diameter 8 inches, depth 150 feet. Highest water level 19.24 below lsd, Jan. 14, 1942; lowest 74.53 below lsd, July 16, 1954. Records available: 1938-39,1942-54. Jan. 13, 68.09; Mar. 18, 69.46; May 19, 72.23; July 16, 74.53; Nov. 16, 73.85.

17.26.7.433. Joe Nunn. Drilled irrigation water-table well in valley fill, diameter 10 inches, depth 158 feet. Highest water level 26.90 below lsd, Jan. 14, 1942; lowest 80.74 below lsd, May 19, 1954. Records available: 1938-54. Jan. 12, 76.22; *Mar. 18, 82.15; May 19, 80.74; *July 16, 87.64; *Sept. 15, 88.20; *Nov. 16, 85.44. *Nearby well being pumped

17.26.10.433. D. D. Sullivan. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 210 feet. Highest water level 14.41 below lsd, Jan. 14, 1942; lowest 63.83 below lsd, Sept. 17, 1954. Records available: 1938-54. Jan. 13, 31.50; Mar. 18, 45.31; May 20 37.33; July 16, 67.26, pumping; Sept. 17, 63.83; Nov. 17, 32.30.

17.26.16.333. Artesia Cemetery. Drilled municipal water-table well in valley fill, diameter 6 inches. Highest water level 6.14 below lsd, Jan. 13, 1942; lowest 74.94 below lsd, July 16, 1954. Records available: 1937-54. Jan. 13, 45.86; Mar. 18, 55.65; May 19, 54.75; July 16, 74.94; Sept. 16, 65.13; Nov. 17, 46.60.

17.26.24.333a. Mary E. Yates. Dug observation water-table well in valley fill, diameter 4 inches. Highest water level 2.67 below lsd, Mar. 17, 1952; lowest 6.16 below lsd, Sept. 6, 1952. Records available: 1951-54. Jan. 11, 3.37; Mar. 18, 2.93; May 20, 3.30; July 16, 5.54; Sept. 17, 5.11; Nov. 17, 2.87.

18.23.5.333. Joe Clements. Drilled stock water-table well in limestone member of San Andres formation, diameter 6 inches, depth 420 feet. Highest water level 385.50 below lsd, July 21, 1945; lowest 430.80 below lsd, Nov. 18, 1954. Records available: 1945-54. In intake area of artesian aquifer. Jan. 16, 426.26; Mar. 17, 426.42; May 20, 427.78; July 16, 430.15; Sept. 16, 430.15; Nov. 18, 430.80.

18.25.23.111. Mrs. G. M. Phelps. Drilled unused artesian(?) well in limestone member of San Andres(?) formation, diameter 8 inches, depth 300 feet. Highest water level 90.67 below lsd, Jan. 12, 1942; lowest 158.95 below lsd, July 15, 1954. Records available: 1942-54. Jan. 11, 148.51; Mar. 18, 151.50; May 19, 151.80; July 15, 158.95; Sept. 17, 156.57; Nov. 17, 150.76.

18.26.4.111b. T. A. Southard. Drilled domestic water-table well in valley fill, diameter 6 inches, reported depth 200 feet. Highest water level 18.19 below lsd, Jan. 28, 1943; lowest 70.08 below lsd, July 15, 1954. Records available: 1937-54. Jan. 12, 47.65; Mar. 18, 54.94; May 19, 59.73; July 15, 70.08; Sept. 17, 66.99; Nov. 17, 56.09, pumped recently.

18.26.5.330. Artesia. Drilled unused artesian well in limestone member of San Andres formation, diameter 8 inches, depth 1,056 feet, depth to artesian aquifers 750, 820, 905. Land-surface datum is 3,394.50 feet above msl. Highest water level 8.30 above lsd, Jan. 12, 1942; lowest 129.55 below lsd, Aug. 6, 1954. Records available: 1931-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	49.92	e61.75	63.16	91.20	77.48	93.59	.....	126.83	99.37	94.68	63.60	57.40
2	50.22	63.37	63.68	89.15	75.38	95.90	.....	125.70	100.00	94.75	63.90	56.93
3	50.17	64.14	65.05	88.49	74.57	97.73	115.39	126.35	100.45	93.33	64.20	56.67
4	49.70	63.80	64.33	85.67	75.94	99.39	113.88	127.78	101.90	92.64	64.22	56.49
5	51.39	63.95	63.75	83.50	78.00	101.08	112.62	128.71	100.13	92.82	64.29	56.50
6	52.11	64.03	64.15	85.47	80.02	99.33	114.19	129.55	99.17	88.48	64.03	56.23
7	52.86	61.83	62.07	86.72	81.66	99.32	115.17	129.54	100.72	84.39	63.97	56.18
8	53.42	60.65	61.02	87.58	82.70	99.45	115.40	127.53	100.23	81.63	63.72	56.23
9	53.34	61.49	62.87	87.85	81.61	100.60	115.76	122.55	100.06	79.58	63.48	56.41
10	53.22	62.89	66.00	87.16	80.38	102.54	116.60	119.89	99.60	77.91	63.67	56.61
11	52.43	64.26	.....	82.93	81.57	102.30	115.75	118.95	100.10	76.69	62.88	56.11
12	53.20	64.77	66.79	81.13	82.27	103.59	115.46	119.25	99.77	75.40	62.25	55.12
13	53.84	64.32	.....	80.24	83.82	100.28	118.58	121.08	98.68	74.24	61.63	54.69
14	55.07	62.73	.....	81.76	83.94	e99.50	119.93	121.39	99.75	73.56	61.32	55.77
15	55.83	61.90	.....	81.85	84.50	101.98	119.70	120.60	100.85	72.54	61.02	55.78
16	56.31	62.95	70.64	82.94	82.78	e103.80	120.79	119.90	101.59	71.64	61.25	55.62
17	56.69	63.11	72.53	81.65	81.53	105.35	121.23	120.79	101.68	70.91	61.55	55.70
18	55.90	64.18	e75.50	77.88	82.98	107.43	120.73	122.58	101.39	70.22	61.66	55.60
19	57.57	64.68	77.48	76.72	82.08	107.95	120.00	124.08	98.98	69.60	61.62	55.36
20	58.13	64.42	79.54	79.19	83.12	105.47	120.88	124.83	98.14	68.96	61.84	54.59
21	57.85	62.30	79.49	81.35	84.22	104.46	121.62	125.35	e99.05	68.43	61.22	54.29
22	57.82	61.15	79.39	82.98	83.08	107.47	120.67	124.05	100.51	68.08	60.55	53.94
23	58.33	62.80	83.80	83.75	83.45	107.98	122.09	118.62	100.38	67.38	59.85	53.30
24	58.59	64.48	86.83	82.10	82.44	.....	122.14	110.88	100.57	66.61	59.55	52.79
25	58.46	65.33	87.95	80.04	84.72	.....	123.24	106.86	.....	66.08	59.16	52.53
26	60.70	66.88	90.13	78.68	86.92	.....	122.15	104.43	.....	65.78	58.68	52.17
27	62.65	.....	91.18	78.32	88.83	.....	124.49	103.13	.....	65.43	58.24	51.85
28	64.04	64.47	89.93	78.01	91.25	.....	125.74	102.45	.....	65.08	57.84	51.85
29	63.67		88.21	78.63	93.17	.....	126.41	101.14	.....	64.89	57.04	51.45
30	64.16		90.59	77.86	91.18	.....	126.76	100.55	.....	64.52	57.04	51.37
31	63.00		90.97		89.83		127.10	99.82		63.78		51.42

e Estimated.

18.26.7.234a. C. H. Hutsonpiller. Drilled unused water-table well in valley fill, diameter 8 inches, depth 159 feet. Highest water level 43.50 below lsd, Feb. 9, 1943; lowest 80.05 below lsd, Oct. 7, 14, 1954. Records available: 1937-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	h78.60	.....	79.18	79.41	.....	.....	80.02	79.87	79.69
2	.....	.....	.....	78.62	.....	79.18	79.42	.....	.....	80.02	79.87	79.68
3	.....	.....	.....	78.63	.....	79.18	79.42	.....	.....	80.02	79.86	79.66
4	.....	.....	.....	78.64	.....	79.19	79.43	.....	.....	80.03	79.87	79.65
5	.....	.....	.....	78.65	.....	79.19	.....	.....	.....	80.04	79.87	79.63

18. 26. 7. 234a--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	.....	.....	.....	78.66	.....	79.20	.....	h79.70	.....	80.04	79.87	79.62
7	h77.17	.....	.....	78.67	.....	.....	.....	79.70	.....	80.05	79.86	79.61
8	77.15	.....	.....	78.70	.....	.....	.....	79.71	.....	.....	79.86	79.59
9	77.13	.....	.....	78.71	.....	.....	h79.47	79.71	.....	.....	79.86	79.58
10	77.13	.....	.....	.....	.....	.....	79.48	79.72	.....	.....	79.86	79.56
11	77.10	.....	.....	.....	.....	.....	79.48	79.73	.....	.....	79.80	79.55
12	77.09	.....	.....	.....	.....	.....	79.49	79.73	.....	.....	.....	79.53
13	77.07	.....	.....	.....	.....	.....	79.49	79.73	h79.92	.....	.....	79.52
14	77.07	.....	.....	.....	.....	.....	79.50	79.73	79.93	80.05	.....	79.50
15	77.07	.....	.....	.....	.....	.....	79.50	79.74	79.93	80.03	.....	79.46
16	77.10	.....	.....	.....	.....	.....	79.51	79.75	79.93	80.01	.....	79.45
17	77.12	.....	.....	.....	.....	h79.18	79.52	79.75	79.94	79.99	h79.77	79.43
18	77.16	.....	h78.38	.....	.....	79.19	79.53	79.76	79.94	79.97	79.77	79.41
19	77.18	.....	78.39	.....	h79.08	79.21	79.54	79.77	79.95	79.95	79.77	79.39
20	77.20	.....	78.41	.....	79.09	79.24	79.55	79.78	79.96	79.93	79.77	79.38
21	77.24	.....	78.43	.....	79.10	79.27	79.56	79.79	.....	79.94	79.77	79.36
22	77.26	.....	78.44	.....	79.11	79.29	79.57	.....	.....	79.93	79.77	79.31
23	77.27	.....	78.46	.....	79.13	79.31	79.59	.....	.....	79.92	79.77	79.28
24	77.30	.....	78.47	.....	79.14	79.34	79.60	.....	.....	79.91	79.76	79.25
25	77.31	.....	78.50	.....	79.15	79.36	79.61	.....	.....	79.90	79.75	79.21
26	77.34	.....	78.51	.....	79.17	79.37	79.63	.....	.....	79.90	79.74	79.18
27	77.38	.....	.....	.....	.....	79.38	79.64	.....	.....	79.88	79.73	79.15
28	.....	.....	.....	.....	.....	79.39	79.65	.....	.....	79.88	79.72	79.11
29	.....		.....	.....	.....	79.40	79.67	.....	h80.01	79.88	79.71	79.08
30	.....		.....	.....	.....	79.41	79.68	.....	80.02	79 89	79.70	79.04
31	.....		.....		h79.18		.....	.....		79.87		79.01

h Tape measurement.

18. 26. 24. 223a. Sanders Terry. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 63 feet. Highest water level 4. 29 below lsd, Mar. 19, 1951; lowest 12. 72 below lsd, Sept. 17, 1954. Records available: 1947-54. Jan. 11, 10. 10; Mar. 18, 9. 75; May 20, 10. 08; July 16, 11. 60; Sept. 17, 12. 72; Nov. 17, 6. 66.

18. 26. 28. 121a. Town of Dayton. Drilled observation water-table well in valley fill, diameter 8 inches, depth 250 feet, cased to 182, casing slotted 92-182. Highest water level 59. 79 below lsd, Feb. 5, 1952; lowest 77. 75 below lsd, Dec. 28, 1954. Records available: 1951-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	72.22	72.18	72.44	72.65	73.18	73.74	74.46	75.21	76.02	76.64	77.11	77.55
2	72.25	72.19	72.53	72.69	73.24	73.79	74.49	75.24	76.04	76.68	77.13	.....
3	72.21	72.20	72.51	72.69	73.21	73.83	74.51	75.28	76.05	76.70	77.13	.....
4	72.22	72.21	72.48	72.72	73.22	73.81	74.54	75.29	76.08	76.72	77.18	.....
5	72.20	72.19	72.51	72.75	73.26	73.85	74.55	75.32	76.10	76.74	77.17	.....
6	72.18	72.22	72.48	72.75	73.28	73.89	74.58	75.35	76.11	76.72	77.18	.....
7	72.15	72.24	72.47	72.78	73.31	73.91	74.60	75.38	76.13	76.80	77.19	.....
8	72.14	72.24	72.46	72.79	73.31	73.91	74.62	75.40	76.15	76.80	77.21	.....
9	72.14	72.22	72.45	72.78	73.35	73.95	74.65	75.43	76.18	76.81	77.23	.....
10	72.18	72.24	72.45	72.82	73.34	73.96	74.68	75.45	76.19	76.83	77.25	77.60
11	72.13	72.30	72.43	72.86	73.40	73.99	74.71	75.47	76.20	76.85	77.25	77.62
12	72.13	72.28	72.47	72.87	73.41	74.01	74.74	75.50	76.22	76.89	77.25	77.65
13	72.11	72.29	72.52	72.84	73.42	74.02	74.75	75.54	76.25	76.90	77.25	77.61
14	72.12	72.31	72.49	72.86	73.46	74.05	74.79	75.56	76.27	76.93	77.30	77.64
15	72.13	72.36	72.52	72.91	73.47	74.08	74.80	75.59	76.29	76.94	77.28	77.61
16	72.11	72.37	72.49	72.92	73.50	74.10	74.82	75.60	76.31	76.95	77.30	77.64
17	72.11	72.35	72.44	72.92	73.51	.....	74.84	75.62	76.33	76.97	77.31	77.69
18	72.11	72.34	72.48	72.94	73.52	.....	74.87	75.65	76.35	76.99	77.35	77.70
19	72.11	72.39	72.54	72.97	73.54	.....	74.90	75.68	76.37	76.98	77.36	77.70
20	72.13	72.42	72.54	72.98	73.53	74.18	74.93	75.69	76.40	76.99	77.35	77.68
21	72.15	72.45	72.55	72.99	73.53	74.21	74.94	75.73	76.42	77.00	77.38	77.70
22	72.12	72.43	72.56	.....	73.56	74.25	74.97	75.77	76.43	76.95	77.39	77.69
23	72.11	72.47	72.55	72.99	73.60	74.26	74.99	75.80	76.45	76.96	77.39	77.71
24	72.14	72.43	72.58	.....	73.65	74.29	75.00	75.81	76.50	77.00	77.42	77.70
25	72.14	72.46	72.60	.....	73.61	74.31	75.03	75.84	76.52	77.03	77.41	77.71
26	72.16	72.44	72.59	.....	73.64	74.32	75.05	75.87	76.53	77.05	77.43	77.72
27	72.18	72.47	72.60	73.10	73.66	74.35	75.08	75.90	76.54	77.06	77.40	77.73
28	72.15	72.45	72.60	73.11	73.69	74.38	75.10	75.93	76.56	77.05	77.44	77.75
29	72.17		72.62	73.15	73.71	74.41	75.14	75.95	76.60	77.08	77.47	77.70
30	72.20		72.63	73.15	73.73	74.44	75.15	75.97	76.63	77.07	77.49	77.74
31	72.19		72.68		73.76		75.19	75.99		77.08		77.73

19.23.27.111. C. R. Coffin. Drilled stock water-table well in limestone member of San Andres formation, diameter 6 inches, depth 416 feet. Land-surface datum is 3,940 feet above msl. Highest water level 368.75 below lsd, Oct. 19, 1943; lowest 383.53 below lsd, Sept. 16, 1954. Records available: 1940-54. In intake area of artesian aquifer. Jan. 16, 383.10; Mar. 17, 381.06; May 20, 382.84; July 16, 383.43; Sept. 16, 383.53; Nov. 18, 379.70.

19.26.12.322. Forrest Lee. Drilled irrigation water-table well in valley fill. Highest water level 36.46 below lsd, July 16, 1952; lowest 52.18 below lsd, Sept. 17, 1954. Records available: 1952-54. Jan. 8, 47.36; Mar. 19, 47.03; May 20, 49.42; Sept. 17, 52.18; Nov. 17, 37.67.

19.26.13.333. U. S. Bureau of Reclamation. Drilled observation water-table well in valley fill, diameter 4 inches. Land-surface datum is 3,271.05 feet above msl. Highest water level 11.67 below lsd, May 18, 1953; lowest 14.70 below lsd, Nov. 13, 1952. Records available: 1952-54. Jan. 8, 13.93; Mar. 19, 13.85; May 20, 13.01; July 17, 13.09; Sept. 17, 13.00; Nov. 17, 13.46.

19.26.14.431a. Albert Lee. Drilled unused water-table well in valley fill, diameter 6 inches, depth 100 feet. Highest water level 11.75 below lsd, Jan. 4, 1945; lowest 52.88 below lsd, Sept. 17, 1954. Records available: 1945-46, 1948-54. Jan. 8, 40.20; Mar. 19, 57.09, nearby well being pumped; May 20, 63.54, nearby well being pumped; July 17, 68.41, nearby well being pumped; Sept. 17, 52.88; Nov. 17, 38.91.

19.26.27.233. E. C. McGonagill. Formerly Lakewood School. Drilled domestic water-table well in valley fill, diameter 8 inches, depth 127 feet. Highest water level 37.63 below lsd, May 11, 1942; lowest 82.34 below lsd, July 17, 1954. Records available: 1937-39, 1941-54. Jan. 8, 71.83; Mar. 19, 76.87, pumped recently; May 20, 87.46, pumping; July 17, 82.34; Sept. 17, 79.52, pumping; Nov. 17, 62.77, pumping.

20.26.3.411. John Fanning. Drilled stock water-table well in valley fill, diameter 6 inches. Highest water level 44.25 below lsd, Nov. 17, 1954; lowest 52.30 below lsd, Jan. 22, 1954. Records available: 1954. Jan. 22, 52.30; July 19, 53.13, pumping; Sept. 17, 49.84; Nov. 17, 44.25.

20.26.7.122. J. B. Moutry. Drilled domestic water-table well in valley fill, diameter 6 inches, depth 120 feet, cased to 120. Highest water level 35.48 below lsd, Nov. 12, 1941; lowest 87.89 below lsd, Sept. 17, 1954. Records available: 1937-54. Jan. 8, 72.46; Mar. 19, 75.79; May 20, 80.66; July 17, 91.46, pumped recently; Sept. 17, 87.89; Nov. 17, 75.61.

Carlsbad Area

21.27.19.334. F. R. Dickson. Drilled irrigation artesian(?) well in Carlsbad group, diameter 12 inches, depth 320 feet, cased to 94. Land-surface datum is 3,136 feet above msl. Highest water level 26.10 below lsd, Jan. 17, 1950; lowest 33.98 below lsd, Aug. 31, 1954. Records available: 1946-54. Jan. 7, 32.15; Mar. 10, 31.88; May 5, 32.98; Aug. 31, 33.98; Oct. 13, 31.52; Nov. 8, 31.61.

21.27.30.442. T. Ives. Drilled domestic and irrigation artesian(?) well in Carlsbad group, diameter 7 inches, reported depth 256 feet. Highest water level 7.80 below lsd, Sept. 21, 1949; lowest 18.13 below lsd, July 8, 1954. Records available: 1947-54. Jan. 7, 14.72; Mar. 10, 14.76; May 5, 14.81; July 8, 18.13; Aug. 31, 16.28; Oct. 13, 15.53; Nov. 8, 17.63.

21.27.32.112. L. E. Loman. Drilled domestic and irrigation artesian well in Carlsbad group, diameter 6 inches, reported depth 305 feet. Land-surface datum is 3,112 feet above msl. Highest water level 4.64 below lsd, Jan. 17, 1950; lowest 11.40 below lsd, Sept. 28, 1953. Records available: 1947-54. Jan. 8, 9.64; Mar. 10, 9.35; May 5, 12.20, pumping; July 8, 12.50, pumping; Aug. 31, 11.39; Oct. 13, 8.98; Nov. 8, 9.08.

21.27.32.112a. S. Tracy. Drilled irrigation water-table well in alluvium, diameter 15 inches, reported depth 105 feet. Land-surface datum is 3,112 feet above msl. Highest water level 11.09 below lsd, Sept. 15, 1950; lowest 14.95 below lsd, Jan. 24, 1950. Records available: 1950-54. Jan. 7, 14.79; Mar. 10, 14.80; May 5, 14.56; Aug. 31, 14.35; Oct. 13, 13.53; Nov. 8, 13.70.

22.26.3.344. I. O. Harris. Drilled irrigation artesian(?) well in Carlsbad group, diameter 14 inches, reported depth 360 feet. Land-surface datum is 3,180 feet above msl. Highest water level 72.43 below lsd, Jan. 17, 1950; lowest 84.92 below lsd, Mar. 9, 1954. Records available: 1948-54. Jan. 8, 80.37; Mar. 9, 84.92; July 6, 99.13, pumping, nearby well being pumped; Aug. 30, 83.76; Oct. 12, 82.46; Nov. 4, 81.10.

22.26.14.213. H. E. Stevenson. Drilled irrigation artesian(?) well in Carlsbad(?) group, and Rustler(?) formation, reported depth 200 feet. Land-surface datum is 3,180 feet above msl. Highest water level 63.87 below lsd, Jan.17, 1950; lowest 72.42 below lsd, Aug. 30, 1954. Records available: 1947-54. Jan. 8, 70.51; Mar. 9, 70.16; Aug. 30, 72.42; Oct. 12, 70.11; Nov. 8 69.93.

22.26.24.224. D. N. Vest. Drilled unused water-table well in alluvium, diameter 11 inches, depth 240 feet. Highest water level 72.24 below lsd, Oct. 21, 1950; lowest 108.04 below lsd, Sept. 4, 1954. Records available: 1948-54. Well deepened from 200 to 240 feet in August 1954.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	102.97	103.09	103.47	104.33	105.70	105.67	106.03	107.05h	111.24	107.62	.....	103.49
2	102.98	103.14	103.60	104.35	105.77	105.67	106.07	107.06	.....	107.62	.....	103.24
3	103.09	103.10	103.85	104.38	105.89	105.69e	106.12	107.11	.....	107.62	.....	103.03
4	103.09	103.10	103.77	104.39	105.71	105.67	106.15	107.14	108.04	107.59	.....	102.88
5	103.14	103.09	103.78	104.42	105.71	105.64	106.16	107.17	107.99	107.55	.....	102.93
6	103.12	103.09	103.76	104.47	105.68	105.64	106.19	107.21	107.97	107.55	.....	102.65
7	102.99	103.23	103.71	104.50	105.69	105.66	106.21	107.25	107.94	107.56	.....	102.43
8	102.93	103.17	103.75	104.74	105.73	105.63	106.27	.....	107.92	107.56	.....	102.43
9	102.94	103.07	103.67	104.70	105.72	105.63	106.29	.....	107.92	107.52	.....	102.27
10	103.05	103.01	103.60	104.72	105.73	105.62	106.31	.....	107.92	107.44	.....	102.02
11	103.07	103.10	103.52	104.83e	105.73	.....	106.35	.....	107.91	107.42	.....	101.99
12	103.03	103.20	.....	104.99	.....	105.59	106.37	.....	107.87h	107.36	.....	101.99
13	102.95	103.15	103.94	105.02	.....	105.55	106.42	.....	107.86	.....	.....	101.67
14	102.91	103.15	103.91	104.97	.....	105.56	106.44e	107.59	107.86	.....	.....	101.64
15	102.91	103.15	103.95	104.99	105.74	105.57	106.47	107.59	107.86	107.35	.....	101.34
16	102.92	103.40	103.93	105.29	105.72	105.57	106.52	107.63	107.84	107.34	.....	101.28
17	102.90	103.31	103.75	105.27	105.73	105.57	106.55	107.66	107.83	107.26	.....	101.34
18	102.83	103.20	103.75	105.24	105.74	105.61	106.59	.....	107.80	107.18	.....	101.22
19	102.78	103.23	103.81	105.28	105.77	105.68	106.60	.....	107.77	107.15	.....	101.09
20	102.79	103.40	103.88	105.34	105.77	105.70	106.62	.....	107.77	107.07	.....	100.84
21	103.03	103.44	103.90	105.40	105.70	105.70	106.63	.....	107.78	107.01	.....	100.71
22	102.95	103.45	103.90	105.51	105.66	105.71	106.68	.....	107.82	106.97	.....	100.50
23	102.85	103.58	103.88	105.54	105.67	105.80	106.73	.....	107.76	106.90	.....	100.47
24	102.91	103.45	103.89	105.59	105.70	105.84	106.79	.....	107.76	106.79	.....	100.30
25	102.91	103.45	104.02	105.62	105.74	105.84	106.82	.....	107.76	106.73	.....	e100.10
26	102.93	103.39	104.08	105.64	105.68	105.88	106.86	.....	103.73	106.72	.....	99.90
27	103.03	103.40	104.14	105.67	105.65	105.93	106.89	.....	103.66	106.72	.....	99.85
28	103.00	103.57	104.09	105.66	105.65	105.94	106.90	.....	107.61	.....	.....	99.90
29	103.00		104.09	105.66	105.67	105.97	106.94	.....	107.61	.....	103.58	99.70
30	103.02		104.13	105.69	105.68	106.00	106.96	.....	107.61	.....	103.55	99.65
31	103.16		104.19		105.68		e107.00	.....		.....		99.47

e Estimated.
h Tape measurement.

22.26.35.222. Carlsbad Airfield 3. Drilled municipal water-table well in alluvium, diameter 12 inches, depth 256 feet. Highest water level 132.53 below lsd, Oct. 14, 1942; lowest 198.54 below lsd, July 30, 1953. Records available: 1942-53. Bimonthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

22.26.36.111. Carlsbad Airfield 1. Drilled municipal water-table well in alluvium, diameter 12 inches, depth 194 feet. Highest water level 131.81 below lsd, Oct. 14, 1942; lowest 194.09 below lsd, Sept. 11, 1952. Records available: 1942-54. Jan. 11, 181.61. Bimonthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

22.26.36.111a. Carlsbad Airfield 2. Drilled unused water-table well in alluvium, diameter 12 inches, depth 260 feet. Highest water level 131.50 below lsd, Oct. 14, 1942; lowest 204.66 below lsd, Aug. 21, 1954. Records available: 1942-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	179.73	182.40	190.18	189.38	193.60	201.15	200.92	198.62	182.33	181.88
2	.....	.....	180.07	182.65	190.10	189.44	193.93	201.04	200.84	198.42e	182.60	181.75
3	.....	179.99	180.15	182.95	190.00	189.58	194.00	201.67	200.65	197.80e	182.58	181.63
4	.....	179.90	180.02	183.23	190.24	189.64	194.29	201.94	200.48	197.62e	182.75	.....
5	.....	179.85	179.97	183.25	190.35	189.64	194.27	202.18	199.98	197.84	182.70	.....

22.26.36.111a--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	182.07	179.78	179.99	183.78	190.27	189.38	194.78	202.38	199.78	197.68	182.60	.....
7	181.87	179.92	179.72	184.20	190.25	189.28	195.40	202.50	200.12	196.80	182.40	182.20
8	181.73	179.78	179.70	184.75	190.20	189.45	195.85	202.27	200.09	192.35	182.34	182.10
9	181.74	179.62	179.70	185.05	189.80	189.32	196.04	202.10	199.83	189.00	182.60	182.00
10	181.62	179.45	179.62	185.31	189.72	189.19	196.44	202.67	199.76	186.85	182.65	181.70
11	181.51	179.47	179.52	185.68	189.98	189.25	196.52	203.10	199.70	186.33	182.74	181.53
12	181.56	179.50	179.60	185.75	189.97	189.24	196.39	203.22	199.17	185.88	182.73	181.18
13	181.30	179.37	180.00	186.30	189.85	189.25	196.88	203.37	198.92	185.30	182.65	181.08
14	181.20	179.07	179.99	186.50	189.85	189.20	197.27	203.48	199.15	184.80	182.45	181.10
15	181.14	179.02	179.99	186.74	189.77	189.65	197.62	203.18	199.27	184.57	182.38	180.92
16	181.09	179.43	180.24	187.24	189.50	189.84	197.74	203.08	199.30	184.25	182.44	180.78
17	180.83	179.43	180.15	187.52	189.40	190.13	197.88	203.87	199.30	183.53	182.47	180.95
18	180.72	179.32	180.22	187.60	189.68	190.38	198.08	204.18	199.20	183.34	182.55	180.88
19	180.71	179.35	180.42	187.64	189.65	190.50	197.94	204.47	198.65	183.33	182.45	180.55
20	180.92	179.58	180.62	188.28	189.80	190.75	198.51	204.63	198.50	183.28	182.33	180.50
21	180.78	179.63	180.55	188.67	189.87	190.62	198.68	204.66	198.87	182.97	182.18	180.50
22	180.68	179.58	180.50	188.78	189.73	191.14	199.22	204.20	199.05	182.85	182.15	180.38
23	180.51	179.92	180.85	189.03	189.43	191.40	199.39	204.07	199.15	182.88	182.24	180.25
24	180.25	179.93	180.80	189.21	189.38	191.77	199.65	204.43	199.00	182.47	182.32	180.27
25	180.18	179.88	181.13	189.27	189.50	192.07	199.48	204.13	198.95	182.38	182.08	179.95
26	180.34	179.83	181.25	189.24	189.47	192.25	199.40	202.68	198.45	182.60	181.94	179.86
27	180.37	179.83	181.30	189.63	189.39	192.53	200.03	201.45	198.30	182.65	181.94	179.79
28	.....	179.83	181.22	189.83	189.35	192.40	200.62	201.14	198.57	182.60	181.73	179.89
29	.....		181.18	190.04	189.43	193.01	200.83	200.88	198.66	182.70	181.67	179.77
30	.....		181.67	190.13	189.17	193.67	200.98	200.53	198.60	182.60	181.78	179.70
31	.....		182.05		189.13		201.25	200.84		182.30		179.63

e Estimated.

22.27.10.333. Mrs. M. Enifer. Drilled irrigation water-table well in alluvium, diameter 18 inches. Land-surface datum is 3,080 feet above msl. Highest water level 3.80 below lsd, Sept. 15, 1950; lowest 45.64 below lsd, July 8, 1954. Records available: 1947-54. Jan. 18, 22.54; May 4, 22.65; July 8, 45.64; Aug. 31, 29.97; Oct. 12, 28.45; Nov. 8, 20.05.

22.27.22.421. Enea Grandi. Drilled irrigation water-table well in alluvium, diameter 16 inches, reported depth 150 feet. Land-surface datum is 3,100 feet above msl. Highest water level 21.43 below lsd, Sept. 15, 1950; lowest 64.60 below lsd, Aug. 31, 1954. Records available: 1947-54. Jan. 11, 50.03; Mar. 10, 51.47; May 5, 53.83; Aug. 31, 64.60; Oct. 12, 58.67; Nov. 8, 55.57.

22.27.28.133. Roy Thomason. Drilled irrigation water-table well in alluvium, diameter 16 inches, reported depth 205 feet. Land-surface datum is 3,137 feet above msl. Highest water level 57.05 below lsd, Jan. 18, 1950; lowest 103.67 below lsd, Aug. 30, 1954. Records available: 1947-54. Jan. 12, 90.83; Mar. 9, 89.70; May 4, 98.22; Aug. 30, 103.67; Oct. 12, 99.74; Nov. 4, 97.26.

22.27.30.133. W. H. Merchant. Drilled unused water-table well in limestone conglomerate and alluvium, diameter 8 inches, depth 207 feet. Land-surface datum is 3,190 feet above msl. Highest water level 96.80 below lsd, Nov. 24, 1944; lowest 155.01 below lsd, Sept. 29, 1953. Records available: 1944-54. Jan. 13, 139.66. Bimonthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

23.27.9.211. Jim Chadwick. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 200 feet. Highest water level 41.70 below lsd, Sept. 15, 1950; lowest 53.11 below lsd, July 7, 1954. Records available: 1949-54. Jan. 15, 49.39; Mar. 9, 50.74; May 5, 51.45; July 7, 53.11; Aug. 30, 52.22; Oct. 12, 52.58; Nov. 4, 52.00.

23.27.23.211. W. H. Sweavingen. Drilled unused water-table well in alluvium, diameter 12 inches. Land-surface datum is 3,120 feet above msl. Highest water level 19.17 below lsd, Jan. 17, 1951; lowest 25.98 below lsd, July 7, 1954. Records available: 1947-54. Jan. 15, 25.18; Mar. 10, 25.19; May 5, 25.55; July 7, 25.98; Aug. 31, 25.70; Oct. 12, 25.38; Nov. 8, 24.90.

23.28.23.133. A. R. Donaldson. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 148 feet. Land-surface datum is 3,020 feet above msl. Highest water level 38.25 below lsd, Sept. 14, 1950; lowest 70.59 below lsd, Aug. 31, 1954. Records available: 1947-54. Jan. 18, 54.90; Mar. 10, 55.17; May 5, 58.65; Aug. 31, 70.59; Oct. 12, 64.94; Nov. 8, 60.92.

25.24.26.121. State Department of Game and Fish. Dug unused well in alluvial conglomerate, diameter 24 inches, depth 15 feet. Highest water level 0.76 above lsd, Feb. 19, 1953; lowest 1.96 below lsd, July 26, 1954. Records available: 1953-54.

Daily highest water level, above and below lsd, from recorder graph, 1953

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	.....	.....	+0.53	-0.37	-0.46	-0.93	-1.11	-1.47	-1.61	-0.52	+0.07	+0.18
10	.....	+0.63	.63	.86	.40	.78	.91	1.56	1.56	.36	.07	.17
15	.....	.70	.39	.87	.39	.06	1.19	1.46	.....	.23	.12	.19
20	.....	.73	.32	.38	.40	+.02	.89	1.62	1.11	.13	.05	.33
25	.....	.74	.22	.27	.84	-.49	1.28	1.62	.72	.04	.18	.40
30	.....		.39	.27	.62	.76	1.31	1.67	.89	.03	.13	.38

Daily highest water level, above and below lsd, from recorder graph, 1954

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	+0.42	+0.42	.....	+0.18	-0.74	-0.53	-1.24	.....	-1.14	-0.35	+0.06	+0.31
10	.43	.44	+0.30	-.29	.64	.59	1.53	.....	.97	.09	.10	.36
15	.45	.38	.31	.64	.68	.79	1.76	.....	.67	.04	.19	.36
20	.42	.43	.33	.78	.80	1.20	.....	.....	.86	.03	.22	.36
25	.46	.....	.30	.84	.52	1.51	1.89	.....	.75	+.05	.27	.34
30	.36		.28	.34	.69	1.40	.....	-0.66	.49	.09	.31	.33

25.24.27.124. McClure & Hellyer. Drilled irrigation well in alluvial conglomerate, reported depth 150 feet. Land-surface datum is 3,738.5 feet above msl. Highest water level 93.56 below lsd, Apr. 4, 1952; lowest 108.20 below lsd, Sept. 3, 1954. Records available: 1952-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 4, 1952	93.56	Sept. 24, 1952	95.99	Apr. 23, 1953	95.99	May 6, 1954	a117.6
May 21	94.55	Oct. 23	94.94	June 11	96.80	Sept. 3	108.20
July 2	94.61	Dec. 17	94.53	Jan. 20, 1954	95.19	Oct. 14	96.27
15	95.05	Feb. 1, 1953	94.46	Mar. 8	95.27	Nov. 9	95.81
Sept. 8	96.60	Mar. 5	94.55				

a Pumping.

25.24.27.141. George Smart. Drilled unused well in alluvium, diameter 22 inches, depth 165 feet. Land-surface datum is 3,749.3 feet above msl. Highest water level 104.84 below lsd, Mar. 5, 11, 1953; lowest 111.12 below lsd, Sept. 2, 1954. Records available: 1952-54.

Sept. 8, 1952	106.98	Apr. 13, 1953	106.33	June 29, 1953	c109.32	Dec. 14, 1953	105.73
17	c109.58	18	c108.30	July 9	c109.36	Jan. 20, 1954	105.59
24	106.34	24	106.48	15	c110.14	Mar. 8	105.76
Oct. 1	105.92	May 1	c108.37	22	c110.03	May 6	110.42
23	105.28	5	c108.63	Aug. 27	c110.78	July 9	a111.12
Dec. 17	104.89	June 5	c109.69	Sept. 30	107.44	Sept. 2	111.12
Mar. 5, 1953	104.84	11	107.19	Nov. 12	105.86	Oct. 14	a106.65
11	104.84	22	106.52	20	105.81	Nov. 9	106.00
18	105.11						

a Pumping.
c Nearby well being pumped.

25.24.27.421. McClure & Hellyer. Drilled irrigation well in alluvium, diameter 16 inches depth 101 feet. Land-surface datum is 3,701 feet above msl. Highest water level 55.68 below lsd, Apr. 4, 1952; lowest 58.41 below lsd, Sept. 8, 1952. Records available: 1952-54.

Apr. 4, 1952	55.68	Oct. 23, 1952	56.50	Dec. 14, 1953	57.12	Sept. 2, 1954	a103.20
May 21	55.86	Dec. 17	56.10	Jan. 19, 1954	56.66	Oct. 14	57.17
Sept. 8	58.41	Feb. 1, 1953	56.07	Mar. 8	57.63	Nov. 9	56.91
24	57.61	Nov. 10	57.05				

a Pumping.

25.24.34.112a. H. F. Ballard. Drilled irrigation well in alluvium, diameter 12 inches, depth 165 feet. Land-surface datum is 3,739.1 feet above msl. Highest water level 89.27 below lsd, Apr. 4, 1952; lowest 92.77 below lsd, July 22, 1953. Records available: 1952-54.

Apr. 4, 1952	89.27	July 15, 1952	90.05	Dec. 5, 1952	89.90	Sept. 30, 1953	92.38
May 21	89.76	22	89.65	17	89.80	Nov. 12	91.06
29	90.00	Aug. 27	a94.80	Feb. 1, 1953	89.88	Dec. 15	90.86
June 5	89.94	Sept. 8	91.79	Mar. 5	89.78	Mar. 8, 1954	90.68
11	a93.10	17	91.86	Apr. 24	91.49	May 6	92.45
18	90.11	24	91.51	June 11	92.11	Sept. 2	92.31
27	90.02	Oct. 1	91.00	July 22	92.77	Oct. 14	91.85
July 2	89.88	23	90.31	Aug. 27	a96.69	Nov. 9	91.11

a Pumping.

25.24.34.124. H. F. Ballard. Drilled irrigation well in alluvium, diameter 12 inches, depth 165 feet. Land-surface datum is 3,713.5 feet above msl. Highest water level 63.60 below lsd, Dec. 14, 1953; lowest 70.50 below lsd, Sept. 30, 1953. Records available: 1952-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 4, 1952	63.84	July 22, 1952	64.16	Dec. 17, 1952	64.48	Dec. 14, 1953	63.60
May 21	64.39	Aug. 27	c66.24	Mar. 5, 1953	64.47	Jan. 20, 1954	65.24
29	64.68	Sept. 4	66.44	Apr. 24	66.20	Mar. 8	65.33
June 5	64.57	24	66.11	June 11	66.74	May 7	67.06
11	c65.06	Oct. 1	65.58	July 22	66.97	July 9	68.19
27	64.64	14	65.12	Aug. 27	c68.19	Sept. 2	67.59
July 2	64.45	23	64.12	Sept. 30	70.50	Oct. 14	65.67
15	64.59	Dec. 5	64.54	Nov. 12	64.60	Nov. 9	65.37

c Nearby well being pumped.

26.24.9.421. "Old School House" well. Drilled domestic and stock well in alluvium, diameter 6 inches. Land-surface datum is 3,746.4 feet above msl. Highest water level 49.15 below lsd, Apr. 24, 1952; lowest 55.52 below lsd, July 13, 1954. Records available: 1952-54.

Apr. 24, 1952	49.15	Feb. 1, 1953	50.99	Jan. 20, 1954	52.85	Sept. 2, 1954	54.93
June 16	49.64	June 11	52.00	Mar. 8	52.99	Oct. 14	55.14
Sept. 20	50.61	Nov. 20	52.81	May 7	53.82	Nov. 9	53.19
Dec. 17	50.6	Dec. 15	53.12	July 13	55.52		

26.24.9.441. John Mayes. Drilled irrigation well in alluvium, diameter 12 inches, depth 100 feet. Land-surface datum is 3,749.4 feet above msl. Highest water level 43.05 below lsd, Apr. 24, 1952; lowest 47.15 below lsd, Sept. 2, 1954. Records available: 1952-54.

Apr. 4, 1952	43.13	May 5, 1953	45.74	Dec. 15, 1953	46.14	July 13, 1954	a50.60
24	43.05	June 11	45.38	Jan. 20, 1954	45.81	Sept. 2	47.15
June 16	43.25	July 22	45.61	Mar. 8	46.03	Oct. 14	45.81
Dec. 17	44.30	Oct. 2	46.28	May 7	a47.50	Nov. 9	44.93
Jan. 31, 1953	44.35	Nov. 12	46.01				

a Pumping.

26.24.10.131. Arthur Mayes. Drilled irrigation well in alluvium, diameter 12 inches, depth 129 feet. Land-surface datum is 3,726 feet above msl. Highest water level 30.3 below lsd, Apr. 2, 1952; lowest 38.48 below lsd, July 13, 1954. Records available: 1952-54.

Apr. 2, 1952	30.3	June 11, 1953	34.24	Nov. 12, 1953	35.50	May 7, 1954	36.63
24	31.48	July 22	34.86	Dec. 15	35.51	July 13	38.48
June 18	31.02	Aug. 27	35.55	Jan. 20, 1954	35.53	Sept. 2	37.46
Dec. 17	33.7	Oct. 2	36.06	Mar. 8	35.68	Nov. 9	35.83
Feb. 1, 1953	33.37						

Hidalgo County

Animas, Playas, and Virden Valleys.--Hidalgo County, in southwestern New Mexico, is in the semiarid region of basin-and-range topography. Animas Valley is bounded on the west by the Peloncillo Mountains and on the east by the Animas and Pyramid Mountains. Playas Valley is separated from Animas Valley by the Animas Mountains and a low divide between the Animas and Pyramid Mountains. Playas Valley is separated from Hachita Valley on the east by the Big Hatchet Mountains, Little Hatchet Mountains, and an intervening low divide. Virden Valley is the New Mexico portion of the Duncan-Virden Valley, which lies along the upper Gila River in the northwestern part of Hidalgo County. About 205 square miles was declared as the Animas ground-water basin by order of the State Engineer of New Mexico on May 5, 1948, and closed to further appropriation of ground water on June 14, 1948. The Virden Valley ground-water basin, about 20 square miles in extent, was declared by order of the State Engineer on December 5, 1938. Playas Valley has not been declared as a ground-water basin.

In Animas Valley water levels were measured in 68 observation wells in January 1954, about 41 of which were measured also at bimonthly intervals. In Playas Valley 11 wells were measured in January and 7 wells were measured bimonthly. In Virden Valley water levels were measured in 6 wells at about 3-month intervals. A recording gage was maintained throughout 1954 on well 25.20.34.241 in the heavily pumped area of Animas Valley. Water-level measurements made in January, not all of which are listed in this report, were used in preparing the map (fig. 58) showing changes in water level in Animas Valley from January 1954 to January 1955. In Virden Valley ground water is pumped mainly for irrigation as a supplement to the surface-water supply. Precipitation in 1954 at Duncan, Ariz., and Virden, N. Mex., amounted to 8.77 inches and 10.62 inches, respectively. The amount of surface water available for diversion was considerably greater in 1954 than in 1953. Water levels in the area generally showed little or no decline during 1954, and in some places rises were measured. These are attributed to recharge from the increased surface-water supply.

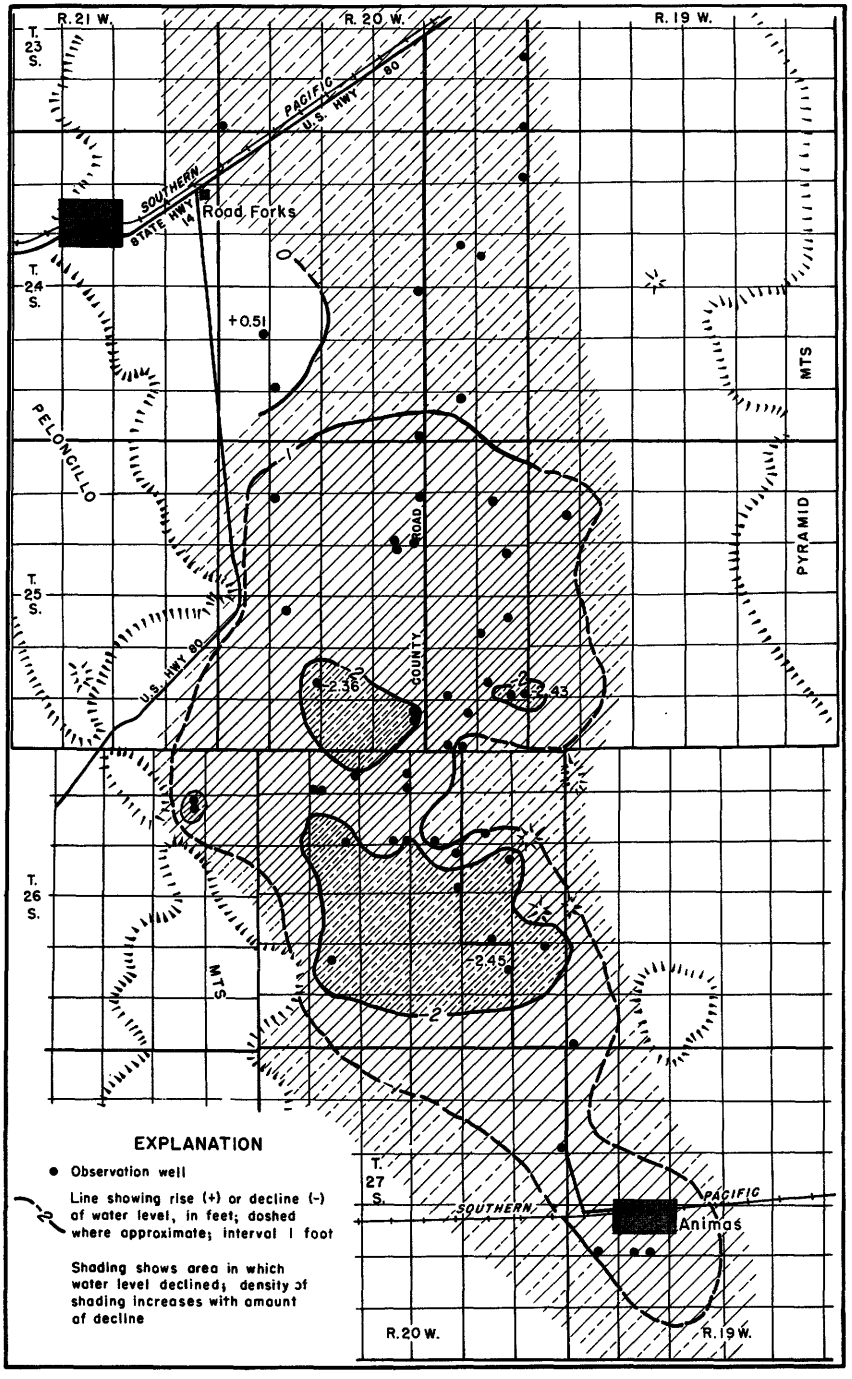


Figure 58.--Change in ground-water level from January 1954 to January 1955 in Animas Valley, Hidalgo County, N. Mex.

Precipitation in 1954 was near normal at Animas, Hachita, and Rodeo CAA but considerably below normal at Lordsburg. The precipitation, as reported by the U. S. Weather Bureau, amounted to 9.58 inches at Animas, 0.80 inch below normal; 10.34 inches at Hachita, 0.07 inch below normal; 5.98 inches at Lordsburg, 3.53 inches below normal; and, as estimated, 10.67 inches at Rodeo CAA, 0.49 inch below normal. During the growing season (April to September) precipitation ranged from about 25 to 35 percent above normal at Animas, Hachita, and Rodeo CAA. About 82 to 87 percent of the annual precipitation occurred during this season.

The total quantity of water used each year in Animas Valley has been recomputed or reestimated for the period from 1948 to 1953. The reevaluation of the quantity of water pumped is based on more complete electric-power records for 1952, 1953, and 1954 and pump ratings correlating the quantity of water pumped per unit of electric power consumed. The amount of precipitation and length of pumping season also were used in making the revised estimates, particularly for 1950 and 1951. These revised estimates for 1950-54 indicate more water was pumped than was previously estimated. About 15,000 acre-feet of water was pumped for irrigation in 1950, about 18,000 acre-feet in 1951, about 21,000 acre-feet in 1952, and about 24,000 acre-feet in 1953. In 1954 about 11,400 acres of land was irrigated with about 19,000 acre-feet of water. The decrease in the quantity of water pumped for irrigation in 1954 is the result of above-normal precipitation.

Ground-water levels continued to decline in 1954 in the Animas Valley, but the net annual declines were considerably less than in previous years. This may be attributed to the heavy rains during July and August, which caused less ground water to be pumped for irrigation during the latter part of the growing season. Figure 58 shows the water-level changes from January 1954 to January 1955 when water levels declined more than a foot under about 90 square miles and more than 2 feet under 4 areas totaling about 16 square miles. The water-level declines during 1954 were less than the average net decline of 4 feet during the 5-year period January 1950 to January 1955. In the 5-year period the maximum net decline was more than 20 feet, and in 1954 the maximum net decline was about 2.4 feet. From January 1950 to January 1955 the water levels declined more than 5 feet under about 120 square miles, more than 10 feet under about 55 square miles, more than 15 feet under 25 square miles, and more than 20 feet under about 1 square mile. The area of greatest decline, centered in sec. 3, T. 26 S., R. 20 W., coincides approximately with the center of concentration of pumping.

It is estimated that about 900 acres of land in the Playas Valley was irrigated in 1954 as compared with about 1,350 acres in 1953. As cotton is the chief crop in this area, the reduction in irrigated acreage is due primarily to the decrease in the cotton allotment set by the Production Management Administration. Water levels rose in 7 of the 10 wells measured in January 1954 and January 1955, the maximum net annual rise amounting to about 5.2 feet. The rises of water level were in the area in which the greater declines occurred during the past few years.

Animas Valley

23.20.25.422. Kerr Cattle. Co. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 150 feet. Highest water level 31.36 below lsd, May 21, 1948; lowest 35.29 below lsd, July 29, 1953. Records available: 1948-54. Jan. 28, 34.26; Mar. 26, 34.87; May 27, 34.48; Sept. 16, 46.64, pumping; Nov. 10, 35.04.

24.20.1.444. Fred Kerr. Drilled irrigation water-table well in bolson deposits, diameter 30 to 18 inches, depth 92 feet. Highest water level 29.75 below lsd, Apr. 4, 1948; lowest 40.86 below lsd, July 29, 1953. Records available: 1948-54. Jan. 28, 35.68; Mar. 26, 45.02, pumping; May 27, 48.05, pumping; July 26, 38.03; Sept. 16, 51.84, pumping; Nov. 10, 37.20.

24.20.13.133. P. Kerr. Drilled stock water-table well in bolson deposits, diameter 6 inches, depth 26 feet. Highest water level 14.02 below lsd, May 21, 1948; lowest 17.57 below lsd, Mar. 26, 1954. Records available: 1948-54. Jan. 18, 17.11; Mar. 26, 17.57; May 27, 18.05, pumping; Sept. 16, 17.49; Nov. 10, 18.67, pumping.

24.20.14.214. Kerr Cattle Co. Dug unused water-table well in bolson deposits, diameter 10 feet, depth 32 feet. Highest water level 14.74 below lsd, May 21, 1948; lowest 17.70 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 28, 17.35; Mar. 26, 17.41; May 27, 17.45; July 22, 17.59; Sept. 16, 17.56; Nov. 10, 17.70.

24.20.19.444. R. E. Macow. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, reported depth 140 feet. Highest water level 33.16 below lsd, Apr. 4, 1948; lowest 44.23 below lsd, Sept. 22, 1953. Records available: 1948-54. Jan. 25, 39.83; Mar. 25, 39.25; May 26, 42.03; July 22, 41.73; Sept. 15, 66.71, pumping; Nov. 10, 40.42.

24.20.22.222. W. W. Roark. Drilled unused water-table well in bolson deposits, diameter 6 inches, depth 28 feet. Highest water level 17.35 below lsd, May 21, 1948; lowest 20.85 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 28, 20.31; Mar. 25, 20.31; May 26, 20.45; July 22, 20.75; Sept. 16, 20.64; Nov. 10, 20.85.

24.20.29.333. Mrs. May Smith. Drilled irrigation water-table well in bolson deposits, diameter 14 inches, depth 142 feet. Highest water level 37.39 below lsd, Apr. 6, 1948; lowest 47.20 below lsd, July 27, 1953. Records available: 1948-54. Jan. 25, 43.28; May 26, 44.60; July 22, 45.80; Sept. 15, 44.83; Nov. 10, 43.88.

24.20.34.444. Elmer L. Kerr. Drilled stock water-table well in bolson deposits, diameter 6 inches, depth 33 feet. Highest water level 25.77 below lsd, Mar. 16, 1951; lowest 30.29 below lsd, July 22, 1954. Records available: 1951-54. Jan. 27, 28.86; Mar. 25, 29.09; May 26, 29.28; July 22, 30.29; Sept. 16, 29.92; Nov. 10, 30.98, pumping.

24.20.35.214. Elmer L. Kerr. Drilled irrigation water-table well in bolson deposits, diameter 12 inches, depth 79 feet. Highest water level 17.40 below lsd, Apr. 4, 1948; lowest 23.15 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 28, 22.09; Mar. 25, 22.14; May 26, 22.56; July 22, 22.87; Sept. 16, 22.90; Nov. 10, 23.15.

25.19.7.143. R. I. Richins & G. A. McDonald. Drilled domestic water-table well in bolson deposits, diameter 6 inches, depth 31 feet. Highest water level 28.73 below lsd, Nov. 11, 1952; lowest dry at 32, May 26, July 26, Sept. 16, 1954. Records available: 1952-54. Jan. 27, 30.66; Mar. 26, 30.76; May 26, dry; July 26, dry; Sept. 16, dry.

25.19.7.234. R. I. Richins & G. A. McDonald. Drilled water-table well in bolson deposits, diameter 18 inches, depth 95 feet. Highest water level 31.31 below lsd, May 21, 1949; lowest 39.88 below lsd, July 26, 1954. Records available: 1948-54. Jan. 27, 35.98; Mar. 26, 36.15; May 27, 37.25; July 26, 39.88; Sept. 16, 37.66; Nov. 11, 37.42.

25.20.8.111. T. H. McCants. Dug domestic and stock water-table well in bolson deposits, diameter 36 inches, depth 80 feet. Land-surface datum is 4,220.39 feet above msl. Highest water level 57.46 below lsd, May 22, 1948; lowest 63.72 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 25, 62.40; Mar. 25, 62.47; May 26, 62.64; July 22, 63.29; Sept. 15, 63.64, pumping; Nov. 10, 63.72.

25.20.10.222. Valley View Church. Drilled domestic water-table well in bolson deposits, diameter 4 inches, depth 32 feet. Land-surface datum is 4,189.88 feet above msl. Highest water level 27.44 below lsd, Apr. 6, 1948; lowest 38.07 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 27, 36.75; Mar. 25, 36.60; May 26, 37.36; July 22, 37.82; Sept. 15, 38.04; Nov. 10, 38.07.

25.20.13.213. George Wright. Drilled irrigation water-table well in bolson deposits, diameter 18 inches, depth 123 feet. Land-surface datum is 4,195.64 feet above msl. Highest water level 28.05 below lsd, Mar. 21, 1949; lowest 47.32 below lsd, July 29, 1953. Records available: 1948-54. Jan. 27, 40.36; Mar. 26, 40.18; May 27, 72.85, pumping; July 26, 74.59, pumping; Sept. 16, 55.80, pumping; Nov.11, 42.32.

25.20.15.122a. Max DeVilbris. Formerly Mrs. H. K. Wood. Drilled irrigation water-table well in bolson deposits, diameter 14 inches, depth 49 feet. Highest water level 37.53 below lsd, Jan. 17, 1950; lowest dry at 49, July 29, Sept. 23, 1953. Records available: 1950-53. Measurement discontinued.

25.20.20.142. Standsberry. Dug stock water-table well in bolson deposits, diameter 4(?) feet, depth 68 feet. Highest water level 60.09 below lsd, Apr. 6, 1948; lowest dry at 68, July 27, 1953. Records available: 1948-53. Measurement discontinued.

25.20.24.313. Rudiger & Jundt.. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 97 feet. Land-surface datum is 4,221.43 feet above msl. Highest water level 42.43 below lsd, Apr. 1, 1948; lowest 70.12 below lsd, Sept. 23, 1953. Records available: 1948-54. Jan. 27, 61.61; Mar. 26, 61.57; May 26, 90.55, pumping; July 26, 69.59; Sept. 16, 69.42; Nov. 11, 65.40.

25.20.25.334. Richins Bros. Drilled irrigation water-table well in bolson deposits, diameter 18 inches, depth 115 feet. Land-surface datum is 4,239.18 feet above msl. Highest water level 54.94 below lsd, Apr. 1, 1948; lowest 82.87 below lsd, July 28, 1953. Records available: 1948-54. Jan. 27, 73.85; Mar. 25, 107.34, pumping; May 26, 105.75, pumping.

25.20.25.444. Richins Bros. Drilled water-table well in bolson deposits, diameter 16 inches, depth 204 feet. Land-surface datum is 4,261.29 feet above msl. Highest water level 69.00 below lsd, Apr. 1, 1948; lowest 94.39 below lsd, July 26, 1954. Records available: 1948-54. Jan. 27, 86.42; Mar. 25, 106.26, pumping; May 26, 106.05, pumping; July 26, 94.39; Sept. 16, 107.26, pumping; Nov. 11, 90.19.

25.20.27.434. Geo. S. Tippetts. Drilled irrigation water-table well in bolson deposits, diameter 33 inches, depth 102 feet. Land-surface datum is 4,231.80 feet above msl. Highest water level 52.65 below lsd, Mar. 21, 1949; lowest 84.63 below lsd, Sept. 15, 1954. Records available: 1948-54. Jan. 27, 71.61; Mar. 25, 71.89; May 26, 76.63; July 22, 80.20; Sept. 15, 84.63; Nov. 11, 76.23.

25.20.29.424. Baer Farms. Formerly Standsberry. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 125 feet. Highest water level 53.80 below lsd, Jan. 18, Mar. 21, 1950; lowest 68.20 below lsd, Nov. 10, 1954. Records available: 1950-54. Jan. 25, 65.86; May 26, 66.37; July 22, 66.90; Sept. 15, 67.62; Nov. 10, 68.20.

25.20.34.241. H. H. Hatch. Drilled unused well in valley fill, diameter 36 inches, reported depth 120 feet, caved at 90. Land-surface datum is 4,235.37 feet above msl. Highest water level 51.44 below lsd, Apr. 2, 1948; lowest 82.92 below lsd, Aug. 18, 1954. Records available: 1948-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	72.19	71.38	74.66	e76.33	78.84	81.49	82.38	.....	.....	78.18	76.48
2	.....	72.22	71.32	74.85	e76.46	78.92	81.43	82.31	.....	.....	78.09	76.36
3	.....	72.13	71.68	74.94	e76.42	79.14	81.46	82.28	.....	80.83	78.00	76.24
4	.....	72.12	71.93	74.92	e76.39	79.24	81.65	82.24	.....	80.68	77.92	76.23
5	.....	72.06	.....	74.99	e76.38	79.28	81.84	82.43	.....	80.56	.....	76.28
6	.....	72.07	72.18	75.24	.....	79.30	82.04	82.62	82.46	80.45	.....	76.09
7	.....	72.21	72.14	75.32	.....	79.25	82.18	82.45	82.54	80.36	.....	76.01
8	.....	71.99	72.27	75.52	.....	79.26	82.26	82.48	82.65	80.22	.....	76.04
9	.....	72.00	72.30	75.62	.....	79.38	82.21	82.48	82.46	80.08	77.81	75.96
10	.....	72.04	72.42	75.74	e76.74	79.63	82.27	82.53	82.41	79.97	77.75	75.85
11	.....	71.96	72.53	76.62	e76.79	79.74	82.50	82.58	82.64	79.89	77.69	75.96
12	.....	71.83	72.63	76.56	e76.99	80.06	82.57	82.63	82.69	79.80	77.55	75.92
13	.....	71.77	72.87	76.50	e77.22	80.25	82.66	82.62	82.84	79.72	77.48	75.84
14	.....	71.65	73.15	.....	e77.44	.....	.....	82.64	82.56	79.67	77.44	75.77
15	.....	71.82	73.14	.....	e77.57	80.00	.....	82.61	82.47	.....	77.35	75.74
16	.....	72.01	73.08	.....	e77.75	80.03	.....	82.59	82.33	79.47	77.28	75.66
17	.....	72.19	73.04	.....	e77.78	80.16	.....	82.78	82.41	79.38	77.27	75.76
18	.....	72.23	73.23	.....	e77.60	80.33	.....	82.92	82.38	79.28	77.20	.....
19	.....	72.14	73.35	.....	e77.88	80.36	.....	82.78	82.22	79.19	77.10	.....
20	.....	71.48	73.48	.....	.....	80.33	.....	82.21	82.26	79.10	76.95	75.69
21	.....	71.46	73.53	.....	.....	80.42	.....	81.89	82.31	79.01	76.84	75.61
22	.....	71.41	73.49	.....	.....	80.72	82.87	81.84	82.29	79.00	76.92	75.72
23	.....	71.59	73.44	.....	.....	80.86	82.88	81.85	82.25	78.88	.....	75.81
24	.....	71.57	73.50	e76.43	.....	81.00	82.79	81.90	82.16	78.82	.....	75.60
25	.....	71.69	73.65	e76.32	.....	81.25	82.62	81.91	82.00	78.73	.....	75.48
26	.....	71.50	73.74	e76.22	h78.21	81.55	82.59	81.89	81.84	78.53	.....	75.39
27	72.46	71.40	73.83	e76.02	78.31	81.62	82.55	81.91	.....	78.48	.....	75.35
28	72.32	71.64	73.96	e75.97	78.54	81.56	82.56	81.98	.....	78.41	76.51	75.60
29	72.31		74.16	e76.16	78.60	81.55	82.75	.....	.....	78.32	76.42	75.35
30	72.28		74.35	e76.23	78.81	81.50	82.42	.....	.....	78.26	76.50	75.32
31	72.27		74.70		78.92		82.53	.....		78.19		75.29

e Estimated.
h Tape measurement.

25.20.35.241. W. Veck. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 120 feet. Land-surface datum is 4,238.81 feet above msl. Highest water level 53.25 below lsd, Apr. 2, 1948; lowest 91.52 below lsd, Sept. 23, 1953. Records available: 1948-54. Jan. 27, 76.04; Mar. 25, 91.28, pumping; May 26, 87.46, pumped recently; July 26, 89.54, pumping; Sept. 16, 90.80, pumped recently; Nov. 11, 81.41.

25.20.35.434. W. Veck. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 120 feet. Land-surface datum is 4,245.96 feet above msl. Highest water level 50.27 below lsd, Apr. 2, 1948; lowest 83.51 below lsd, July 26, 1954. Records available: 1948-54. Jan. 26, 79.14; Mar. 25, 79.54; May 26, 80.33; July 26, 83.51; Sept. 15, 83.36; Nov. 11, 82.99.

26.19.31.333. Luther Edwards. Drilled irrigation water-table well in bolson deposits, diameter 15 inches, depth 200 feet. Land-surface datum is 4,340.62 feet above msl. Highest water level 84.13 below lsd, Mar. 22, 1949; lowest 110.11 below lsd, Sept. 15, 1954. Records available: 1948-54. Mar. 25, 98.26, pumped recently; May 26, 127.17, pumping; July 26, 115.35, pumping, measurement uncertain; Sept. 15, 110.11; Nov. 9, 98.86.

26.20.2.344. R. H. Wamel. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 157 feet. Highest water level 66.33 below lsd, Mar. 22, 1949; lowest 92.25 below lsd, Jan. 26, 1954. Records available: 1948-54. Jan. 26, 92.25; May 26, 119.40, pumping; Nov. 11, 88.16.

26.20.4.444a. W. W. Roark. Drilled irrigation water-table well in bolson deposits, diameter 16 inches. Highest water level 79.81 below lsd, Jan. 21, 1953; lowest 109.77 below lsd, Sept. 15, 1954. Records available: 1952-54. Jan. 26, 85.45; July 26, 97.27, pumped recently; Sept. 15, 109.77; Nov. 11, 91.45.

26.20.5.334. D. A. Lee. Drilled irrigation water-table well in bolson deposits, diameter 40 to 12 inches, depth 100 feet. Land-surface datum is 4,240.81 feet above msl. Highest water level 54.05 below lsd, Apr. 3, 1948; lowest 78.44 below lsd, Sept. 15, 1954. Records available: 1948-54. Jan. 26, 73.65; Mar. 25, 72.70; May 26, 88.72, nearby well being pumped; July 26, 77.71; Sept. 15, 78.44; Nov. 11, 76.93.

26.20.9.444a. Mrs. H. K. Wood. Drilled irrigation water-table well in bolson deposits, diameter 18 inches, depth 140 feet. Land-surface datum is 4,259.56 feet above msl. Highest water level 72.52 below lsd, May 23, 1948; lowest 105.67 below lsd, Sept. 15, 1954. Records available: 1948-54. Jan. 26, 91.73; Mar. 25, 107.54, pumping; May 26, 97.12; July 26, 117.82, pumping; Sept. 15, 105.67; Nov. 11, 97.65.

26.20.10.344. S. O. Wright. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 144 feet. Land-surface datum is 4,266.12 feet above msl. Highest water level 63.08 below lsd, Mar. 22, 1949; lowest 91.53 below lsd, Sept. 23, 1953. Records available: 1948-54. Jan. 26, 77.94; Mar. 25, *88.52; May 26, *93.37; July 26, *94.21; Sept. 15, 89.64; Nov. 10, 84.14. * Nearby well being pumped.

26.20.14.242. R. H. Wamel. Drilled water-table well in bolson deposits, diameter 16 inches, depth 150 feet. Land-surface datum is 4,293.30 feet above msl. Highest water level 79.44 below lsd, Apr. 3, 1948; lowest 100.75 below lsd, Nov. 11, 1954. Records available: 1948-54. Jan. 26, 98.75; Mar. 25, 98.16; May 26, 98.50; Sept. 15, 100.11; Nov. 11, 100.75.

26.20.15.444. Crabtree. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 148 feet. Land-surface datum is 4,284.18 feet above msl. Highest water level 62.91 below lsd, Mar. 22, 1949; lowest 91.35 below lsd, July 28, 1953. Records available: 1948-54. Jan. 26, 78.93; Mar. 25, 108.32, pumping; May 26, 79.95; July 26, 137.53, pumping; Nov. 9, 90.29.

26.20.25.211. R. H. Wamel. Dug unused water-table well in bolson deposits, diameter 36 inches, depth 112 feet. Highest water level 93.42 below lsd, Sept. 27, 1948; lowest 119.65 below lsd, Sept. 15, 1954. Records available: 1948-54. Jan. 26, 112.09; Mar. 25, 111.44; May 26, 111.70; July 26, 112.31; Sept. 15, 119.65; Nov. 9, 114.61.

26.20.26.422. Kate Washburn. Drilled water-table well in bolson deposits, diameter 16 inches, depth 151 feet. Land-surface datum is 4,311.09 feet above msl. Highest water level 75.65 below lsd, Apr. 5, 1948; lowest 107.51 below lsd, Sept. 15, 1954. Records available: 1948-54. Jan. 26, 92.48; Mar. 25, 92.87; May 26, 137.26, pumping; July 26, 103.66; Sept. 15, 107.51; Nov. 9, 101.94.

26.20.29.142. Kate Washburn. Drilled irrigation water-table well in bolson deposits, diameter 14 inches, depth 132 feet. Highest water level 48.86 below lsd, May 23, 1948; lowest 57.17 below lsd, Jan. 25, 1954. Records available: 1948-54. Jan. 25, 57.17.

26.21.11.200. R. F. Robinson. Drilled stock water-table well in bolson deposits, diameter 6 inches, depth 89 feet. Highest water level 77.71 below lsd, July 23, 1948; lowest 87.06 below lsd, Nov. 10, 1954. Records available: 1948-54. Jan. 25, 84.23; Mar. 25, 84.43; May 26, 84.75; July 24, 85.29; Sept. 15, 85.68; Nov. 10, 87.06.

27.19.20.343. Felix Gauthier. Drilled water-table well in bolson deposits, diameter 16 inches. Highest water level 131.90 below lsd, July 29, 1949; lowest 140.17 below lsd, Sept. 15, 1954. Records available:. 1949-54. Jan. 25, 138.11; Mar. 25, 138.12; May 26, 139.16; July 24, 139.77; Sept. 15, 140.17; Nov. 10, 140.06.

27.19.21.111. U. S. Government. Drilled unused water-table well in bolson deposits, diameter 6 inches, depth 139 feet. Highest water level 123.93 below lsd, July 29, 1949; lowest 129.30 below lsd, July 27, 1953. Records available: 1949-53. Measurement discontinued.

27.19.32.211. Herbert Strange. Drilled unused water-table well in bolson deposits, diameter 6 inches, depth 155 feet. Highest water level 144.84 below lsd, May 25, 1949; lowest 152.95 below lsd, Nov. 10, 1954. Records available: 1949-54. Jan. 25, 148.94; Mar. 25, 148.99; May 26, 149.28; July 24, 149.79; Sept. 15, 152.74; Nov. 10, 152.95.

27.20.9.100. Kate A. Washburn. Dug stock water-table well in bolson deposits, diameter 36 to 6 inches, depth 86 feet. Highest water level 71.20 below lsd, Aug. 1, Sept. 3, 1949; lowest 79.82 below lsd, Sept. 15, 1954. Records available: 1949-54. Jan. 25, 76.83; Mar. 25, 77.79, pumping; May 26, 77.94; July 24, 79.19, pumping; Sept. 15, 79.82.

27.20.12.444a. Mrs. Edna Curry. Drilled irrigation water-table well in bolson deposits, diameter 16 inches. Highest water level 111.67 below lsd, Mar. 21, 1953; lowest 119.00 below lsd, July 26, 1954. Records available: 1953-54. Jan. 26, 112.04; Mar. 25, 112.13; May 26, 151.93, pumping; July 26, 119.00; Sept. 15, 149.99, pumping; Nov. 9, 114.55.

28.19.15.433. Joe G. Good. Dug unused water-table well in bolson deposits, diameter 36 inches, depth 35 feet. Highest water level 28.56 below lsd, Jan.17, 1951; lowest 34.96 below lsd, Sept. 15, 1954. Records available: 1949-54. Jan. 25, 32.28; Mar. 25, 32.31; May 26, 33.13; July 26, 34.67; Sept. 15, 34.96; Nov. 10, 30.80.

28.19.15.433a. Joe G. Good. Drilled stock water-table well in bolson deposits, diameter 6 inches, depth 306 feet. Highest water level 206.31 below lsd, Nov. 23, 1949; lowest 217.02 below lsd, Mar. 25, 1954. Records available: 1949-54. Jan. 25, 216.86; Mar. 25, 217.02; May 26, 218.18, pumped recently; July 26, 217.64; pumping; Sept. 15, 217.98, pumping; Nov. 10, 219.24, pumping.

28.19.20.244. U. S. Government. Drilled stock water-table well in bolson deposits, diameter 6 inches, depth 270 feet. Highest water level 255.54 below lsd, May 24, 1949; lowest 260.44 below lsd, Nov. 25, 1951; Records available: 1948-54. Jan. 25, 257.93, pumped recently; Mar. 25, 259.01, pumping; May 26, 257.53; July 24, 257.64; Sept. 15, 257.33; Nov. 10, 258.85.

29.19.3.100. T. B. Strickland. Dug stock water-table well in bolson deposits, diameter 36 inches, depth 30 feet. Highest water level 22.65 below lsd, Dec. 4, 1950; lowest 27.99 below lsd, May 26, 1954. Records available: 1949-54. Jan. 25, 27.28; Mar. 25, 27.37; May 26, 27.99; July 24, 27.41; Sept. 15, 26.52; Nov. 10, 25.46.

29.19.3.300. T. B. Strickland. Dug water-table well in bolson deposits, diameter 6 feet, depth 21 feet. Highest water level 12.96 below lsd, Sept. 26, 1950; lowest dry at 20.5, May 21, 1952. Records available: 1949-54. Jan. 25, 19.02; Mar. 25, 19.18; May 26, 19.31; July 24, 20.10; Sept. 15, 16.97; Nov. 10, 16.63.

Playas Valley

30.16.11.331. Sim Smith. Drilled irrigation water-table well in bolson deposits, diameter 12 inches, depth 115 feet. Highest water level 40.88 below lsd, Mar. 15, 1951; lowest 48.42 below lsd, Sept. 17, 1954. Records available: 1951-54. Jan. 29, 44.15; Mar. 26, 43.90; May 27, 44.73; July 21, 46.70; Sept. 17, 48.42; Nov. 15, 44.76.

30.16.14.211. M. T. Everhart, Jr. Drilled irrigation water-table well in bolson deposits, diameter 12 inches, depth 180 feet. Highest water level 31.69 below lsd, May 20, 1949; lowest 52.88 below lsd, May 24, 1952. Records available: 1948-53. Measurement discontinued.

30.16.16.244. A. G. McMath. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 80 feet. Highest water level 37.48 below lsd, July 29, 1951; lowest 44.90 below lsd, Sept. 21, 1953. Records available: 1950-54. Jan. 29, 40.51; Mar. 26, 40.68; May 27, 39.63; July 27, 39.03; Sept. 17, 38.72; Nov. 15, 39.60.

30.16.21.412. A. C. Gillespie. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 160 feet. Highest water level 37.34 below lsd, July 30, 1948; lowest 48.56 below lsd, Nov. 23, 1953. Records available: 1948-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 30, 1948	37.34	May 12, 1953	a79.21	Jan. 29, 1954	47.43	July 27, 1954	48.06
Jan. 23, 1953	45.31	Sept. 21	b61.12	Mar. 26	a72.89	Sept. 17	47.03
Mar. 20	44.90	Nov. 23	48.56	May 27	a77.74	Nov. 15	46.74.

a Pumping.
b Pumped recently.

30.16.28.334. Myers Bros. Drilled irrigation water-table well in bolson deposits, diameter 16 inches. Highest water level 48.03 below lsd, Jan. 16, 1950; lowest 66.92 below lsd, Sept. 17,1954. Records available: 1949-50, 1954. Jan. 29, 61.12; Mar. 26, 71.93, pumping; May 27, 75.35, pumping; July 27, 63.80; Sept. 17, 66.92; Nov. 15, 60.30.

30.16.29.422. Myers Bros. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 160 feet. Highest water level 43.85 below lsd, Feb. 4, 1949; lowest 61.17 below lsd, Nov. 23, 1953. Records available: 1948-54. Jan. 29, 59.61; Mar. 26, 58.39; May 27, 59.33; Sept. 17, 60.07; Nov. 15, 59.22.

32.16.30. Lot 2. C. C. Edwards. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 150 feet. Highest water level 85.11 below lsd, Mar. 27, 1952; lowest 86.78 below lsd, July 30, 1953. Records available: 1952-54. Jan. 29, 85.51; Mar. 26, 85.98; May 27, 85.49; July 28, 108.74, pumping; Sept. 17, 90.15, pumped recently ; Nov. 15, 85.57.

32.17.13.240. Victoria Land & Cattle Co. Drilled unused water-table well in bolson deposits, diameter 6 inches, depth 64 feet. Highest water level 57.92 below lsd, May 20, 1949; lowest 59.34 below lsd, July 30, 1953. Records available: 1949-54. Jan. 29, 59.01; Mar. 26, 59.01; May 27, 59.05; July 28, 59.10; Sept. 17, 59.18; Nov. 15, 59.18.

32.17.23.434. Mr. Timberlake. Drilled irrigation water-table well in bolson deposits, diameter 12 inches, depth 162 feet. Highest water level 96.09 below lsd, Mar. 23, 1949; lowest 99.35 below lsd, Nov. 23, 1948. Records available: 1948-53. Measurement discontinued.

Virden Valley

18.21.32.130. P. Lunt. Drilled stock well, diameter 8 inches, depth 114 feet. Land-surface datum is about 3,757 feet above msl. Highest water level 35.30 below lsd, June 3, 1940; lowest 55.35 below lsd, Mar. 10, 1942. Records available: 1939-54. Mar. 10, 48.12; May 19, 48.05; Nov. 9, 45.50.

18.21.32.440. J. Pierce. Near Virden. Dug unused domestic well, diameter 36 inches, depth 40 feet. Land-surface datum is about 3,736 feet above msl. Highest water level 29.12 below lsd, Jan. 7, 1941; lowest dry, Aug. 27, Nov. 5, 1951. Records available: 1939-54. Mar. 10, 34.02; May 19, 33.60; Aug. 11, 35.56; Nov. 9, 35.04.

19.20.18.120. Floyd Johns. Drilled domestic well, diameter 8 inches, depth 60 feet. Land-surface datum is about 3,804 feet above msl. Highest water level 20.05 below lsd, Feb. 1, 1945; lowest 55.00 below lsd, July 23, 1947. Records available: 1939-54. Mar. 10, 28.03; May 19, 26.84; Aug. 11, 43.98, nearby well being pumped; Nov. 9, 29.27.

19.21.2.330a. Byron Echols. Drilled irrigation well, diameter 20 inches, depth 80 feet. Land-surface datum is about 3,755 feet above msl. Highest water level 14.58 below lsd, Mar. 1, 1949; lowest 23.19 below lsd, Nov. 5, 1951. Records available: 1948-54. Mar. 10, 16.82; May 19, 15.00; Aug. 11, 17.16; Nov. 9, 15.66.

19.21.2.410. J. E. Payne. Drilled unused irrigation well, diameter 18 inches, depth 106 feet. Land-surface datum is about 3,788.6 feet above msl. Highest water level 41.66 below lsd, Oct. 22, 1941; lowest 53.13 below lsd, Nov. 5, 1951. Records available: 1939-54. Mar. 10, 46.62; May 19, 45.65; Aug. 11, 46.53. Measurement discontinued.

19.21.12.420. Nancy O. Pace. Dug domestic well, diameter 4 feet, depth 30 feet. Land-surface datum is 3,792 feet above msl. Highest water level 10.16 below lsd, May 6, 1952; lowest dry Nov. 5, 1951, Nov. 9, 1954. Records available: 1939-54. Mar. 10, 21.52; May 19, 21.73; Nov. 9, dry.

Lea County

Tatum-Lovington-Hobbs area. --The Tatum-Lovington-Hobbs area is part of the High Plains in southeastern New Mexico. Ground water in sufficient quantities for irrigation, industrial, and municipal use is obtained from the Ogallala formation. The Lea County ground-water basin, as extended by order of the State Engineer on October 1, 1952, includes about 2,180 square miles of the High Plains. Water levels have been measured in the area since 1929 to determine the effects of pumping and precipitation upon the ground-water storage. Records of these measurements have been published annually since 1940. Water levels were measured in 203 wells in January 1954 and in about 40 of these at bimonthly intervals during the year. Recording gages were maintained on 3 wells; 1 about a mile northwest of Lovington, 1 about 17 miles southwest of Lovington, and 1 about 12 miles east of Lovington. The January measurements, not all of which are included in this report, were used in preparing the map showing the net change in water levels in 1954 (fig. 59).

Precipitation in 1954 in Lea County was near normal at Lovington and Hobbs but about 85 percent of normal at Pearl, 15 miles west of Hobbs, and about 65 percent of normal at Tatum, in the northern part of the county. It amounted to 14.29 inches at Lovington, 1.18 inches below normal; 16.08 inches at Hobbs, 0.13 inch above normal; 11.33 inches at Pearl, 2.17 inches below normal; and 10.91 inches at Tatum, 5.70 inches below normal. During the growing season (April through September) it was near normal at Lovington, about 10 percent above normal at Hobbs and Pearl, but about half of normal at Tatum. About 80 percent of the annual precipitation at Lovington, Hobbs, and Pearl, and about 55 percent at Tatum fell during the growing season.

It is estimated that about the same or slightly more land, 93,000 acres, was irrigated in 1954 than in 1953 but a slightly smaller amount of ground water was used. The smaller water requirement was indicated by electric-power records of 177 irrigation pumps for both 1953 and 1954. It is estimated that in 1954 about 163,000 acre-feet of water was pumped for irrigation as compared with about 165,000 acre-feet in 1953. Pumpage for municipal use at Lovington reportedly increased from about 970 acre-feet in 1953 to about 1,100 acre-feet in 1954. Pumpage for municipal use at Hobbs reportedly decreased from about 4,360 acre-feet in 1953 to about 3,700 acre-feet in 1954. The estimate of pumpage for these two places is based on metered use

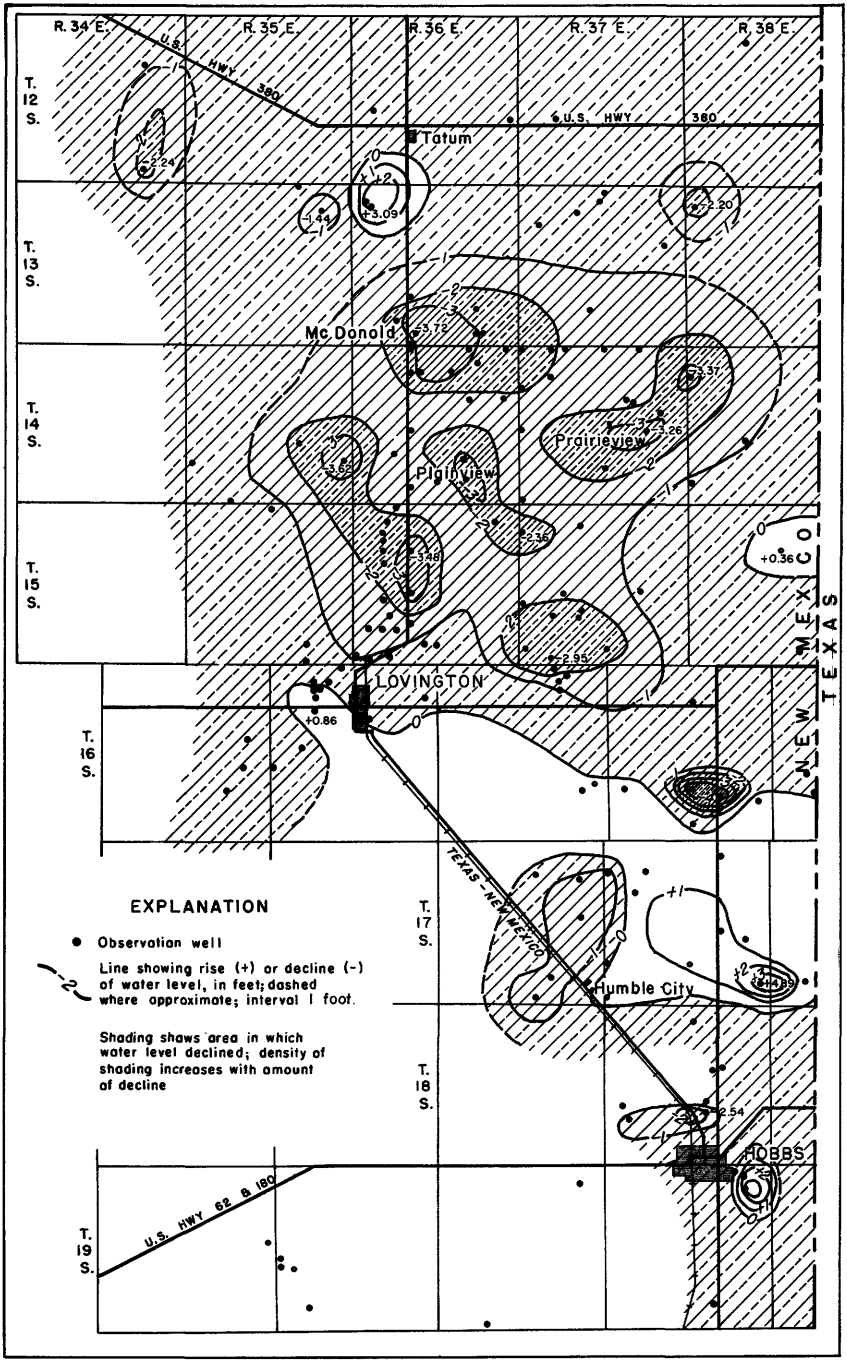


Figure 59.--Change in ground-water level from January 1954 to January 1955 in Tatum-Lovington-Hobbs area of High Plains, Lea County, N. Mex.

plus an estimate of unmetered use. The estimate of ground water used for municipal, stock, and industrial needs in 1954 is about 14,000 acre-feet, which is about the same as in 1953.

From January 1954 to January 1955, water levels declined more than 3 feet under 7 small areas in the vicinity of Lovington, McDonald, and Prairieview. However, in general, the water-level declines were not so great as in 1953. Figure 59 shows the areal changes in water levels from January 1954 to January 1955. In this period, net water-level declines of more than a foot occurred under about 243 square miles, more than 2 feet under about 78 square miles, more than 3 feet under about 17 square miles, and more than 4 feet under about 3 square miles. This is compared with like declines in 1953 under 373, 137, 49, and 7 square miles, respectively. Above-normal precipitation in April, May, and August, 1954, reduced the pumpage required for irrigation. Floodwater from heavy precipitation in April and May at Lovington and northwest of Lovington flowed southeastward, filling numerous depressions and resulting in some recharge to the ground-water reservoir. In the area south of Lovington and west of Hobbs, where there is little irrigated acreage, slight rises of water level were also noted, indicating some recharge to the ground-water reservoir there.

The declines of water level, which continued in 1954 throughout most of the area, amounted to more than 18 feet from January 1950 to January 1955 in 4 small areas--namely, 1 mile east of Prairieview, at Lovington, about 7 miles east of Lovington, and about 14 miles north of Hobbs. During the same period, water levels declined more than 6 feet under an area of about 360 square miles and more than 12 feet under about 96 square miles. The areas of greatest decline coincide, in general, with the areas of greatest pumping. By the end of 1954, water levels reached the lowest winter levels of record, except in the area from Lovington southeastward, where they rose. Also, in a few wells that are distant from irrigation and pumping, water levels at the end of 1954 were still slightly above the record low observed in 1941 prior to the heavy precipitation in that year.

Tatum-Lovington-Hobbs Area

11.33.25.442. Owner unknown. Drilled water-table well in Ogallala formation, diameter 8 inches, depth 69 feet. Highest water level 33.86 below lsd, Nov. 8, 1954; lowest 33.97 below lsd, July 14, 1954. Records available: 1953-54. Jan. 14, 33.88; Mar. 6, 33.88; May 8, 33.90; July 14, 33.97; Sept. 16, 33.90; Nov. 8, 33.86.

12.31.23.333. F. E. Dickson. Drilled unused water-table well in Ogallala formation, diameter 3 inches, depth 148 feet. Highest water level 130.15 below lsd, Nov. 13, 1953; lowest 130.37 below lsd, May 12, 1954. Records available: 1953-54. Jan. 15, 130.24; Mar. 6, 130.32; May 12, 130.37; July 21, 130.34; Sept. 16, 130.24; Nov. 8, 130.31.

12.31.26.333. F. E. Dickson. Drilled unused water-table well in Ogallala formation, diameter 6 inches, depth 145 feet. Highest water level 132.09 below lsd, Mar. 6, May 12, 1954; lowest 132.17 below lsd, Jan. 15, Nov. 8, 1954. Records available: 1953-54. Jan. 15, 132.17; Mar. 6, 132.09; May 12, 132.09; July 21, 132.10; Sept. 16, 132.12; Nov. 8, 132.17.

12.31.26.333a. F. E. Dickson. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 145 feet. Highest water level 130.40 below lsd, Jan. 15, July 21, 1954; lowest 130.78 below lsd, July 27, 1953. Records available: 1953-54. Jan. 15, 130.40; Mar. 6, 130.44; May 12, 130.45; July 21, 130.40; Sept. 16, 130.42; Nov. 8, 130.47.

12.34.11.413. A. D. Jones Estate. Drilled unused water-table well in Ogallala formation, diameter 15 inches, depth 87 feet. Highest water level 29.57 below lsd, May 24, 1949; lowest 31.79 below lsd, Nov. 8, 1954. Records available: 1949-54. Jan. 14, 31.47; Mar. 6, 31.54; May 8, 31.57; July 14, 31.68; Sept. 16, 31.73; Nov. 8, 31.79.

12.36.24.434a. J. C. Clay. Drilled domestic water-table well in Ogallala formation, diameter 6 inches. Highest water level 22.85 below lsd, Jan. 15, 1948; lowest 25.08 below lsd, Sept. 16, 1954. Records available: 1947-54. Jan. 12, 24.66, pumping; Mar. 6, 24.66, pumping; May 8, 24.84, pumping; July 14, 24.98; Sept. 16, 25.08; Nov. 12, 25.06.

13.35.2.111a. Owner unknown. Drilled unused water-table well in Ogallala formation. Highest water level 27.30 below lsd, Apr. 20, 1953; lowest 28.21 below lsd, Nov. 12, 1954. Records available: 1953-54. Jan. 12, 27.71; Mar. 5, 27.81; May 8, 27.92; July 14, 28.05; Sept. 16, 28.15; Nov. 12, 28.21.

13.37.7.234. W. D. Patton. Drilled unused water-table well in Ogallala formation, diameter 6 inches. Highest water level 29.56 below lsd, Mar. 27, Nov. 15, 1947; lowest 32.55 below lsd, Nov. 12, 1954. Records available: 1945-54. Jan. 9, 32.15; Mar. 6, 32.24; May 8, 32.33; July 14, 32.44; Sept. 16, 32.52; Nov. 12, 32.55.

13.37.13.132. Taylor. Formerly A. M. Brownfield. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 42 feet. Highest water level 25.46 below lsd, Aug. 12, 1941; lowest 31.62 below lsd, May 8, July 14, 1954. Records available: 1930-54. Jan. 9, 31.28; Mar. 6, 31.48; May 8, 31.62; July 14, 31.62; Sept. 16, 31.02; Nov. 12, 31.47.

14.35.33.433. W. A. Anderson. Drilled unused water-table well in Ogallala formation, diameter 6 inches, depth 62 feet. Land-surface datum is 4,013.59 feet above msl. Highest water level 39.65 below lsd, May 21, July 25, 1951, Jan. 9, May 24, 1952; lowest 42.53 below lsd, Nov. 12, 1954. Records available: 1929-54. Jan. 6, 41.71; Mar. 3, 41.79; May 8, 41.92; July 14, 42.07; Sept. 15, 42.27; Nov. 12, 42.53.

14.36.4.111. Lewis Beaman. Drilled domestic water-table well in Ogallala formation, diameter 6 inches. Highest water level 42.73 below lsd, Mar. 23, 1949; lowest 57.57 below lsd, Sept. 15, 1954. Records available: 1949-54. Jan. 12, 53.04; Mar. 5, 52.81; May 8, 54.50; July 14, 55.86; Sept. 15, 57.57; Nov. 12, 55.92.

14.36.13.211. Mrs. Mattie Field. Formerly Mattie Chambers. Drilled unused water-table well in Ogallala formation, diameter 12 inches, depth 87 feet. Land-surface datum is 3,904.59 feet above msl. Highest water level 35.74 below lsd, Jan. 30, May 24, 1946; lowest 43.73 below lsd, Nov. 12, 1954. Records available: 1929-54. Jan. 9, 42.39; Mar. 5, 42.55; May 8, 42.73; July 14, 43.02; Sept. 16, 43.36; Nov. 12, 43.73.

14.37.15.222. O. A. Pope. Drilled unused irrigation water-table well in Ogallala formation, diameter 16 inches, depth 140 feet. Highest water level 53.89 below lsd, Mar. 23, 1953; lowest 78.04 below lsd, Sept. 16, 1954. Records available: 1953-54. Jan. 9, 59.44; Mar. 5, 67.89, nearby well being pumped; May 7, 73.07, nearby well being pumped; July 14, 84.90, nearby well being pumped; Sept. 16, 78.04; Nov. 12, 64.69.

14.37.27.131. J. R. Fort. Drilled unused water-table well in Ogallala formation, diameter 7 inches, depth 52 feet. Highest water level 36.10 below lsd, May 22, 1947; lowest dry at 51.6, Sept. 16, Nov. 12, 1954. Records available: 1929-54. Jan. 9, 49.67; Mar. 5, 49.37; May 7, 50.44; July 14, 50.93; Sept. 16, 51.6, dry; Nov. 12, 51.6, dry.

14.37.31.333. T. N. and E. N. Miller. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 130 feet. Highest water level 43.59 below lsd, Mar. 21, 1949; lowest 71.96 below lsd, Sept. 10, 1953. Records available: 1949-54. Jan. 6, 56.50; Mar. 3, 54.37; May 8, 84.54, pumping; July 14, 70.51; Nov. 12, 60.12.

14.38.21.311. Claude Cox. Drilled irrigation water-table well in Ogallala formation, diameter 14 inches, depth 105 feet. Highest water level 32.48 below lsd, Jan. 21, 1949; lowest 48.35 below lsd, Sept. 16, 1954. Records available: 1949-54. Jan. 5, 44.00; Mar. 5, 43.52; May 7, 47.89; Sept. 16, 48.35; Nov. 12, 45.84.

15.36.8.111a. Gordon Gann. Drilled domestic water-table well in Ogallala formation, diameter 6 inches, depth 105 feet. Highest water level 41.33 below lsd, Mar. 23, 1949; lowest 56.08 below lsd, Nov. 12, 1954. Records available: 1949-54. Jan. 6, 52.06, pumped recently; Mar. 3, 53.02, pumping; May 8, 57.30, pumping; July 14, 62.15, pumped recently; Sept. 15, 65.15, pumped recently; Nov. 12, 56.08.

15.37.21.334. R. W. Dean. Drilled stock water-table well in Ogallala formation, diameter 8 inches, reported depth 80 feet. Highest water level 29.10 below lsd, July 27, 1943; lowest 46.07 below lsd, Jan. 6, 1954. Records available: 1930-54. Jan. 6, 46.07; Mar. 3, 48.35, pumping; May 7, 52.95, pumping; July 14, 53.21, pumping, nearby well being pumped; Sept. 16, 56.40, nearby well pumped recently; Nov. 12, 54.71, pumping.

16.35.13.112. W. T. Zuber. Drilled irrigation water-table well in Ogallala formation, diameter 12 inches, reported depth 100 feet. Highest water level 42.36 below lsd, Mar. 26, 1948; lowest 53.03 below lsd, Sept. 14, 1953. Records available: 1948-54. Jan. 13, 48.95; Mar. 3, 48.60; May 8, 49.07; July 19, 51.08; Sept. 15, 63.96, pumping; Nov. 10, 51.02.

16.36.4. Lot 12. E. H. Byers. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 65 feet. Highest water level 43.35 below lsd, Mar. 14, 1943; lowest 57.15 below lsd, Oct. 17, 1954. Records available: 1934-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	55.38	.....	55.19	55.74	55.95	55.98	56.28	56.32	56.85	56.72	56.68	56.21
2	55.38	.....	55.19	55.79	55.95	55.98	56.38	56.31	56.83	56.83	56.65	56.19
3	55.36	.....	55.19	55.85	55.93	56.00	56.47	.....	56.82	56.91	56.63	56.20
4	55.35	.....	55.18	55.91	55.92	56.01	56.56	.....	56.82	56.93	56.61	56.25
5	55.34	.....	55.19	55.94	55.92	56.01	56.60	.....	56.81	56.96	56.59	56.36

16.36.4. Lot 12--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	55.33	.....	55.18	55.99	55.89	55.99	56.59	.....	56.79	57.00	56.57	56.42
7	55.32	.....	55.19	56.05	55.88	56.00	56.57	56.30	56.77	57.04	56.55	56.47
8	55.31	.....	55.16	56.12	55.87	56.01	56.55	56.30	56.77	57.04	56.54	56.36
9	55.31	.....	55.16	56.18	55.87	56.03	.....	56.29	56.77	57.06	56.52	56.29
10	55.31	.....	55.16	56.25	55.86	56.03	.....	56.28	56.76	57.07	56.51	56.23
11	55.30	.....	55.15	56.30	55.86	56.03	.....	56.27	56.75	57.07	56.48	56.17
12	55.28	.....	55.17	56.32	55.85	56.04	.....	56.27	.....	57.04	56.44	56.15
13	55.28	.....	55.19	56.34	55.84	56.05	56.27	56.27	.....	57.04	56.43	56.13
14	55.28	.....	55.19	56.32	55.83	56.05	56.26	56.27	.....	57.08	56.42	56.12
15	55.28	.....	55.17	56.31	55.83	56.05	56.25	56.27	56.73	57.10	56.40	56.07
16	55.27	.....	55.17	56.28	55.83	56.06	56.24	56.28	56.72	57.12	56.38	56.00
17	55.29	.....	55.17	56.24	55.29	56.07	56.23	56.34	56.72	57.15	56.37	55.99
18	55.29	.....	55.20	56.20	55.25	56.08	56.23	56.44	56.71	57.11	56.36	55.95
19	55.27	.....	55.21	56.17	e55.85	56.09	56.23	56.48	56.71	57.07	56.34	55.93
20	55.28	e55.16	55.22	56.15	55.87	56.11	56.27	56.51	56.71	57.04	56.32	55.93
21	55.27	.....	55.20	56.11	55.86	56.11	56.29	56.57	56.69	57.00	56.32	55.90
22	55.27	.....	55.20	56.08	55.84	56.11	56.32	56.64	56.68	56.95	56.30	55.87
23	55.25	.....	55.21	56.06	55.84	56.11	56.31	56.68	56.67	56.91	56.29	55.91
24	55.25	.....	55.27	56.05	55.84	56.14	56.29	56.74	56.67	56.88	56.28	55.89
25	55.24	.....	55.31	56.03	55.83	56.10	56.27	56.79	56.65	56.85	56.26	55.89
26	55.24	.....	55.34	56.02	55.82	56.00	56.26	56.85	56.63	56.83	56.26	55.92
27	55.24	.....	55.41	56.00	55.97	56.00	56.25	56.88	56.62	56.80	56.23	55.97
28	55.23	55.21	55.48	55.98	55.99	56.07	56.29	56.90	56.61	56.77	56.24	56.03
29	55.22		55.54	55.97	55.99	56.13	56.33	56.89	56.61	56.74	56.22	56.10
30	55.21		55.62	55.96	55.99	56.19	56.33	56.87	56.65	56.72	56.22	56.17
31	.....		55.70		55.99		56.32	56.86		56.69		56.21

e Estimated.

16.37.11.111. A. J. Birkshire. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 118 feet. Highest water level 31.93 below lsd, Jan. 23, 1949; lowest 61.01 below lsd, Sept. 3, 1953. Records available: 1949-54. Jan. 5, 52.13; Mar. 3, 50.19; May 7, 59.1, pumping; Sept. 14, 60.93; Nov. 9, 56.59.

16.38.3.333. State of New Mexico. Drilled test hole water-table well in Ogallala formation, diameter 8 inches, depth 107 feet, cased to 100. Highest water level 24.44 below lsd, May 29-June 25, 1954; lowest 25.03 below lsd, Dec. 18-31, 1954. Records available: 1953-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	24.90	24.94	24.99	24.99	e24.50	24.44	24.48	24.64	24.80	24.91	.....	e25.02
10	24.93	24.94	24.99	24.99	24.47	24.44	24.50	24.68	24.82	24.92	e25.01	e25.02
15	24.93	24.94	24.99	24.74	24.47	24.44	24.55	24.71	24.87	24.94	e25.01	e25.02
20	24.93	24.96	24.99	24.62	24.48	24.44	24.58	24.72	24.87	24.95	e25.01	e25.03
25	24.93	24.96	24.99	e24.59	24.45	24.44	24.59	24.76	24.89	24.93	e25.01	e25.03
30	24.94		24.99	e24.55	24.44	24.47	24.62	24.79	24.89	.....	e25.02	e25.03

e Estimated.

16.38.34.131. Ralph Moe. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 140 feet. Highest water level 35.06 below lsd, May 22, 1947; lowest 58.35 below lsd, Sept. 3, 1953. Records available: 1947-54. Jan. 7, 51.08; Mar. 3, 50.66; May 7, 51.25; July 13, 79.11, nearby well being pumped; Sept. 14, 57.19; Nov. 9, 52.62.

17.33.13.341. Potash Co. of America. Drilled water-table well in Ogallala formation, diameter 6 inches, depth 252 feet, cased to 252. Highest water level 146.00 below lsd, Jan. 21, 1953; lowest 150.69 below lsd, Sept. 24, 1954. Records available: 1952-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	148.79	148.29	147.84	148.62	149.49	149.76	e150.20	150.31	150.53	150.59	150.25	150.29
2	148.90	148.26	148.10	148.74	149.52	149.89	150.23	150.37	150.49	150.58	150.14	150.24
3	148.80	148.25	147.99	148.74	149.48	149.93	150.26	150.37	.....	150.61	150.12	150.27
4	148.84	148.26	147.89	148.81	149.49	149.86	150.28	150.39	e150.48	.....	150.23	150.24
5	148.81	148.15	148.02	148.87	149.58	149.91	150.27	150.42	150.45	150.52	150.13	150.40
6	148.78	148.18	147.96	148.86	149.59	.....	150.29	150.47	150.40	150.51	150.13	150.29
7	148.72	148.17	148.02	148.94	149.64	149.97	150.31	150.52	150.36	150.50	150.15	150.31
8	148.72	148.12	147.96	148.95	149.63	149.91	150.28	150.57	150.36	150.40	150.20	150.42
9	148.79	148.06	147.99	148.95	149.71	150.00	150.30	150.54	150.37	150.35	150.22	150.40
10	148.80	148.06	148.01	149.06	149.62	149.94	150.31	150.51	150.30	150.34	150.26	150.37

17.33.13.341--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	148.68	148.17	148.01	149.11	149.69	150.01	150.31	150.49	150.25	150.36	150.24	150.48
12	148.63	148.00	148.17	149.12	149.72	149.98	150.31	150.50	150.24	150.36	150.17	150.49
13	148.65	147.99	148.19	149.05	149.67	149.90	150.32	150.51	150.26	150.35	150.14	150.37
14	.....	148.01	148.13	149.07	149.71	149.98	150.36	150.48	150.28	150.40	150.32	150.45
15	.....	148.03	148.19	149.11	149.68	150.04	150.38	150.47	150.27	150.30	150.21	150.32
16	.....	148.01	148.10	149.30	149.67	150.05	150.39	.....	150.32	150.28	150.21	150.39
17	148.56	147.92	148.02	149.25	149.67	150.11	150.40	.....	150.37	150.29	150.25	150.39
18	148.56	147.84	148.13e	149.28	149.72	150.13	150.42	.....	150.41	150.33	150.18	150.37
19	148.52	148.01	148.27	149.34	149.75	150.10	150.44	150.35	150.47	150.27	150.13	150.34
20	148.59	147.94	148.27	149.39	149.75	150.12	150.46	150.28	150.57	150.27	150.07	150.23
21	148.57	147.97	148.30	149.46	149.75	150.13	150.48	150.33	150.59	150.31	150.11	150.25
22	148.47	147.91	148.38	149.46	149.77	150.14	150.48	.....	150.57	150.35	150.05	150.18
23	148.45	147.90	148.39	149.48	149.86	150.10	150.47	.....	150.61	150.30	150.06	150.21
24	148.50	147.83	148.47	149.49	149.89	150.09	150.48	150.26	150.69	150.34	150.09	150.11
25	148.43	147.93	148.57	149.48	149.75	150.12	150.48	150.28	150.63	150.30	150.04	150.11
26	148.47	147.85	148.53	149.57	149.82	150.11	150.46	150.36	150.61	150.36	150.12	150.09
27	148.43	147.92	148.57	149.53	149.79	150.09	150.41	150.41	150.58	150.26	150.01	150.12
28	148.32	147.83	148.56	149.52	149.84	150.12	150.46	150.48	150.62	150.21	150.27	150.16
29	148.35		148.62	149.49	149.79	150.17	150.40	150.49	150.65	150.19	150.17	150.02
30	148.40		148.67	149.54	.....	150.20	150.37	150.50	150.63	150.18	150.23	150.06
31	148.30		148.73		149.87		150.36	.....		150.11		150.02

e Estimated.

17.33.13.434. Potash Co. of America. Drilled industrial water-table well in Ogallala formation, diameter 16 inches, depth 240 feet. Highest water level 144.18 below lsd, Nov. 17, 1948; lowest 171.23 below lsd, Nov. 18, 1952. Records available: 1948-54. Jan. 11, 188.60, pumping; Mar. 2, 187.53, pumping; May 5, 164.58; July 13, 166.82; Sept. 15, 165.47; Nov. 10, 160.52.

17.33.26.422. Phillips Petroleum Co. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 200 feet. Highest water level 160.56 below lsd, Jan. 21, 1951; lowest 161.70 below lsd, Nov. 10, 1954. Records available: 1950-54. Jan. 11, 161.30; Mar. 2, 161.49; May 5, 161.32; July 13, 161.40; Sept. 15, 161.54; Nov. 10, 161.70.

17.34.21.143. Duval Sulphur & Potash Co. Drilled industrial water-table well in Ogallala formation, diameter 12 inches, depth 246 feet. Highest water level 112.71 below lsd, Jan. 21, 1951; lowest 123.74 below lsd, Mar. 2, 1954. Records available: 1951-54. Jan. 11, 123.63; Mar. 2, 123.74; May 5, 150.07, pumping; July 13, 155.77, pumping; Sept. 15, 123.28; Nov. 10, 121.57.

17.34.35.130. Phillips Petroleum Co. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 132 feet. Highest water level 89.81 below lsd, July 21, 1953; lowest 91.98 below lsd, Jan. 26, 1941. Records available: 1940-54. Jan. 11, 90.05; Mar. 2, 90.10; May 5, 89.99; July 13, 90.04; Sept. 14, 90.10; Nov. 9, 90.14.

17.35.35.213. Phillips Petroleum Co. Drilled unused water-table well in Ogallala formation, diameter 9 inches, depth 129 feet. Highest water level 38.60 below lsd, Jan. 16, 1948; lowest 41.45 below lsd, Jan. 26, 1941. Records available: 1940-54. Jan. 11, 39.63; Mar. 2, 39.65; May 11, 39.66; July 13, 39.68; Sept. 15, 39.73; Nov. 9, 39.77.

17.36.3.333. State of New Mexico. Drilled unused water-table well in Ogallala formation, diameter 2 inches, depth 85 feet. Highest water level 42.00 below lsd, Mar. 24, May 15, 1944; lowest 45.01 below lsd, June 18, 1939. Records available: 1939-54. Jan. 11, 43.09; Mar. 1, 43.05; May 11, 43.07; July 14, 42.96; Sept. 15, 42.93; Nov. 9, 42.83.

17.36.27.131. Wallace Mitchell. Drilled irrigation water-table well in Ogallala formation, diameter 12 inches, depth 100 feet. Highest water level 33.00 below lsd, Sept. 23, 1949; lowest 36.52 below lsd, May 17, 1950. Records available: 1947-54. Jan. 11, 34.61; Mar. 1, 34.45; May 11, 34.43; July 14, 34.45; Sept. 15, 34.48; Nov. 9, 34.51.

17.38.7.111a. Jim Cunningham. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 135 feet. Highest water level 35.59 below lsd, Mar. 21, 1952; lowest 49.21 below lsd, Sept. 8, 1953. Records available: 1951-54. Jan. 7, 43.64; Mar. 3, 42.90; May 7, 47.05; Nov. 9, 46.13.

17.38.34.113. W. E. Busby. Drilled irrigation water-table well in Ogallala formation, diameter 12 inches, depth 120 feet. Highest water level 24.78 below lsd, Jan. 15, 1944; lowest 31.66 below lsd, Sept. 3, 1953. Records available: 1943-54. Jan. 7, 29.51; Mar. 3, 29.66; May 7, 29.55; July 13, 29.59; Sept. 14, 29.08; Nov. 9, 29.27.

18.35.17.144. International Mineral & Chemical Corp. Drilled industrial water-table well in Ogallala formation, diameter 13 inches, depth 190 feet. Highest water level 69.41 below lsd, Sept. 14, 1954; lowest 69.54 below lsd, Mar. 2, May 5, 1954. Records available: 1953-54. Jan. 11, 69.50; Mar. 2, 69.54; May 5, 69.54; July 13, 69.45; Sept. 14, 69.41; Nov. 9, 69.50.

18.35.20.144. International Mineral & Chemical Corp. Drilled industrial water-table well in Ogallala formation, diameter 13 inches, depth 175 feet. Highest water level 75.76 below lsd, Nov. 20, 1953; lowest 75.87 below lsd, May 5, 1954. Records available: 1953-54. Jan. 11, 75.77; Mar. 2, 75.85; May 5, 75.87; July 13, 75.77; Sept. 14, 75.82; Nov. 9, 75.85.

18.35.20.214. International Mineral & Chemical Corp. Drilled industrial water-table well in Ogallala formation, diameter 12 inches, depth 170 feet. Highest water level 72.19 below lsd, Dec. 9, 1953; lowest 72.26 below lsd, Mar. 2, May 5, 1954. Records available: 1953-54. Jan. 11, 72.25; Mar. 2, 72.26; May 5, 72.26; July 13, 72.21; Sept. 14, 72.22; Nov. 9, 72.25.

18.36.27.111. State of New Mexico. Drilled unused water-table well in Ogallala formation, diameter 6 inches, depth 54 feet. Highest water level 38.09 below lsd, Oct. 23, 1942; lowest 41.75 below lsd, Mar. 15, 1941. Records available: 1939-54. Jan. 11, 40.99; Mar. 1, 40.98; May 5, 41.03; July 13, 41.08; Sept. 14, 41.12; Nov. 9, 41.15.

18.38.15.241. Glenn Staley. Drilled unused water-table well in Ogallala formation, diameter 6 inches, depth 107 feet. Highest water level 26.65 below lsd, Nov. 4-7, 1942; lowest 42.90 below lsd, July 13, 1954. Records available: 1940-54. Jan. 8, 38.63; Mar. 3, 36.76; May 7, 44.14, nearby well being pumped; July 13, 42.90; Sept. 14, 40.54; Nov. 9, 37.00.

18.38.27.113. Hobbs. Drilled well, depth 212 feet. Highest water level 42.94 below lsd, Mar. 1, 1954; lowest 60.83 below lsd, July 15, 1954. Records available: 1954. Mar. 1, 42.94; July 15, 60.83; Sept. 20, 46.30; Nov. 9, 44.36.

18.38.30.223. Mrs. Sadie Davis. Drilled unused water-table well in Ogallala formation, diameter 6 inches, depth 50 feet. Highest water level 23.01 below lsd, Nov. 17, 1947; lowest 29.82 below lsd, Nov. 1932. Records available: 1931-54. Jan. 13, 25.01; Mar. 1, 25.39; May 7, 25.62; July 13, 25.40; Sept. 14, 25.62; Nov. 9, 25.99.

19.37.32.241. Mrs. E. A. Anderson. Dug unused water-table well in Ogallala formation, diameter 8 feet, depth 28 feet. Highest water level 10.12 below lsd, Nov. 28, 1941; lowest 13.89 below lsd, June 17, 1934. Records available: 1929-54. Jan. 8, 12.26; Mar. 1, 12.23; May 7, 12.25; July 13, 12.13; Sept. 14, 12.14; Nov. 9, 12.09.

20.35.1.221. J. L. Wood. Dug unused water-table well in Ogallala formation, size 4 by 4 feet, depth 28 feet. Highest water level 19.38 below lsd, July 28, 1943; lowest 25.68 below lsd, Sept. 18, 1936. Records available: 1929-54. Jan. 11, 24.62; Mar. 1, 24.67; May 5, 24.69; July 13, 24.73; Sept. 14, 24.84; Nov. 9, 24.88.

20.37.9.110. W. H. Laughlin. Dug and drilled water-table well in Ogallala formation, size 4 by 6 feet, depth 53 feet. Highest water level 26.89 below lsd, Mar. 30, 1943; lowest 47.54 below lsd, Aug. 12, 1935. Records available: 1929-54. Jan. 8, 33.38; Mar. 1, 33.03; May 7, 32.80; July 13, 32.79; Sept. 14, 33.07; Nov. 9, 32.86.

Luna County

Mimbres Valley.--The Mimbres Valley, a broad desert plain sloping southward, includes the major part of Luna County in southwestern New Mexico. The principal surface drainage of the region is the Mimbres River, the perennial flow of which usually sinks into the ground northwest of Deming, but which may, in times of exceptional freshets, extend south and east of Deming and then south along the eastern flank of the Florida Mountains as far as the Mexican border. The ground water pumped in the Mimbres Valley is derived from precipitation on the drainage area of the Mimbres River and its tributaries and from storage accumulated by this drainage system. Many wells that have been developed for irrigation, domestic, and industrial supplies withdraw water from the permeable beds of valley fill. The Mimbres Valley ground-water basin presently includes 5 areas totaling 908 square miles. Within the area of the basin as originally declared by order of the State Engineer of New Mexico on July 29, 1931, are the main (or Deming) area around Deming and southward, the Lewis Flats area about 12 miles east of Deming, and the Columbus area just north and east of Columbus. In April 1942, the basin was enlarged to include the Eastern Extension east of the Florida Mountains and the Red Mountain area about 10 miles west of Deming, just west of Red Mountain. The Franklin area in T. 25 S., R 6 W., is included in the Eastern Extension. The basin was closed to further appropriation of water on April 20, 1945. The Red Mountain area, Columbus area, and Eastern Extension were reopened on April 26, 1950; the Columbus area was closed again on January 9, 1953. Investigation of the hydrology of the region was continued in 1954 to evaluate the continuing effects of pumping on water levels. Water levels were measured in 186 wells in January 1954, and recording gages were continued on the 2 wells maintained in 1953. Measurements were made in 58 wells at bimonthly intervals, totaling 439 measurements during 1954. Not all the January measurements used in preparing the water-level-change map (fig. 60) are included in this report.

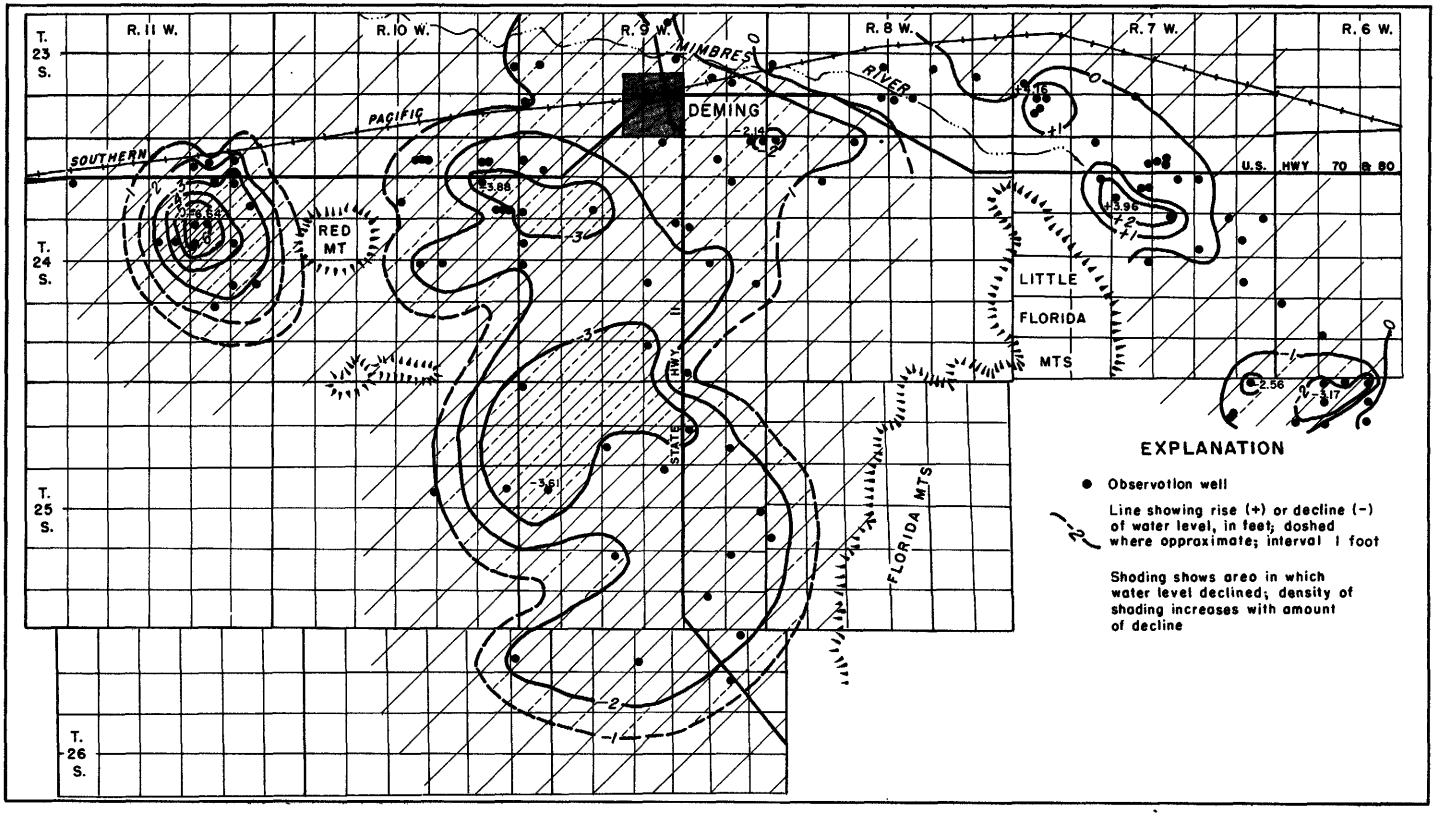


Figure 60. --Change in ground-water level from January 1954 to January 1955 in Mimbres Valley, Luna County, N. Mex.

Precipitation for 1954 was 6.62 inches at Deming, 2.77 inches below normal but 2.23 inches more than in 1953, 4.43 inches being received during the growing season. Precipitation at the Columbus CAA station was 13.35 inches, 4.63 inches above normal, 8.21 inches of which fell during the growing season. Annual precipitation over the area was below normal, except in the vicinity of Columbus, but normal or above-normal amounts were received during the growing season. The acreage irrigated in 1954 in the Mimbres Valley totaled about 32,000 acres, a decrease of 1,800 acres from 1953. The water pumped during 1954 totaled about 74,000 acre-feet, a decrease of 5,000 acre-feet from 1953. About 2,400 acres of land was irrigated in the area west of Red Mountain, requiring about 5,400 acre-feet of water; the Columbus area included about 2,900 acres irrigated with 6,800 acre-feet of water. In the Lewis Flats area, about 3,000 acres was irrigated with about 6,900 acre-feet of water, and the main area of about 22,000 acres with about 51,000 acre-feet of water. Only about 1,700 acres of land in the Franklin area was irrigated in 1954 with about 3,900 acre-feet of water, as compared with about 4,000 acres in the same general area in 1953.

Except in the Lewis Flats area, declines in water level in the Mimbres Valley continued in 1954 but were not as great as those in 1953. Regionally, water levels declined more than 4 feet under an area of about 3 square miles, more than 3 feet under about 25 square miles, more than 2 feet under about 88 square miles, and more than 1 foot under about 155 square miles. Declines from 1953 levels were noted in all areas but the Lewis Flats area, which showed a rise of 2 feet under about 1 square mile and a rise of 1 foot under about 8 square miles. This rise may be due to the fact that the bulk of the annual precipitation fell during the growing season, thereby reducing the amount pumped from the area and allowing more time for recovery of water levels before the January measurements. The Red Mountain area in 1954, as in 1953, showed the greatest declines in the region. A small area centered near well 24.11.14.111 had a water-level decline greater than 6 feet. A decline of more than 5 feet was noted under about 1 square mile and a decline of more than 4 feet under about 3 square miles. In the Columbus area, water levels declined more than 10 feet during 1954 in 6 wells centered near sec. 20, T. 28 S., R. 7 W. A rise of more than 5 feet was noted in 2 wells in sec. 24, T. 28 S., R. 7 W. However, most of the wells in the Columbus area showed declines of about 1.5 feet during 1954. In the 5-year period from January 1950 to January 1955, water levels have declined more than 5 feet throughout the main area and the Red Mountain area, maximum declines being more than 15 feet. However, in the Lewis Flats and Eastern Extension areas, the 5-year declines are less than 5 feet.

Mimbres Valley

21.10.6.112. Fletcher Tigner. Dug unused water-table well in alluvium of Quaternary age, diameter 12 feet, depth 23 feet. Highest water level 6.57 below lsd, Feb. 25, 1933; lowest 10.97 below lsd, July 14, 1953. Records available: 1928-54. Jan. 6, 9.89; Mar. 16, 10.07; May 18, 10.19; July 14, 10.58; Sept. 9, 10.69; Nov. 12, 10.67.

21.11.35.310. State of New Mexico. Drilled unused water-table well in valley fill, diameter 28 inches, depth 179 feet. Highest water level 13.50 below lsd, Mar. 15, 1949; lowest 38.74 below lsd, July 14, 1954. Records available: 1929-54. Jan. 6, 38.02; Mar. 16, 38.30; May 18, 38.57; July 14, 38.74; Sept. 9, 35.15; Nov. 12, 37.23.

22.10.18.121. State of New Mexico. Drilled unused water-table well in valley fill, diameter 30 inches, depth 223 feet. Highest water level 68.00 below lsd, Sept. 30, 1929; lowest 79.89 below lsd, July 14, 1954. Records available: 1928-54. Jan. 7, 79.43; Mar. 16, 79.64; May 18, 79.79; July 14, 79.89; Sept. 9, 79.81; Nov. 12, 79.82.

22.11.2.210. State of New Mexico. Drilled unused water-table well in valley fill, diameter 28 inches, depth 200 feet. Highest water level 20.38 below lsd, Nov. 11, 1941; lowest 38.25 below lsd, May 18, 1954. Records available: 1929-54. Jan. 6, 37.88; Mar. 16, 38.10; May 18, 38.25; July 14, 38.22; Sept. 9, 36.69; Nov. 12, 37.60.

22.11.13.122. State of New Mexico. Drilled unused water-table well in valley fill, diameter 28 inches, depth 190 feet. Highest water level 58.00 below lsd, July 31, 1928; lowest 71.50 below lsd, July 14, 1954. Records available: 1928-54. Jan. 7, 71.02; Mar. 16, 71.24; May 18 71.44; July 14, 71.50; Sept. 9, 71.18; Nov. 12, 71.02.

22.11.13.221. State of New Mexico. Drilled unused water-table well in valley fill, diameter 28 inches, depth 225 feet. Highest water level 65.14 below lsd, July 31, 1928; lowest 78.18 below lsd, July 14, 1954. Records available: 1928-54. Jan. 7, 77.71; Mar. 16, 77.94; May 18, 78.07; July 14, 78.18; Sept. 9, 77.93; Nov. 12, 77.82.

23.7.30. Lot 16. H. T. Foster. Dug and drilled unused water-table well in valley fill, diameter 36 inches, depth 157 feet. Highest water level 22.45 below lsd, May 22, 1933; lowest 36.98 below lsd, July 16, 1954. Records available: 1931-54. Jan. 22, 33.98; Mar. 18, 34.12; May 24, 35.53; July 16, 36.98; Sept. 10, 35.79; Nov. 13, 34.34.

23.7.31.133. William Haas. Drilled unused water-table well in valley fill, diameter 14 inches, reported depth 450 feet. Highest water level 37.99 below lsd, Jan. 8, 1951; lowest 52.75 below lsd, Sept. 20, 1948. Records available: 1947-54. Jan. 22, 45.51; Mar. 18, 46.39; May 21, 46.44; July 16, 47.13; Sept. 10, 42.37; Nov. 13, 41.73.

23.8.34.211. E. B. Law. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 168 feet. Highest water level 27.22 below lsd, Sept. 2, 1929; lowest 66.67 below lsd, July 16, 1954. Records available: 1928-54. Jan. 22, 51.26; Mar. 18, 52.80; May 24, 56.75; July 16, 66.67; Sept. 10, 85.63, pumping; Nov. 13, 52.22.

23.9.22.213. J. F. Hendricks. Formerly Roy Perkins. Dug and drilled unused water-table well in valley fill, diameter 36 inches, depth 150 feet. Highest water level 58.12 below lsd, Sept. 9, 1930; lowest 77.35 below lsd, Sept. 9, 1954. Records available: 1928-54. Jan. 7, 67.80; Mar. 16, 67.78; May 18, 72.45; July 14, 76.76; Sept. 9, 77.35; Nov. 12, 70.01.

23.9.25.311. Albert Ernst. Drilled irrigation water-table well in valley fill, diameter 36 inches, depth 150 feet. Highest water level 50.34 below lsd, June 16, 1928; lowest 75.32 below lsd, July 16, 1954. Records available: 1927-54. Jan. 22, 67.60; Mar. 18, 68.36; May 24, 72.02; July 16, 75.32; Sept. 10, 72.84; Nov. 13, 70.41.

24.7.4.424. G. D. Hatfield. Drilled stock and domestic water-table well in valley fill, diameter 10 inches, depth 107 feet. Highest water level 64.58 below lsd, Apr. 16, 1929; lowest 98.69 below lsd, Sept. 6, 1952. Records available: 1928-54. Jan. 23, 90.75; Mar. 18, 89.85; May 21, 94.13; July 15, 95.53, pumping; Sept. 10, 97.50; Nov. 13, 96.51, pumping.

24.7.5.211. R. M. Williamson. Dug and drilled stock and domestic water-table well in valley fill, diameter 12 inches, depth 123 feet. Highest water level 64.15 below lsd, Oct. 28, 1928; lowest 96.89 below lsd, July 16, 1954. Records available: 1928-54. Jan. 22, 93.68; Mar. 18, 93.35; May 21, 93.75; July 16, 96.89; Nov. 13, 94.73.

24.7.8.212. J. W. McDougall. Dug and drilled irrigation water-table well in valley fill, diameter 8 feet. Highest water level 78.47 below lsd, Jan. 5, 1940; lowest 90.53 below lsd, Jan. 9, 1951. Records available: 1940-54. Jan. 22, 87.54; Mar. 18, 87.19; May 21, 87.52; July 16, 88.21; Sept. 10, 88.63; Nov. 13, 86.48.

24.7.9.111. Smyer Bros. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 125 feet. Highest water level 76.91 below lsd, May 9, 1939; lowest 90.51 below lsd, Sept. 22, 1950. Records available: 1939-54. Jan. 7, 86.29; Mar. 18, 86.18; May 21, 97.51, nearby well being pumped; July 16, 97.81, nearby well being pumped; Sept. 10, 97.52, nearby well being pumped; Nov. 13, 88.74, nearby well pumped recently.

24.7.9.111a. Smyer Bros. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 285 feet. Highest water level 36.41 below lsd, Mar. 27, 1946; lowest 94.66 below lsd, July 21, 1951. Records available: 1946-54. Jan. 7, 86.20; Mar. 18, 86.13; May 21, 98.22, pumping; Nov. 13, 88.52, pumped recently.

24.7.9.241. G. D. Hatfield. Drilled unused water-table well in valley fill, diameter 40 inches, depth 132 feet. Highest water level 84.60 below lsd, Jan. 5, 1940; lowest 94.94 below lsd, Nov. 12, 1953. Records available: 1940-54. Jan. 7, 94.00; Mar. 18, 92.87; May 21, 92.23; July 16, 91.62, nearby well being pumped; Sept. 10, 93.55; Nov. 13, 94.82.

24.7.9.241a. G. D. Hatfield. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 375 feet. Highest water level 21.48 below lsd, Mar. 21, 1945; lowest 119.59 below lsd, Sept. 17, 1953. Records available: 1944-54. Mar. 18, 71.14; May 21, 78.98; Sept. 10, 104.85; Nov. 13, 74.85.

24.7.14.221. J. H. Winslow. Drilled unused water-table well in valley fill, diameter 28 inches, depth 118 feet. Highest water level 71.15 below lsd, Apr. 19-20, 1939; lowest 90.21 below lsd, Nov. 11, 1953. Records available: 1939-54. Nov. 11, 1953, 90.21; Mar. 18, 1954, 88.64; May 21, 88.94; July 15, 89.63; Sept. 10, 89.83; Nov. 13, 89.33.

24.7.16.211b. Geo. Snyder. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 150 feet. Highest water level 79.83 below lsd, May 6, 1941; lowest 96.14 below lsd, July 21, 1951. Records available: 1941-54. Jan. 7, 93.83. Bimonthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

24.7.24.312. Bill Birchfield. Drilled unused water-table well in valley fill, diameter 30 inches, depth 89 feet. Highest water level 65.83 below lsd, Mar. 14, 1940; lowest 78.89 below lsd, Nov. 13, 1954. Records available: 1940-54. Jan. 7, 78.19; Mar. 18, 78.39; May 21, 78.49; July 16, 78.60; Sept. 13, 78.74; Nov. 13, 78.89.

24. 8. 4. 111. Foy Riley. Drilled unused water-table well in valley fill, diameter 24 inches, reported depth 100 feet. Highest water level 35. 06 below lsd, May 6, 1941; lowest 54. 24 below lsd, Sept. 24-26, 1954. Records available: 1941-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	51. 99	51. 67	51. 45	51. 54	52. 32	52. 67	53. 20	53. 65	54. 09	54. 21	53. 66	53. 59
2	51. 98	51. 67	51. 47	51. 55	52. 34	52. 68	53. 22	53. 68	54. 10	54. 19	53. 86	53. 58
3	51. 97	51. 65	51. 51	51. 58	52. 34	52. 71	53. 24	53. 69	54. 12	54. 19	53. 85	53. 56
4	51. 97	51. 64	51. 50	51. 60	52. 34	52. 74	53. 25	53. 72	54. 15	54. 19	53. 85	53. 54
5	51. 96	51. 63	51. 51	51. 63	52. 34	52. 77	53. 25	53. 74	54. 16	54. 18	53. 84	53. 55
6	51. 94	51. 63	51. 50	51. 67	52. 35	52. 79	53. 26	53. 77	54. 16	54. 18	53. 83	53. 54
7	51. 92	51. 63	51. 49	51. 68	52. 36	52. 83	53. 28	53. 78	54. 16	54. 17	53. 82	53. 53
8	51. 90	51. 62	51. 48	51. 72	52. 37	52. 85	53. 29	53. 81	54. 16	54. 16	53. 82	53. 53
9	51. 90	51. 59	51. 46	51. 76	52. 38	52. 87	53. 30	53. 83	54. 17	54. 15	53. 81	53. 53
10	51. 90	51. 58	51. 44	51. 80	52. 38	52. 89	53. 31	53. 85	54. 18	54. 13	53. 80	53. 51
11	51. 87	51. 58	51. 42	51. 87	52. 39	52. 92	53. 33	53. 86	54. 16	54. 12	53. 79	53. 51
12	51. 86	51. 56	51. 43	51. 91	52. 41	52. 94	53. 33	53. 86	54. 17	54. 09	53. 77	53. 50
13	51. 85	51. 54	51. 45	51. 93	52. 42	52. 96	53. 34	53. 88	54. 18	54. 08	53. 76	53. 47
14	51. 84	51. 52	51. 45	51. 95	52. 45	52. 98	53. 35	53. 90	54. 21	54. 07	53. 75	53. 47
15	51. 84	51. 53	51. 45	51. 98	52. 47	53. 00	53. 38	53. 92	54. 22	54. 07	53. 73	53. 44
16	51. 82	51. 53	51. 44	52. 03	52. 49	53. 03	53. 41	53. 93	54. 23	54. 05	53. 72	53. 43
17	51. 81	51. 51	51. 42	52. 08	52. 51	53. 03	53. 43	53. 94	54. 23	54. 03	53. 75	53. 45
18	51. 80	51. 47	51. 43	52. 12	52. 54	53. 03	53. 44	53. 96	54. 23	54. 01	53. 74	53. 43
19	51. 78	51. 49	51. 44	52. 16	52. 57	53. 03	53. 45	53. 99	54. 23	53. 99	53. 73	53. 42
20	51. 78	51. 49	51. 44	52. 19	52. 57	53. 03	53. 46	53. 99	54. 23	53. 98	53. 71	53. 39
21	51. 79	51. 49	51. 45	52. 22	52. 58	53. 04	53. 48	54. 02	54. 23	53. 96	53. 69	53. 37
22	51. 78	51. 47	51. 45	52. 24	52. 58	53. 04	53. 49	54. 02	54. 23	53. 95	53. 69	53. 35
23	51. 77	51. 48	51. 44	52. 28	52. 58	53. 06	53. 51	54. 02	54. 23	53. 93	53. 67	53. 34
24	51. 75	51. 46	51. 44	52. 29	52. 58	53. 07	53. 53	54. 02	54. 24	53. 92	53. 66	53. 32
25	51. 74	51. 45	51. 47	52. 32	52. 58	53. 08	53. 56	54. 02	54. 24	53. 91	53. 64	53. 30
26	51. 74	51. 44	51. 48	52. 35	52. 59	53. 09	53. 57	54. 02	54. 24	53. 91	53. 63	53. 28
27	51. 73	51. 44	51. 49	52. 37	52. 61	53. 11	53. 57	54. 02	54. 23	53. 90	53. 61	53. 27
28	51. 71	51. 47	51. 47	52. 37	52. 62	53. 12	53. 58	54. 03	54. 23	53. 89	53. 61	53. 27
29	51. 70		51. 47	52. 32	52. 64	53. 15	53. 60	54. 04	54. 22	53. 88	53. 59	53. 25
30	51. 69		51. 47	52. 32	52. 65	53. 18	53. 61	54. 06	54. 21	53. 87	53. 59	53. 24
31	51. 69		51. 51		52. 66		53. 63	54. 08		53. 86		53. 23

24. 9. 2. 421. Roscendo Trujillo. Dug domestic water-table well in valley fill, depth 74 feet. Highest water level 48. 02 below lsd, Dec. 19, 1931; lowest 72. 37 below lsd, Mar. 23, 1954. Records available: 1931-54. Jan. 15, 70. 55; Mar. 23, 72. 37.

24. 9. 6. 431. State of New Mexico. Drilled irrigation water-table well in valley fill, diameter 12 to 6 inches, depth 1, 000 feet, cased to 650, perforations 300(?)-440. Highest water level 57. 28 below lsd, Feb. 15, 1942; lowest 97. 40 below lsd, Nov. 13, 1954. Records available: 1941-54. Jan. 11, 91. 64; May 18, 150. 48, pumping; July 14, 162. 20, nearby well being pumped; Sept. 10, 145. 96, pumped recently; Nov. 13, 97. 40.

24. 10. 10. 311. Jim Hurt. Drilled stock and domestic water-table well in valley fill, diameter 8 inches, depth 131 feet. Highest water level 74. 82 below lsd, Oct. 23, 1928; lowest 99. 30 below lsd, May 18, 1954. Records available: 1927-54. Jan. 11, 96. 79; Mar. 18, 97. 15, pumping; May 18, 99. 30; July 14, 116. 58, nearby well being pumped; Sept. 10, 114. 64, nearby well being pumped; Nov. 12, 98. 44.

24. 10. 12. 431. Steve Hrna. Dug and drilled unused water-table well in valley fill, diameter 36 to 12 inches, reported depth 132 feet. Highest water level 77. 61 below lsd, May 6-13, 1940; lowest 106. 59 below lsd, Aug. 20, 1954. Records available: 1939-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	95. 97	95. 40	95. 59	98. 28	100. 02	102. 98e	103. 40	105. 94	105. 75	.....	100. 08	98. 90
2	95. 97	95. 38	95. 69	98. 95	100. 05	103. 23	103. 99	105. 90	105. 75	.....	99. 98	98. 93
3	95. 97	.....	96. 05	99. 35	100. 20	103. 17	103. 55	105. 84	105. 75	.....	99. 93	98. 89
4	95. 93	95. 37	96. 27	99. 95	100. 68	102. 95	103. 55	105. 84	105. 88	.....	99. 92	98. 89
5	95. 85	95. 49	96. 53	100. 36	101. 03	102. 93	103. 56	105. 88	105. 97	.....	99. 81	98. 98
6	95. 78	95. 47	97. 04	100. 49	101. 33	102. 94	103. 70	105. 93	105. 97	.....	99. 72	98. 93
7	95. 75	95. 48	97. 55	100. 73	101. 41	102. 90	104. 22	106. 00	105. 97	.....	99. 69	99. 31
8	95. 73	95. 42	97. 66	101. 00	101. 48	102. 90	104. 28	105. 84	105. 97	.....	99. 66	99. 00
9	95. 69	95. 33	97. 72	101. 08	101. 78	103. 02	104. 55	105. 63	.....	.....	99. 66	98. 76
10	95. 68	95. 33	97. 81	101. 18	101. 81	103. 44	104. 96	105. 63	105. 67	.....	99. 66	98. 59

24.10.12.431--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	.....	95.33	97.92	101.27	101.42	103.72	105.08	105.84	105.42	.....	99.59	98.58
12	.....	95.35	98.09	101.18	101.28	104.10	105.15	105.92	105.26	.....	99.50	98.59
13	.....	95.36	98.18	101.13	101.22	104.09	105.35	105.99	105.21	.....	99.44	98.68
14	.....	95.31	98.36	100.94	101.28	104.01	105.43	106.08	105.29	.....	99.44	98.84
15	.....	95.31	98.79	100.94	101.47	103.99	105.61	106.27	105.17	100.87	99.39	98.93
16	.....	95.29	99.15	100.83	101.66	103.99	105.68	106.28	105.10	100.97	99.36	98.66
17	.....	95.32	99.15	100.17	101.76	103.97	105.75	106.35	105.23	100.99	99.41	98.49
18	.....	95.31	99.14	99.48	101.73	103.84	105.83	106.45	105.09	100.90	99.31	98.38
19	.....	95.31	99.14	99.34	101.75	103.81	105.84	106.57	104.55	100.90	99.22	98.31
20	e95.40	95.41	99.14	99.50	101.85	103.49	105.72	106.59	104.27	100.92	99.16	98.20
21	.....	95.41	.....	99.41	101.80	103.44	105.68	106.57	104.07	100.95	99.14	98.15
22	.....	95.45	98.90	99.46	101.75	103.63	105.62	106.48	103.84	101.07	99.13	98.15
23	.....	95.45	98.90	99.93	101.77	103.55	105.64	106.48	103.63	101.04	99.03	98.22
24	.....	95.57	98.45	100.13	101.87	103.50	105.64	106.49	103.30	100.75	99.01	.....
25	.....	95.55	98.47	99.38	102.08	103.55	105.64	106.28	103.12	100.60	99.00	.....
26	.....	95.54	98.39	99.00	102.68	103.51	105.79	106.13	103.08	100.53	98.99	.....
27	95.42	95.58	98.27	98.94	.....	103.33	105.92	106.06	102.70	100.44	98.93	.....
28	95.37	95.60	98.27	99.24	102.85	103.31	105.98	105.99	102.44	100.39	98.93	97.94
29	95.36		98.27	99.25	102.96	103.69	105.98	105.91	102.25	100.34	98.84	.....
30	95.36		98.27	99.84	102.84	104.34	106.10	105.74	.....	100.30	98.84	97.98
31	95.37		98.41		102.80		106.13	105.74		100.14		98.00

e Estimated.

24.10.22.211. E. F. Hurt. Dug and drilled irrigation water-table well in valley fill, diameter 36 inches, reported depth 206 feet. Highest water level 69.27 below lsd, May 21, 1942; lowest 88.93 below lsd, Nov. 12, 1954. Records available: 1941-54. Jan. 11, 85.91; Mar. 18, 86.59; May 18, 114.58, pumping; July 14, 113.94, pumping; Nov. 12, 88.93.

24.11.8.111. Formerly 24.11.8.110. S. C. Phillips. Drilled stock water-table well in valley fill, diameter 5 inches, depth 160 feet. Highest water level 146.68 below lsd, Oct. 31, 1939; lowest 150.31 below lsd, Jan. 19, 1953. Records available: 1939-54. Jan. 8, 150.19; Mar. 16, 152.21, pumping; May 18, 150.29; July 14, 151.25, pumping; Sept. 9, 150.82, pumping; Nov. 12, 151.36, pumping.

24.11.12.111. C. L. Taylor. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 200 feet. Land-surface datum is 4,418 feet above msl. Highest water level 101.55 below lsd, Jan. 11, 1951; lowest 120.54 below lsd, Nov. 12, 1954. Records available: 1951-54. Jan. 8, 114.72; Mar. 17, 113.22; May 18, 123.09, pumping; July 14, 128.04, pumping; Sept. 10, 128.10, pumping; Nov. 12, 120.54.

24.11.12.324. Lee Palayo. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 200 feet. Land-surface datum is 4,408 feet above msl. Highest water level 98.53 below lsd, Jan. 11, 1951; lowest 119.99 below lsd, Nov. 12, 1954. Records available: 1951-54. Jan. 8, 113.18; Mar. 17, 113.83; July 14, 148.78, pumping; Sept. 10, 147.76, pumping; Nov. 12, 119.99.

24.11.13.311. Phillips. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 250 feet, cased to 250. Highest water level 95.48 below lsd, Jan. 23, 1952; lowest 112.98 below lsd, Nov. 12, 1954. Records available: 1952-54. Jan. 8, 106.15; Mar. 17, 105.53; May 18, 134.00, pumping; July 14, 138.40, pumping; Sept. 10, 140.14, pumping; Nov. 12, 112.98.

24.11.14.122. Charles Waldrop. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 210 feet. Land-surface datum is 4,405 feet above msl. Highest water level 107.66 below lsd, Jan. 23, 1952; lowest 128.65 below lsd, Nov. 12, 1954. Records available: 1951-54. Jan. 7, 118.94; Mar. 17, 118.35, pumped recently; May 18, 149.93, pumping; July 14, 149.92, pumping; Sept. 9, 149.87, pumping; Nov. 12, 128.65.

24.11.14.311. Charles Waldrop. Drilled irrigation and domestic water-table well in valley fill, diameter 16 inches, depth 250 feet. Highest water level 111.93 below lsd, Jan. 7, 1954; lowest 125.06 below lsd, Nov. 12, 1954. Records available: 1954. Jan. 7, 111.93; Mar. 17, 117.91, pumping; May 18, 203.15, pumping; July 14, 194.95, pumping; Sept. 9, 210.47, pumping; Nov. 12, 125.06.

24.11.15.312. Oliver Ruebush. Drilled irrigation and domestic water-table well in valley fill, diameter 16 inches, depth 250 feet. Located on west side of earthen tank. Highest water level 110.26 below lsd, Mar. 16, 1954; lowest 113.84 below lsd, Nov. 12, 1954. Records available: 1954. Jan. 8, 110.63; Mar. 16, 110.26; May 18, 132.93, pumping; July 14, 133.43, pumping; Sept. 9, 136.10, pumping; Nov. 12, 113.84.

24.11.24.311. Madrid. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 200 feet. Highest water level 87.71 below lsd, Jan. 23, 1952; lowest 100.41 below lsd, Nov. 12, 1954. Records available: 1951-54. Jan. 8, 95.85; Mar. 17, 95.27; May 18, 107.81, pumping; July 14, 114.87, pumping; Sept. 10, 117.65, pumping; Nov. 12, 100.41.

25.6.2.111. C. W. Johnson, Jr. Drilled irrigation artesian well in valley fill, diameter 16 inches, depth 235 feet, cased to 235, perforations 180-235. Highest water level 0.45 below lsd, Mar. 14, 1953; lowest 36.86 below lsd, Nov. 12, 1953. Records available: 1952-54. Jan. 5, 31.57; Mar. 22, 28.38; May 21, 31.03; July 17, 32.13; Sept. 13, 29.54; Nov.13, 27.17.

25.6.3.111. E. C. Ross. Drilled irrigation artesian well in valley fill, diameter 16 inches, depth 232 feet. Highest water level 2.95 below lsd, Mar. 14, 1953; lowest 53.24 below lsd, July 18, 1953. Records available: 1952-54. Jan. 5, 18.38; Mar. 22, 15.94; May 21, 19.98; July 17, 23.40; Sept. 13, 20.20; Nov. 13, 16.88.

25.6.4.111. W. O. Douglas. Drilled irrigation water-table well in valley fill, diameter 18 inches, depth 231 feet, cased to 230, perforations 100-225. Highest water level 68.22 below lsd, Mar. 14, 1953; lowest 79.51 below lsd, Sept. 13, 1954. Records available: 1952-54. Jan. 5, 73.75; Mar. 22, 73.28; May 21, 76.94; July 17, 79.28; Sept. 13, 79.51; Nov. 13, 76.58.

25.6.5.111. Claud McDonald. Drilled irrigation water-table well in valley fill, diameter 18 inches, depth 231 feet, cased to 231, perforations 100-225. Highest water level 66.6 below lsd, Mar. 19, 1952; lowest 84.94 below lsd, Nov. 13, 1954. Records available: 1952-54. Jan. 5, 80.18; Mar. 22, 79.24; May 21, 123.42, pumping; July 15, 142.75, pumping; Sept. 13, 126.21, pumping; Nov. 13, 84.94.

25.6.7.211. H. C. Telles. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 230 feet. Highest water level 65.34 below lsd, Mar. 14, 1953; lowest 97.85 below lsd, May 20, 1954. Records available: 1953-54. Jan. 5, 70.34; Mar. 22, 69.93; May 20, 97.85; July 17, 154.60, pumping; Nov. 13, 72.85.

25.6.8.111. R. L. Womack. Formerly Franklin. Drilled unused water-table well in valley fill, diameter 16 inches, reported depth 340 feet. Highest water level 64.08 below lsd, May 9, 1951; lowest 79.74 below lsd, July 17, 1953. Records available: 1950-54. Jan. 18, 70.71; Mar. 22, 70.07; May 24, 71.78; July 15, 73.89; July 23, 74.42; Sept. 13, 71.70; Nov. 13, 70.84.

25.6.16.111. L. C. Williams. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 230 feet, perforations 134-230. Highest water level 62.72 below lsd, Jan. 5, 1954; lowest 73.77 below lsd, May 11, 1953. Records available: 1953-54. Jan. 5, 62.72; Mar. 22, 63.34; May 21, 63.43; July 15, 63.50; Sept. 13, 63.63; Nov. 13, 63.65.

25.6.17.111. Von Glahn Farming Co. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 230 feet, perforations 134-230. Highest water level 64.67 below lsd, Jan. 13, 1953; lowest 68.81 below lsd, Nov. 12, 1953. Records available: 1953-54. Jan. 5, 67.98.

25.6.20.111. Von Glahn Farming Co. Drilled unused irrigation water-table well in valley fill, diameter 16 inches, depth 234 feet, perforations 114-230. Highest water level 68.80 below lsd, Mar. 14, 1953; lowest 86.77 below lsd, July 17, 1953. Records available: 1953-54. Jan. 5, 78.03; Mar. 22, 75.42; May 20, 74.27; July 15, 74.25; Sept. 13, 74.04; Nov. 13, 73.45.

25.6.30.121. Von Glahn Farming Co. Drilled unused irrigation well in valley fill, diameter 16 inches, depth 230 feet. Highest water level 76.42 below lsd, Nov. 13, 1954; lowest 79.67 below lsd, Sept. 19, 1953. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 17, 1953	79.38	Jan. 31, 1954	78.13	May 20, 1954	76.99	Sept. 13, 1954	76.55
Sept. 19	79.67	Mar. 22	77.45	July 15	76.77	Nov. 13	76.42
Nov. 11	79.41						

25.7.1.122. Claude Mizer. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 230 feet, perforations 130-230. Highest water level 69.99 below lsd, Jan. 14, 1953; lowest 75.80 below lsd, Nov. 12, 1953. Records available: 1953-54. Jan. 5, 74.75; Mar. 22, 73.56; May 21, 123.42, pumping; July 17, 83.71, pumped recently; Sept. 13, 92.29, pumped recently; Nov. 13, 80.06, pumped recently.

25.8.19.331. Tom Crawford. Drilled stock water-table well in valley fill, diameter 8 inches, depth 88 feet. Highest water level 59.01 below lsd, Jan. 12, 1942; lowest 81.60 below lsd, May 19, 1954. Records available: 1942-43, 1945-54. Jan. 18, 75.96; Mar. 23, 76.24; May 19, 81.60; July 19, 78.83; Sept. 14, 82.50, pumping; Nov. 16, 79.06.

25. 9. 11. 111. R. J. Bishop. Dug and drilled irrigation water-table well in valley fill, diameter 4 feet, depth 220 feet. Highest water level 59. 69 below lsd, Mar. 17, 1939; lowest 98. 83 below lsd, Sept. 14, 1954. Records available: 1939-54. Jan. 18, 89. 13; Mar. 23, 116. 71, pumping; May 19, 118. 09, pumping; July 19, 120. 01, pumping; Sept. 14, 98. 83; Nov. 16, 93. 62.

25. 9. 28. 121. Leonard Zumwalt. Dug and drilled irrigation water-table well in valley fill, diameter 42 to 22 inches, depth 101 feet. Highest water level 65. 82 below lsd, Mar. 13, 1942; lowest 97. 73 below lsd, Nov. 16, 1954. Records available: 1941-54. Jan. 18, 92. 67; Mar. 23, 91. 50; May 19, 119. 80, pumping; July 19, 120. 36, pumping; Sept. 14, 105. 76, pumped recently; Nov. 16, 97. 73.

26. 9. 11. 211. State of New Mexico. Dug and drilled unused water-table well in valley fill, diameter 12 inches, depth 80 feet. Highest water level 36. 92 below lsd, Apr. 15, 1939; lowest 49. 73 below lsd, Nov. 16, 1954. Records available: 1939-54. Jan. 18, 48. 23; Mar. 19, 48. 46; May 19, 48. 65; July 19, 48. 82; Sept. 14, 49. 03; Nov. 16, 49. 73.

27. 7. 31. 211. Claude Irwin. Drilled irrigation well in valley fill, diameter 16 inches, depth 595 feet, perforations 305-590. Highest water level 52. 83 below lsd, Jan. 19, 1954; lowest 68. 05 below lsd, Nov. 16, 1954. Records available: 1954. Jan. 19, 52. 83; Mar. 19, 65. 29, pumped recently; May 19, 189. 61, pumping; July 16, 189. 66, pumping; Nov. 16, 68. 05.

27. 8. 5. 320. Inman. Dug stock water-table well in valley fill, diameter 40 inches, reported depth 60 feet. Highest water level 25. 61 below lsd, Mar. 13, 1951; lowest 28. 55 below lsd, Mar. 26, 1952. Records available: 1951-54. Jan. 19,*27. 34; Mar. 19,*28. 36; Sept. 14,*35. 60; Nov. 16,*33. 98. *Pumping.

27. 8. 15. 131. Hilario Lopez. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 510 feet, cased to 430, perforations 280-430. Highest water level 32. 86 below lsd, Nov. 7, 1952; lowest 40. 68 below lsd, Sept. 18, 1953. Records available: 1952-54. Jan. 19, 34. 95; Mar. 19, 35. 47; May 19, 35. 65; Sept. 14, 36. 83; Nov. 16, 36. 43.

27. 8. 35. 122. Formerly 27. 8. 35. 120. Mrs. M. M. Gibson. Drilled irrigation water-table well in valley fill, diameter 12 to 8 inches, depth 550 feet, cased to 550, perforations 155-550. Highest water level 20. 84 below lsd, Mar. 16, 1953; lowest 37. 28 below lsd, Sept. 18, 1953. Records available: 1952-54. Jan. 20, 28. 06; Mar. 19, 28. 69; May 19, 30. 60; July 16, 36. 26; Sept. 14, 33. 74; Nov. 16, 28. 12.

27. 9. 1. 431. W. A. Prater. Drilled irrigation well in valley fill, diameter 16 inches, depth 62 feet. Highest water level 30. 61 below lsd, Jan. 19, 1954; lowest 41. 68 below lsd, Sept. 14, 1954. Records available: 1954. Jan. 19, 30. 61; Mar. 19, 30. 73; May 19, 31. 61; July 19, 38. 40, pumping; Sept. 14, 41. 68; Nov. 16, 31. 49.

27. 9. 12. 111. Waterloo School. Drilled unused water-table well in valley fill, diameter 6 inches, depth 29. 5 feet. Highest water level 26. 95 below lsd, Mar. 22, 1945; lowest 30. 59 below lsd, Sept. 8, 1952. Records available: 1944-54. Jan. 19, 29. 5, dry. Measurement discontinued.

28. 7. 9. 411. Paul J. Guame. Drilled irrigation water table well in valley fill, diameter 14 to 12 inches, depth 720 feet, perforations 385-615. Highest water level 52. 14 below lsd, Mar. 19, 1954; lowest 82. 49 below lsd, Nov. 16, 1954. Records available: 1954. Jan. 21, 57. 16; Mar. 19, 52. 14; May 19, 287. 78, pumping; Sept. 14, 301. 18, pumping; Nov. 16, 82. 49.

28. 7. 20. 311. Joe Bain. Drilled irrigation water-table well in valley fill, diameter 16 to 12 inches, depth 630 feet, perforations 308-608. Highest water level 49. 58 below lsd, Mar. 19, 1954; lowest 79. 27 below lsd, Nov. 16, 1954. Records available: 1954. Jan. 21, 54. 44; Mar. 19, 49. 58; May 19, 98. 21, pumping; July 19, 111. 35, pumping; Sept. 13, 122. 96, pumping; Nov. 16, 79. 27.

28. 7. 28. 124. Leon Telles. Drilled irrigation artesian well in valley fill, diameter 14 to 10 inches, depth 723 feet, cased to 723, perforations 95-100, 420-530, 537-723. Highest water level 10. 92 below lsd, July 24, 1952; lowest 69. 73 below lsd, Nov. 16, 1954. Records available: 1952-54. Jan. 21, 44. 21; Mar. 19, 39. 34; May 19, 198. 49, pumping; July 16, 208. 54, pumping; Sept. 13, 210. 58, pumping; Nov. 16, 69. 73.

28. 8. 26. 411. G. Espinoza. Drilled unused irrigation water-table well in valley fill, diameter 12 to 10 inches, depth 300 feet, cased to 300, perforations 70-90, 160-180, 200-300. Highest water level 54. 79 below lsd, Mar. 19, 1954; lowest 67. 53 below lsd, Sept. 14, 1954. Records available: 1954. Jan. 20, 57. 07; Mar. 19, 54. 79; May 19, 64. 22; Sept. 14, 67. 53; Nov. 16, 59. 84.

28.8.36.111. M. R. Hemley. Drilled irrigation artesian well in valley fill, diameter 16 inches, depth 270 feet, cased to 250, gravel packed and casing perforated. Highest water level 22.61 below lsd, Jan. 26, 1953; lowest 44.33 below lsd, July 16, 1954. Records available: 1952-54. Jan. 20, 29.16; Mar. 19, 28.35; May 19, 36.69; July 16, 44.33; Nov. 16, 32.67.

29.7.4.111. Frances S. Counett. Drilled unused water-table well in valley fill, diameter 8 inches, depth 185 feet. Highest water level 0.59 below lsd, Sept. 13, 1954; lowest 3.56 below lsd, May 15, 1952. Records available: 1940-54. Jan. 21, 2.08; Mar. 19, 2.29; May 19, 2.60; July 16, 2.72; Sept. 13, 0.59; Nov. 16, 0.72.

29.8.12.244. A. G. Anderson. Drilled unused water-table well in valley fill, diameter 12 inches, depth 180 feet. Highest water level 7.07 below lsd, Mar. 17, 1940; lowest 14.82 below lsd, July 16, 1954. Records available: 1940-54. Jan. 21, 10.03; Mar. 19, 9.73; May 19, 11.95; July 16, 14.82; Sept. 13, 14.01; Nov. 16, 11.60.

Otero County

Tularosa-Alamogordo area.--The Tularosa-Alamogordo area in north-central Otero County extends from the vicinity of Tularosa, in T. 14 S., Rs. 9 and 10 E., southward beyond Alamogordo into T. 17 S., R. 10 E. Ground water pumped in the area is used principally for irrigation. Irrigated farms are scattered throughout the area; however, the greatest concentration of irrigation wells is in the vicinity of Tularosa. Water for irrigation, municipal, domestic, and stock supplies is obtained from valley fill in the Tularosa Basin along the west base of the Sacramento Mountains. The valley-fill aquifer, as a whole, contains water under water-table conditions although artesian conditions occur locally. Recharge to the valley fill occurs principally when rains in the mountains east of the area cause floods that discharge from the canyons and flow over the steep, permeable alluvial fans at the base of the mountains. Some recharge is due to seepage from Rio Tularosa, a perennial stream arising from springs in the mountains. Natural discharge of ground water from the area is southwestward near the center of the Tularosa Basin.

Precipitation in the Tularosa-Alamogordo area was about 50 percent of normal in 1954. Although the amount of rainfall in 1953 had been slightly above normal, the 1954 deficiency continued a prevailing climatic trend. Precipitation amounted to 4.50 inches at Tularosa, 5.07 inches below normal, and 6.43 inches at Alamogordo, 3.73 inches below normal. In the Sacramento Mountains to the east, precipitation was greater but was below normal in 1954. At Mescalero it was 13.41 inches, 5.97 inches below normal, and at Mountain Park, 14.59 inches, 3.69 inches below normal. Precipitation is greatest in the summer and early fall; however, the amounts of rainfall in the Tularosa Basin are insufficient to support crops without irrigation. Although precipitation in the Tularosa-Alamogordo area does not substantially recharge the valley fill, occasional heavy thunderstorms cause temporary cessation of pumping and result in smaller declines of water level. Variations in precipitation in the mountainous area east of the Tularosa-Alamogordo area result in varying amounts of runoff available for recharge to the valley-fill aquifer.

Part of the area in the vicinity of Tularosa has been irrigated with surface water from the Rio Tularosa since about 1862. A small acreage was irrigated with ground water as early as 1911. However, active interest in the use of ground water for irrigation did not develop until after World War II. Data from the Department of Agriculture's Soil Conservation Service indicate that 25 irrigation wells had been drilled by 1950 and 60 irrigation wells by February 1952. A reconnaissance of the area in February and March 1955 indicated that 90 wells had been completed and that about 70 wells would be used in the 1955 irrigation season. About 15 of the irrigation wells are used to supplement surface-water supplies. Prior to large-scale development of ground-water irrigation in the Tularosa-Alamogordo area, as much as 2,500 acres was irrigated from the Rio Tularosa. According to the Soil Conservation Service, about 3,400 acres, including the surface-water district, was irrigated in 1951. In 1954 about 2,500 acres was irrigated from wells, and it is estimated that about 3,000 acres will be irrigated with ground water in 1955. Since their organization in 1862 and 1898, respectively, Tularosa and Alamogordo have obtained their water supplies from surface waters of the Rio Tularosa and of La Luz, Fresnal, and Alamo Canyons. The growth of the towns, together with the growth of Holloman Air Force Base southwest of Alamogordo, has necessitated exploration for additional municipal water. At the beginning of World War II, when the airbase was established, it obtained its water supply from the town of Alamogordo. Diminution of surface supplies, together with additional growth of the airbase in the period 1945 to 1947, resulted in the establishment of a well field for the Air Force about 5 miles south of Alamogordo, in the only part of the Tularosa-Alamogordo area where relatively large supplies of potable ground water are known to exist. The well field now supplies most of the water needed by the airbase. Recently the town of Alamogordo drilled 2 municipal wells about 1.5 miles southwest of the Air Force well field. In 1954 the village of Tularosa drilled a municipal well near the mouth of Rio Tularosa to supplement the surface-water supply.

In 1952, in order to observe and record the effect of ground-water pumping in the Tularosa-Alamogordo area, a number of observation wells were selected. In February 1955, water levels

in 33 observation wells were measured, 27 of which had been measured in February 1954. These measurements were used to prepare the map (fig. 61) showing the depth to ground water in February 1955 and the change in ground-water level from February 1954 to February 1955. Measurements at bimonthly intervals were made in 1954 in about 10 of the 27 wells. All measurements made in the 10 wells from the beginning of record are included in this report, which is the first published record of ground-water levels in the Tularosa-Alamogordo area.

The trend in water level since the beginning of record in the Tularosa-Alamogordo area has been a decline, although a few scattered rises were recorded in the area in 1954. Declines ranged from 0.8 foot to 15.7 feet during the 3-year period of record. Changes in water levels during 1954 ranged from a rise of 2.6 feet to a decline of 9.9 feet. The average net change over the entire area for the 3-year period of record, based on 15 wells, was a decline of 5.7 feet; the average net change for 1954, based on 16 wells, was a decline of 1 foot. However, in the most heavily developed irrigation area in the vicinity of Tularosa, declines in 8 wells for the 3-year period ranged from 3.2 to 9.2 feet and averaged about 7 feet. In the same area, measurements in 11 observation wells indicate an average net decline of 2 feet for 1954. As irrigation continues and as additional irrigated land is developed, it may be expected that the pattern of decline will become more consistent, and that the area of decline will expand somewhat.

14.9.12.220. E. M. Silver. Drilled irrigation water-table well in bolson deposits. Highest water level 117.81 below lsd, Mar. 27, 1953; lowest 133.90 below lsd, Apr. 10, 1952. Records available:. 1952-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 10, 1952	133.90	Feb. 2, 1954	121.60	June 25, 1954	120.63	Oct. 26,1954	121.56
Mar. 27, 1953	117.81	Apr. 16	120.35	Aug. 26	121.39	Dec. 27	121.00
June 24	118.93						

14.9.28.121. Montie Gardenhire. Drilled irrigation and stock water-table well in bolson deposits, diameter 10 inches, depth 50 feet. Highest water level 33.32 below lsd, Apr. 8, 1952; lowest 39.64 below lsd, Dec. 27, 1954. Records available: 1952-54. Apr. 8, 1952, 33.32; Mar. 27, 1953, 35.76; Apr. 16, 1954, 36.79; June 25, 38.18; Aug. 26, 38.90; Oct. 26, 39.39; Dec. 27, 39.64.

14.10.18.424. R. D. Champion. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 336 feet. Highest water level 172.38 below lsd, Mar. 27, 1953; lowest 184.59 below lsd, Apr. 8, 1952. Records available: 1952-54.

Apr. 8, 1952	184.59	June 24, 1953	176.35	Apr. 16, 1954	173.28	Oct. 26,1954	177.24
Mar. 27, 1953	c172.38	Feb. 2, 1954	173.37	Aug. 26	180.50	Dec. 27	c176.53

c Nearby well being pumped.

14.10.19.130. J. C. Johnson. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 300 feet. Highest water level 113.44 below lsd, Apr. 8, 1952; lowest 122.24 below lsd, June 25, 1954. Records available: 1952-54.

Apr. 8, 1952	113.44	Feb. 2, 1954	115.83	June 25, 1954	122.24	Oct. 26,1954	119.09
Mar. 27, 1953	115.38	Apr. 16	119.47	Aug. 26	121.97	Dec. 27	118.88
June 24	120.26						

14.10.31.144. Luther Watson. Drilled irrigation water-table well in bolson deposits, diameter 17 inches, depth 230 feet. Highest water level 73.75 below lsd, Apr. 8, 1952; lowest 108.26 below lsd, Apr. 16, 1954. Records available: 1952-54.

Apr. 8, 1952	73.75	June 24, 1953	a109.14	Apr. 16, 1954	108.26	Oct. 26,1954	c82.61
Mar. 27, 1953	a109.5	Feb. 4, 1954	b106.10	Aug. 26	83.57	Dec. 27	81.02

a Pumping.
b Pumped recently.
c Nearby well being pumped.

15.9.24.242a. Fred Dale. Drilled unused water-table well in bolson deposits, diameter 12 inches, depth 214 feet. Highest water level 107.89 below lsd, Apr. 9, 1952; lowest 116.01 below lsd, June 24, 1953. Records available: 1952-54. Apr. 9, 1952, 107.89; Mar. 27, 1953, 114.76, nearby well being pumped; June 24, 116.01; Feb. 5, 1954, 111.12; Apr. 17, 112.52.

16.9.3.422. Wade Maupin. Drilled irrigation water-table well in bolson deposits. Highest water level 118.43 below lsd, Dec. 27, 1954; lowest 134.75 below lsd, Apr. 17, 1954. Records available: 1952-54.

Apr. 12, 1952	124.38	June 24, 1953	126.63	Apr. 17, 1954	134.75	Oct. 26,1954	b127.53
Mar. 26, 1953	a153.10	Feb. 8, 1954	b132.88	Aug. 2	128.80	Dec. 27	118.43

a Pumping.
b Pumped recently.

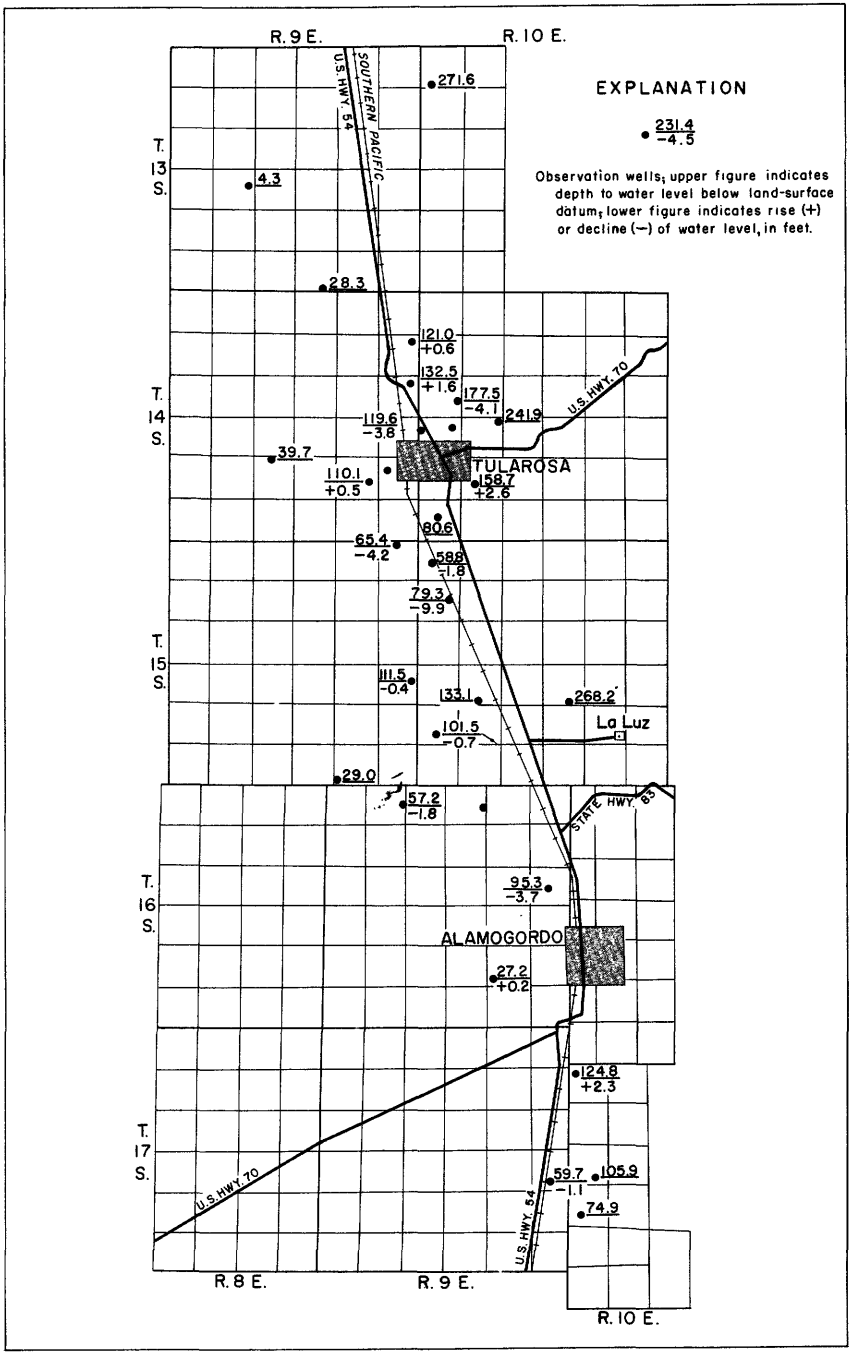


Figure 61.--Water level in February 1955 and change in level from February 1954 to February 1955 in Tularosa-Alamogordo area, Otero County, N. Mex.

16.9.26.341. R. J. Turner. Drilled irrigation and stock water-table well in bolson deposits, diameter 8 inches, depth 84 feet. Highest water level 26.33 below lsd, Apr. 14, 1952; lowest 30.09 below lsd, June 25, 1954. Records available: 1952-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 14, 1952	26.33	Feb. 8, 1954	27.38	June 25, 1954	30.09	Oct. 26, 1954	29.81
June 24, 1953	29.87	Apr. 16	29.90	Aug. 26	29.50	Dec. 27	27.85

17.9.24.342. W. L. McCommon. Drilled unused water-table well in bolson deposits. Highest water level 56.18 below lsd, Apr. 14, 1952; lowest 60.81 below lsd, Oct. 26, 1954. Records available: 1952-54.

Apr. 14, 1952	56.18	Feb. 8, 1954	58.65	June 25, 1954	59.64	Oct. 26, 1954	60.81
June 23, 1953	57.58	Apr. 17	60.40	Aug. 26	60.49	Dec. 27	60.18

17.10.18.432. Harold Striker. Near Holloman AFB pumping station. Drilled unused well, diameter 10 inches, depth 260 feet. Land-surface datum is 4,187.26 feet above msl. Highest water level 104.55 below lsd, Apr. 6, 1954; lowest 108.91 below lsd, Oct. 2, 1954. Records available: 1954.

Apr. 6	104.55	July 2	106.31	Sept. 2	108.39	Nov. 2	108.31
24	105.12	Aug. 2	107.48	Oct. 2	108.91	Dec. 2	107.43
May 13	106.23						

Quay County

House area.--The House area is on the High Plains in the southwestern part of Quay County, about 40 miles south of Tucumcari. Irrigation in the area is by water pumped from wells finished in the Ogallala formation. The observation-well program, begun in 1941, was continued in 1954. Water levels were measured in 61 wells in January and in about 22 wells at bimonthly intervals. A recording gage was maintained on well 5.29.17.133, about half a mile north of House. Only water-level measurements made in wells at bimonthly intervals are listed in this report, but all measurements made annually in January 1954 and 1955 were used in the preparation of the map showing the net annual changes in ground-water storage in the House area in 1954.

The recharge to the ground-water reservoir in the House area is by direct precipitation and drainage into the Alamosa Creek valley. Precipitation in the House area in 1954 was about 70 to 90 percent of normal. It amounted to 10.55 inches at House, 4.02 inches below normal; 15.62 inches at Ragland, 3.72 inches below normal; and 13.16 inches at Hassel, 1.58 inches below normal. Between 60 and 75 percent of the total precipitation at the 3 stations occurred during the growing season, April through September.

About 3,300 acres of land was irrigated in 1954, according to a survey made during the year, almost the same as in 1953. Of this amount, about 500 acres was in alfalfa, as compared with about 550 acres in 1953; most of the remaining 2,800 acres was in row crops. It is estimated that about 5,000 acre-feet of water was pumped for irrigation, as compared to 5,670 acre-feet in 1953. This reduction was due to greater precipitation during the growing season and the inability of the aquifer in places to yield the amount of water needed for certain types of crops during the growing season.

Year-to-year net declines in water level continued in 1954, as a result of below-normal precipitation and continued pumping of ground water from storage. However, the net declines in 1954 were less than in 1953. Figure 62 shows the areal changes in water levels from January 1954 to January 1955. In 1954 the levels declined under an area of about 40 square miles; they declined more than a foot under about 9 square miles and more than 2 feet under about 1 square mile. The maximum decline of 2.7 feet was observed in a well in sec. 5, T. 5 N., R. 29 E. During the 5-year period from January 1950 to January 1955, the levels declined more than 2 feet under an area of about 31 square miles, and as much as 18 feet under 2 heavily pumped areas (totaling about 0.2 square mile) 2.5 and 4 miles north of House.

House Area

5.28.1.221. D. C. Wyatt. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 133 feet, cased to 134. Highest water level 46.63 below lsd, Mar. 29, 1946; lowest 55.64 below lsd, Sept. 24, 1954. Records available: 1946-54. Jan. 23, 52.32; Mar. 31, 52.33; May 25, 52.39; July 28, 55.14; Sept. 24, 55.64; Nov. 26, 53.41.

5.29.5.342. William Martin. Drilled water-table well in Ogallala formation, depth 80 feet. Land-surface datum is 4,656 feet above msl. Highest water level 30.15 below lsd, Feb. 2, 1943; lowest 51.34 below lsd, Oct. 15-19, 1953. Records available: 1941-54. Recording gage removed March 1954.

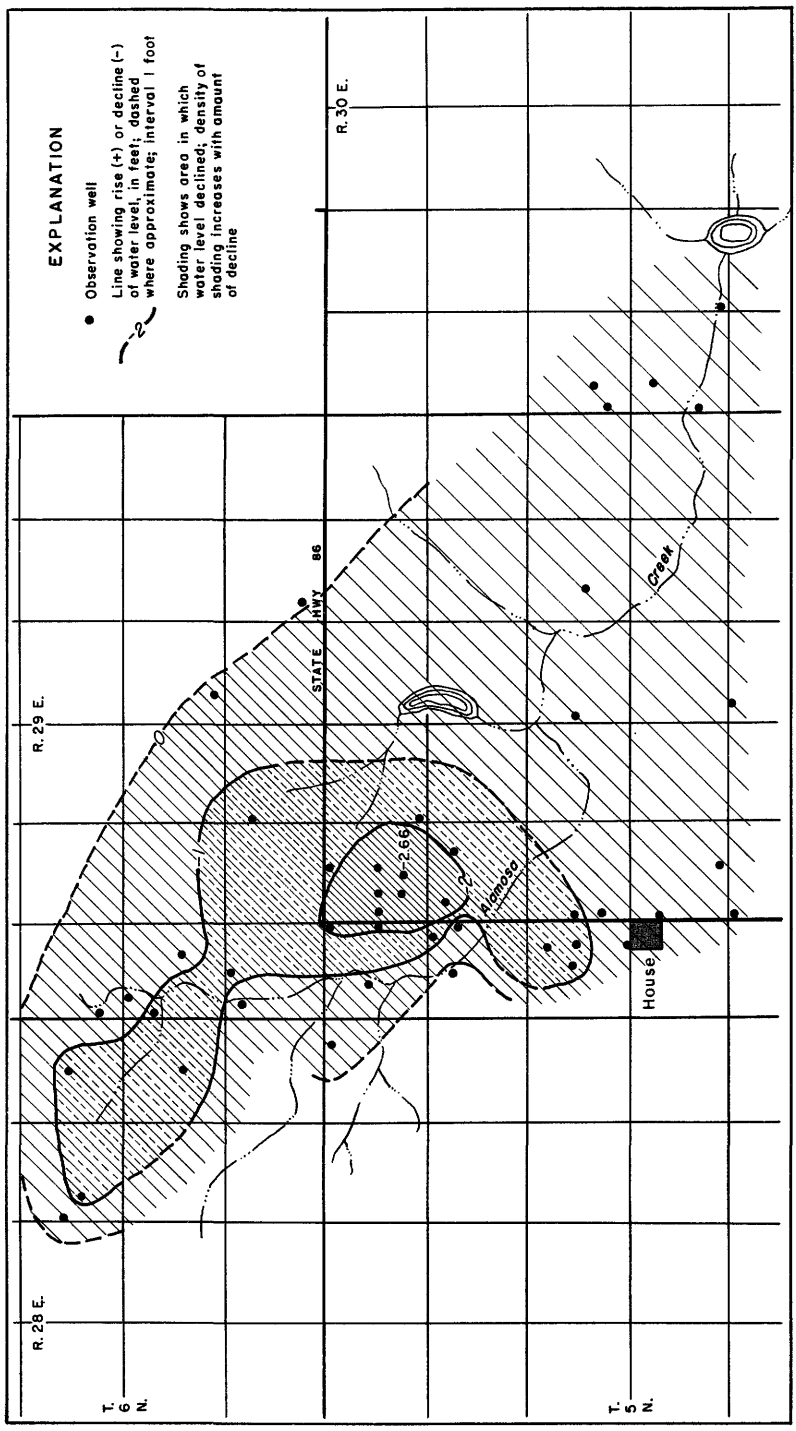


Figure 62.--Change in ground-water level from January 1954 to January 1955 in House area, Quay County, N. Mex.

5.29.5.342--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	50.43	Jan. 21	50.17	Feb. 8	49.96	Feb. 26	49.74
2	50.42	22	50.16	9	49.94	27	49.76
3	50.40	23	50.14	10	49.93	28	49.74
4	50.39	24	50.13	11	49.93	Mar. 1	49.73
5	50.38	25	50.13	12	49.91	2	49.74
6	50.36	26	50.11	13	49.90	3	49.72
7	50.34	27	50.09	14	49.89	4	49.71
10	50.29	28	50.08	15	49.88	5	49.70
11	50.28	29	50.07	16	49.87	6	49.69
12	50.27	30	50.06	17	49.86	7	49.68
13	50.26	31	50.05	18	49.83	8	49.66
14	50.25	Feb. 1	50.04	19	49.83	9	49.65
15	50.24	2	50.03	20	49.82	31	h49.43
16	50.22	3	50.01	21	49.81	May 25	ah67.13
17	50.21	4	50.00	22	49.80	July 27	ah76.95
18	50.20	5	49.99	23	49.79	Sept. 24	h57.75
19	50.19	6	49.98	24	49.77	Nov. 25	h53.85
20	50.18	7	49.97	25	49.76		

a Pumping.
h Tape measurement.

5.29.6.222. L. L. Poe. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 125 feet. Highest water level 51.51 below lsd, Mar. 28, 1946; lowest 76.80 below lsd, Sept. 24, 1954. Records available: 1945-54. Jan. 23, 70.90; May 25, 82.86, pumping; Sept. 24, 76.80; Nov. 26, 74.03.

5.29.7.141. D. L. Birch. Drilled unused water-table well in Ogallala formation. Highest water level 28.95 below lsd, Sept. 22, 1942; lowest 44.16 below lsd, Nov. 20, 1953. Records available: 1942-53. Measurement discontinued.

5.29.8.232. G. W. Turner. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 139 feet, cased to 98. Highest water level 34.19 below lsd, Feb. 2, Mar. 25, 1943; lowest 56.10 below lsd, Sept. 24, 1954. Records available: 1941-54. Jan. 25, 49.67; Mar. 31, 49.33; May 25, 49.60; July 27, 67.48, pumping; Sept. 24, 56.10; Nov. 25, 52.26.

5.29.9.400. J. M. Gollehon. Formerly W. Y. Head. Drilled stock water-table well in Ogallala formation, diameter 6 inches. Highest water level 21.33 below lsd, Jan. 21, 1942; lowest 33.71 below lsd, May 25, 1954. Records available: 1941-54. Jan. 25, 37.27, pumping; Mar. 31, 55.62, pumping; May 25, 33.71; July 27, 28.82; Sept. 24, 27.39; Nov. 25, 30.54, pumping.

5.29.13.131. J. C. Barron. Drilled irrigation water-table well in Ogallala formation. Highest water level 56.74 below lsd, Mar. 28, 1946; lowest 75.85 below lsd, Sept. 24, 1954. Records available: 1946-54. Jan. 19, 60.10; Mar. 31, 68.68, pumped recently; May 25, 78.00, pumping; July 27, 65.77; Sept. 24, 75.85; Nov. 25, 63.46.

5.29.15.311b. R. A. Tullis. Drilled unused water-table well in Ogallala formation, diameter 20 inches, reported depth 90 feet. Highest water level 17.52 below lsd, Sept. 23, 1942; lowest 22.90 below lsd, Sept. 24, 1954. Records available: 1942-54. Jan. 19, 22.54; Mar. 31, 22.66; May 25, 22.72; July 27, 22.80; Sept. 24, 22.90; Nov. 25, 22.84.

5.29.17.133. W. W. Kuykendall. Drilled unused water-table well in Ogallala formation, diameter 12 inches, depth 57 feet. Land-surface datum is 4,748 feet above msl. Highest water level 29.82 below lsd, Jan. 21, 1942; lowest 48.24 below lsd, Oct. 30-31, 1954. Records available: 1941-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	46.54	46.30	45.96	45.72	45.55	45.94	46.58	47.04	.....	47.90	48.23	48.08
2	46.54	46.29	45.96	45.71	45.55	45.95	46.59	47.07	.....	47.91	48.23	48.08
3	46.53	46.28	45.96	45.71	45.55	45.97	46.62	47.07	.....	47.93	48.23	48.07
4	46.53	46.27	45.95	45.70	45.55	45.97	46.62	47.07	.....	47.94	48.23	48.06
5	46.52	46.26	45.94	45.69	45.55	46.02	46.64	47.08	.....	47.95	.....	48.05
6	46.52	46.25	45.93	45.69	45.54	46.03	46.66	47.09	.....	47.97	.....	48.04
7	46.50	46.25	45.92	45.68	45.54	46.05	46.69	47.10	.....	47.99	.....	48.04
8	46.50	46.25	45.92	45.67	45.54	46.06	46.70	47.12	.....	48.00	48.23	48.03
9	46.50	46.24	45.91	45.66	45.54	46.09	46.72	47.15	.....	48.02	48.23	48.03
10	46.48	46.24	45.91	45.65	45.55	46.11	46.73	47.15	.....	48.04	48.22	48.02

5.29.17.133--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	46.47	46.24	45.88	45.64	45.55	46.13	46.73	47.16	.....	48.06	48.21	48.01
12	46.46	46.23	45.88	45.64	45.55	46.15	46.76	47.17	.....	48.06	48.21	48.01
13	46.45	46.21	45.88	45.63	45.56	46.16	46.77	47.18	.....	48.07	48.21	48.01
14	46.44	46.21	45.88	45.63	45.58	46.19	46.83	47.19	.....	48.09	48.20	48.00
15	46.44	46.20	45.87	45.63	45.60	46.20	46.84	47.21	.....	48.10	48.19	47.99
16	46.43	46.19	45.87	45.63	45.62	46.27	46.85	47.23	.....	48.12	48.19	47.98
17	46.43	46.18	45.87	45.63	45.63	46.28	46.87	47.24	.....	48.13	48.18	47.97
18	46.43	46.18	45.87	45.63	45.66	46.29	46.88	47.26	.....	48.14	48.18	47.97
19	46.42	46.18	45.87	45.62	45.67	46.32	46.89	47.27	.....	48.15	48.17	47.96
20	46.41	46.16	45.86	45.61	45.69	46.35	46.91	47.28	e47.76	48.16	48.17	47.95
21	46.41	46.15	45.86	45.60	45.71	46.37	e46.94	47.30	.....	48.17	48.16	47.95
22	46.40	46.14	45.86	.....	45.74	46.38	e46.95	47.31	.....	48.18	48.14	47.94
23	46.38	46.14	.....	.....	45.74	46.43	e46.96	47.32	.....	48.19	48.14	47.93
24	46.34	46.13	.....	.....	45.75	46.45	e46.96	.....	.....	48.19	48.13	47.92
25	46.35	46.13	.....	45.58	45.76	46.46	e46.97	47.32	.....	48.19	48.12	47.91
26	46.34	46.11	.....	45.58	45.78	46.49	e46.99	47.33	.....	48.20	48.11	47.90
27	46.33	46.09	.....	45.58	45.82	46.51	47.00	47.36	.....	48.20	48.11	47.89
28	46.32	45.96	.....	45.57	45.83	46.53	47.00	47.37	h47.87	48.21	48.10	47.88
29	46.32		.....	45.56	45.86	46.55	47.00	47.38	47.87	48.23	48.10	47.88
30	46.32		.....	45.55	45.88	46.57	47.01	47.40	47.89	48.24	48.09	47.86
31	46.30		45.73		45.89		47.03	.....		48.24		47.86

e Estimated.
h Tape measurement.

5.29.18.434. A. O. Norris. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 87 feet, cased to 87. Highest water level 49.82 below lsd, Mar. 28, 1946; lowest 66.16 below lsd, Sept. 25, 1952. Records available: 1946-54. Jan. 25, 62.03; Mar. 31, 60.82; May 25, 63.43; July 27, 70.58, pumping; Sept. 24, 66.09; Nov. 25, 64.02.

5.29.23.222a. E. C. Harris. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches. Highest water level 30.00 below lsd, Mar. 30, 1950; lowest 31.81 below lsd, Mar. 31, 1954. Records available: 1949-54. Jan. 19, 31.22; Mar. 31, 31.81; May 25, 31.42; July 27, 31.56; Sept. 24, 31.69; Nov. 25, 31.61.

5.29.27.112. E. D. Gallehon. Drilled unused water-table well in Ogallala formation, diameter 16 inches, depth 152 feet, cased to 152. Highest water level 70.50 below lsd, May 28, 1951; lowest 72.14 below lsd, May 30, 1948. Records available: 1947-54. Jan. 18, 70.66; Mar. 31, 70.79; May 25, 70.70; July 27, 70.75; Sept. 24, 70.83; Nov. 25, 70.76.

5.29.29.111. C. A. Morrow. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 91 feet. Highest water level 65.91 below lsd, Feb. 2, 1943; lowest 72.72 below lsd, Sept. 18, 1947. Records available: 1941-54. Jan. 18, 69.59; Mar. 31, 69.80; May 25, 69.63; July 27, 69.82; Sept. 24, 69.97; Nov. 25, 69.91.

5.30.18.331. W. M. Lee. Formerly W. C. Lee. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 75 feet, cased to 60. Highest water level 34.76 below lsd, Mar. 28, 1946; lowest 50.03 below lsd, July 27, 1954. Records available: 1944-54. Jan. 19, 41.29; Mar. 31, 47.53; May 25, 47.86; July 27, 50.03; Sept. 24, 45.58; Nov. 25, 42.83.

5.30.20.333a. J. C. Barron. Drilled stock water-table well in Ogallala formation, diameter 6 inches. Highest water level 26.11 below lsd, Sept. 25, 1953; lowest 27.09 below lsd, Sept. 24, 1954. Records available: 1953-54. Jan. 19, 26.52, pumped recently; Mar. 31, 27.22, pumping; May 25, 26.84, pumping; July 27, 27.26, pumping; Sept. 24, 27.09; Nov. 25, 26.62.

5.30.31.442. T. W. Coleman. Formerly R. V. Brownd. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 129 feet, cased to 129. Highest water level 98.77 below lsd, May 25, 1954; lowest 100.12 below lsd, Oct. 1, 1948; Mar. 30, 1950. Records available: 1943-54. Jan. 19, 98.84; Mar. 31, 99.02; May 25, 98.77; July 27, 99.42; Sept. 24, 99.10.

6.28.1.232. H. A. Fitzgerald. Formerly C. M. Brown. Drilled stock and domestic water-table well in Ogallala formation, reported depth 98 feet. Highest water level 65.88 below lsd, Jan. 23, 1954; lowest 72.93 below lsd, Apr. 1, 1948. Records available: 1947-54. Jan. 23, 65.88; Mar. 31, 66.55; May 25, 66.40; July 28, 66.33; Nov. 26, 66.82.

6.28.24.233. Byers Irwin. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 131 feet, cased 79-131. Highest water level 77.97 below lsd, Mar. 27, 1944; lowest 95.43 below lsd, Sept. 24, 1954. Records available: 1944-54. Jan. 22, 85.44; Mar. 31, 84.29; May 25, 87.77; July 28, 91.09; Sept. 24, 95.43; Nov. 26, 88.44.

6.28.25.411. R. A. Davenport. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 116 feet, cased to 116, perforations 76-116. Highest water level 51.87 below lsd, Mar. 27, 1944; lowest 61.43 below lsd, Sept. 24, 1954. Records available: 1943-54. Jan. 22, 56.80; Mar. 31, 56.63; May 25, 60.75; Sept. 24, 61.43; Nov. 26, 58.72.

6.29.27.332. W. K. Kemp. Formerly J. D. Green. Drilled unused water-table well in Ogallala formation, diameter 16 inches, depth 181 feet, cased to 100. Highest water level 43.43 below lsd, Nov. 30, 1950, Mar. 28, 1952; lowest 44.33 below lsd, Mar. 29, 1944. Records available: 1944-54. Jan. 22, 43.72; Mar. 31, 43.73; May 25, 43.76; July 28, 43.83; Nov. 25, 43.90.

6.29.30.112. M. L. Griggs. Formerly L. M. McDaniels. Drilled unused water-table well in Ogallala formation. Highest water level 47.98 below lsd, Nov. 20, 1942; lowest 56.15 below lsd, July 30, 1953. Records available: 1941-54. Jan. 22, 54.23, nearby well being pumped; Mar. 31, 54.10; May 25, 54.76; July 28, 55.83; Nov. 26, 55.36.

6.29.30.412. R. W. Dean. Drilled irrigation water-table well in Ogallala formation, diameter 18 inches, depth 122 feet, cased to 122. Highest water level 73.63 below lsd, Apr. 1, 1947; lowest 80.02 below lsd, Nov. 26, 1954. Records available: 1946-54. Jan. 22, 79.49; Mar. 31, 79.60; May 25, 79.55; July 27, 79.69; Nov. 26, 80.02.

6.29.33.131. Frank Morrow. Drilled irrigation water-table well in Ogallala formation, diameter 20 inches, depth 139 feet, cased to 139. Highest water level 54.18 below lsd, Apr. 8, 1945; lowest 65.96 below lsd, May 30, 1953. Records available: 1942-54. Jan. 22, 60.80; Mar. 31, 60.83; May 25, 60.54; July 28, 70.71, pumping; Sept. 24, 65.40; Nov. 25, 63.32.

6.29.35.314. T. W. Coleman. Drilled irrigation water-table well in Ogallala formation, diameter 14 inches, depth 76 feet, cased from 28 to 76. Highest water level 38.24 below lsd, Apr. 1, 1947; lowest 47.20 below lsd, July 30, 1948. Records available: 1945-54. Jan. 22, 39.87; Mar. 31, 39.56; May 25, 39.36; Nov. 25, 39.88.

Roosevelt County

Portales Valley.--Portales Valley, in northern Roosevelt County, is a broad depression in the High Plains extending east-southeast from the western edge of the High Plains through Portales to the Texas State line. The Portales ground-water basin was declared by order of the State Engineer on May 1, 1950. The declared basin covers an area of about 228 square miles which includes most of Portales Valley. Since 1931, water levels in the area have been measured to determine the effects of pumping and precipitation upon the ground-water storage. Records of these measurements have been published annually in the water-level reports since 1938. Water levels were measured in 183 wells in January 1954 and in about 37 of these at bimonthly intervals. Recording gages were maintained on 4 wells: 1 about 7 miles northwest of Portales, 1 about a mile northeast of Portales, 1 about a mile south of Portales, and 1 about 11 miles southeast of Portales. The measurements made in January, not all of which are listed in this report, were used to prepare the map of the net change in water levels in 1954. (See fig. 63.)

Fluctuations of water level result partly from variation in the amount of recharge to the ground-water body by precipitation. However, in areas of heavy pumping, such as the area about Portales, fluctuations are large as a result mainly of withdrawal of ground water for irrigation. The amount of ground water that must be pumped for irrigation depends in part upon the amount and distribution of precipitation. Precipitation in the Portales Valley ranged from about 60 percent of normal at Floyd in the northwestern part of the valley to slightly above normal, above 105 percent, at Portales in the central part of the valley. As reported by the U. S. Weather Bureau, precipitation at Floyd was 9.05 inches, 6.25 inches below normal; at a station 7 miles northwest of Portales 12.22 inches, an estimated 5.8 inches below normal; and at Portales 18.65 inches, 0.58 inch above normal. Precipitation during the growing season, April through September, was about 55 to 90 percent of normal and was about 60 to 85 percent of the total precipitation for the year.

In 1953, the State Engineer made a survey of irrigated acreage and located the irrigation wells in Portales Valley. (The area includes all the declared ground-water basin of Portales Valley.) The results of the survey show that about 49,000 acres of land was irrigated in 1953, and indicate estimates for recent years including 1953 were too low. It is estimated that about the same amount of land was irrigated in 1954. The amount of ground water required for the irrigation of crops apparently was about the same in 1954 as in 1953. This is indicated by electric-power records of 533 irrigation pumps for both years. A revised estimate, based on the irrigated-acreage survey of 1953, indicates that possibly 100,000 acre-feet was pumped for irrigation in 1953 rather than 90,000 acre-feet, as previously estimated. Pumpage for municipal use at Portales in 1954 was reported to be slightly less than the 1,280 acre-feet used in 1953.

As precipitation during the growing season was greater generally in 1954 than in 1953 and more favorably distributed over the main part of the irrigated area, and as the rains in August caused an early cessation of pumping and some recharge, the net declines of water level were not

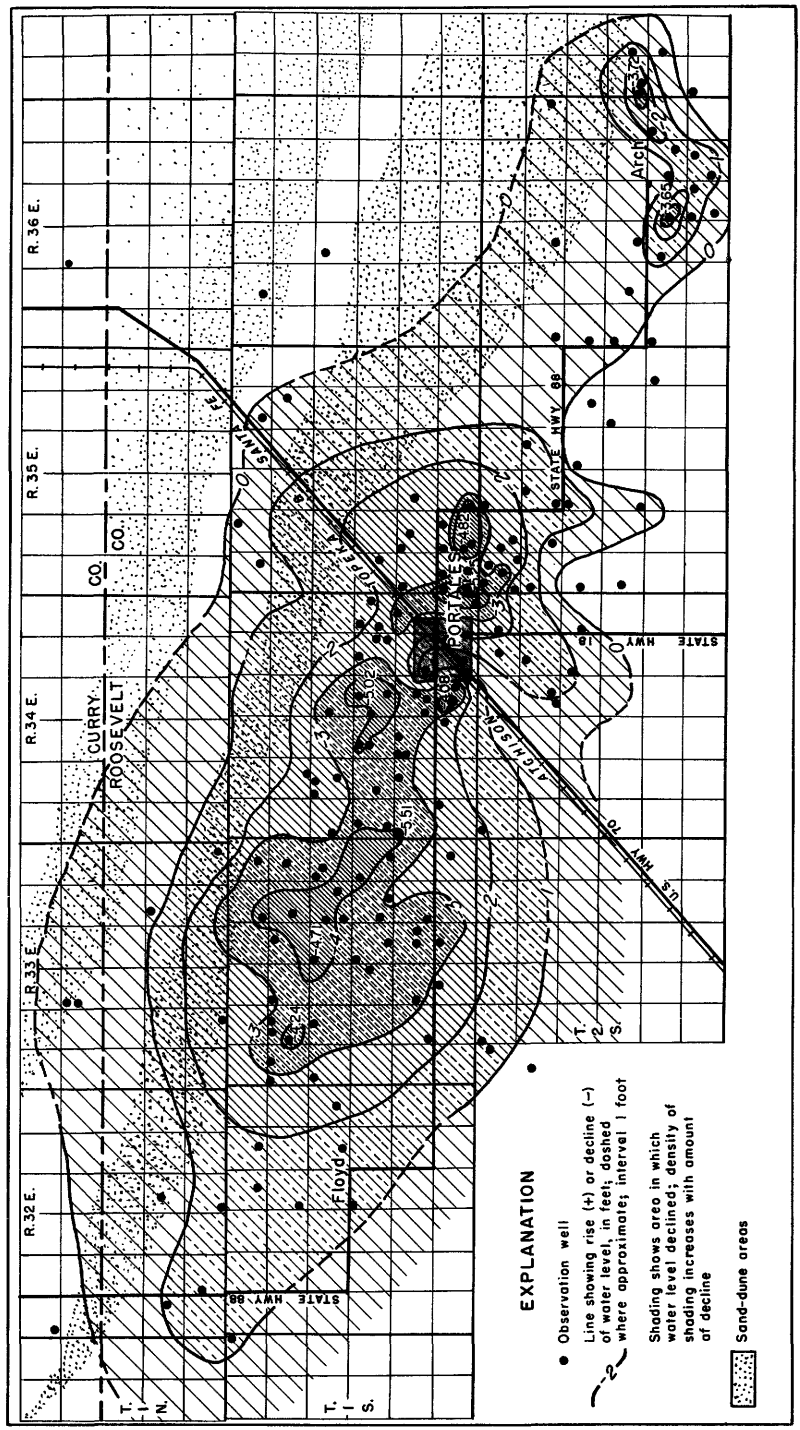


Figure 63.--Change in ground-water level from January 1954 to January 1955 in Portales Valley, Roosevelt County, N. Mex.

as great in 1954 as in 1953. Figure 63 shows generally smaller declines in water level from January 1954 to January 1955 throughout the valley and a marked difference in the center of the valley. From January 1954 to January 1955 the water levels declined more than 1 foot under about 155 square miles, more than 2 feet under about 74 square miles, more than 3 feet under about 37 square miles, more than 4 feet under about 8 square miles, and more than 5 feet under less than 1 square mile. In comparison, like declines in the water levels in 1953 occurred under 200, 103, 74, 43, and 20 square miles, respectively. Additionally, in 1953 a decline of more than 6 feet occurred under 4 square miles. The largest net decline recorded in 1954, 5.5 feet, was in a well about 4 miles west of Portales, on the south edge of an area that generally has the largest net annual declines.

Changes of water level from January 1950 to January 1955 and January 1932 to January 1955 indicate that most of the declines occurred during the 5-year period 1950 to 1955. In this period the water levels declined more than 6 feet under an area of 125 square miles, more than 10 feet under about 73 square miles, and more than 18 feet under about 12 square miles, a maximum decline of more than 20 feet centering about 7 miles west-northwest of Portales. From January 1932 to January 1955, the water levels declined more than 5 feet under about 130 square miles, more than 15 feet under about 63 square miles, and more than 30 feet under about 17 square miles, a maximum decline of more than 34 feet centering about 4 miles west-northwest of Portales. The area in which the declines are in excess of 5 feet is about the same for both the 5-year and 23-year periods, and this fact indicates that outside this area only small net changes in water level occurred during the period 1932 to 1950. Along the axis of the valley in the center of the irrigated area the maximum net decline averaged 3 to 4 feet per year for the period 1950 to 1955, but about 1 foot per year for the period 1932 to 1955. By the end of 1954, water levels reached the lowest winter stages since record began in 1932, except in some outlying areas where they rose in 1954. Also, in a few wells in Blackwater Draw northeast of Portales, distant from irrigation, water levels at the end of 1954 were still slightly above the record-low stages observed in 1941 prior to the heavy precipitation in that year.

Portales Valley

1N. 32. 7. 300. W. J. Crenshaw. See Curry County, page 201.

1N. 33. 36. 400b. Woodburn Bros. Drilled stock water-table well in valley fill, diameter 4 inches, depth 28 feet. Highest water level 1.81 below lsd, Nov. 24, 1941; lowest 13.97 below lsd, Jan. 13, 1941, Jan. 26, 1953. Records available: 1931-36, 1938-54. Pumping. Jan. 25, 15.64; Mar. 24, 14.20; May 22, 13.62; July 23, 14.07; Sept. 22, 13.86; Nov. 23, 15.10.

1N. 33. 36. 400c. Woodburn Bros. Drilled observation water-table well in valley fill, diameter 8 inches, depth 43 feet, cased to 40, perforations 8-40. Highest water level 7.88 below lsd, Apr. 9, 1953; lowest 10.36 below lsd, Aug. 18, 20, 1954. Records available: 1953-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.12	9.12	9.11	9.15	9.47	9.64	9.55	10.19	9.37	9.55	9.62	9.72
2	9.12	9.12	9.11	9.15	9.45	9.66	9.56	10.20	9.33	9.57	9.62	9.71
3	9.12	9.12	9.11	9.16	9.43	9.68	9.58	10.21	9.29	9.56	9.61	9.73
4	9.12	9.12	9.11	9.17	9.43	9.69	9.60	10.25	9.25	9.58	9.57	9.71
5	9.12	9.12	9.11	9.17	9.49	9.70	9.62	10.24	9.22	9.62	9.58	9.71
6	9.12	9.12	9.11	9.19	9.49	9.71	9.66	10.25	9.20	9.60	9.59	9.71
7	9.12	9.12	9.12	9.19	9.53	9.73	9.71	10.24	9.14	9.45	9.59	9.71
8	9.12	9.12	9.12	9.19	9.51	9.75	9.73	10.21	9.12	9.41	9.63	9.72
9	9.12	9.12	9.12	9.20	9.52	9.77	9.76	10.22	9.07	9.37	9.64	9.73
10	9.12	9.12	9.12	9.20	9.50	9.79	9.82	10.23	9.07	9.37	9.65	9.73
11	9.12	9.12	9.11	9.20	9.44	9.79	9.90	10.26	9.02	9.37	9.66	9.74
12	9.12	9.12	9.11	9.20	9.43	9.82	9.93	10.28	9.00	9.39	9.66	9.76
13	9.12	9.12	9.14	9.20	9.44	9.85	9.96	10.30	9.00	9.39	9.68	9.75
14	9.12	9.12	9.14	9.20	9.48	9.82	9.98	10.29	9.04	9.43	9.67	9.75
15	9.12	9.12	9.15	9.21	9.47	9.83	10.00	10.31	9.07	9.44	9.66	9.74
16	9.12	9.12	9.16	9.22	9.50	9.85	10.02	10.33	9.11	9.43	9.67	9.76
17	9.12	9.12	9.15	9.23	9.48	9.87	10.03	10.35	9.14	9.45	9.70	9.77
18	9.12	9.12	9.13	9.24	9.49	9.89	10.05	10.36	9.17	9.47	9.69	9.77
19	9.11	9.12	9.13	9.26	9.48	9.89	10.06	10.35	9.21	9.49	9.68	9.76
20	9.12	9.12	9.14	9.27	9.51	9.91	10.08	10.36	9.25	9.51	9.68	9.76
21	9.11	9.12	9.13	9.29	9.52	9.93	10.09	9.13	9.32	9.52	9.70	9.77
22	9.11	9.12	9.13	9.28	9.51	9.93	10.10	9.01	9.33	9.53	9.70	9.75
23	9.12	9.11	9.14	9.29	9.52	9.94	10.12	9.42	9.35	9.53	9.71	9.74
24	9.12	9.11	9.13	9.30	9.54	9.96	10.09	9.64	9.39	9.55	9.71	9.76
25	9.10	9.11	9.14	9.34	9.52	9.98	10.11	9.65	9.41	9.57	9.70	9.77

1N. 33. 36. 400c--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	9.12	9.10	9.14	9.38	9.54	9.99	10.13	9.57	9.40	9.58	9.71	9.77
27	9.12	9.11	9.14	9.39	9.55	10.00	10.14	9.53	9.39	9.62	9.71	9.78
28	9.12	9.11	9.15	9.47	9.58	9.33	10.17	9.48	9.42	9.61	9.72	9.80
29	9.12		9.15	9.45	9.60	9.39	10.17	9.45	9.47	9.62	9.71	9.79
30	9.12		9.15	9.45	9.60	9.56	10.18	9.44	9.51	9.61	9.72	9.78
31	9.12		9.14		9.62		10.20	9.42		9.60		9.78

1. 31. 1. 222. W. G. Griffith. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 156 feet, cased to 135. Highest water level 74. 81 below lsd, May 29, 1947; lowest 81. 97 below lsd, July 23, 1954. Records available: 1944-54. Jan. 18, 78. 87; Mar. 24, 78. 56; May 24, 80. 79; July 23, 81. 97; Sept. 22, 81. 49; Nov. 23, 80. 92.

1. 32. 3. 431. M. Nall. Drilled irrigation water-table well in valley fill. Highest water level 35. 98 below lsd, Mar. 25, 1949; lowest 50. 52 below lsd, Sept. 22, 1954. Records available: 1948-54. Jan. 26, 44. 33; Mar. 24, 44. 20; May 24, 45. 76; Sept. 22, 50. 52; Nov. 23, 45. 90.

1. 32. 14. 431. Robert Morrison. Drilled unused water-table well in valley fill, diameter 12 inches, depth 104 feet. Highest water level 43. 55 below lsd, Apr. 6, 1945; lowest 59. 98 below lsd, Sept. 22, 1954. Records available: 1944-54. Jan. 26, 54. 26; Mar. 24, 53. 90; May 24, 57. 72; July 23, 59. 72; Sept. 22, 59. 98; Nov. 23, 56. 68.

1. 33. 14. 331c. A. L. Wooten. Formerly J. E. Stacey. Drilled irrigation water-table well in valley fill. Highest water level 19. 37 below lsd, Jan. 16, 1945; lowest 51. 15 below lsd, July 23, 1954. Records available: 1944-54. Jan. 26, 46. 26; Mar. 24, 68. 67, pumping; May 22, 49. 34; July 23, 51. 15; Sept. 22, 51. 07; Nov. 22, 50. 59.

1. 33. 17. 211. W. W. May. Formerly Bertha Campbell. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 102 feet, cased to 92. Highest water level 17. 29 below lsd, Aug. 1, 1945; lowest 42. 05 below lsd, Sept. 22, 1954. Records available: 1945-54. Jan. 26, 36. 06; Mar. 24, 36. 18; July 23, 41. 45; Sept. 22, 42. 05; Nov. 22, 40. 21.

1. 33. 28. 311. J. C. Jolley. Formerly J. C. Rolan. Drilled irrigation water-table well in valley fill, diameter 15 inches, reported depth 116, cased to 115. Highest water level 39. 21 below lsd, Mar. 26, 1943; lowest 61. 65 below lsd, Sept. 22, 1954. Records available: 1938-54. Jan. 26, 56. 13; Sept. 22, 61. 65; Nov. 23, 60. 19.

1. 33. 29. 333. M. H. Rea. Drilled stock water-table well in valley fill, diameter 7 inches, depth 51 feet. Highest water level 29. 48 below lsd, Nov. 24, 1942; lowest 40. 11 below lsd, Sept. 22, Nov. 23, 1954. Records available: 1940-54. Jan. 26, 37. 99; Mar. 24, 38. 11; May 24, 38. 74; July 23, 39. 49; Sept. 22, 40. 11; Nov. 23, 40. 11.

1. 34. 15. 131. P. M. Marcus. Drilled irrigation water-table well in valley fill. Highest water level 49. 19 below lsd, Mar. 26, 1946; lowest 67. 50 below lsd, Sept. 21, 1954. Records available: 1945-54. Jan. 22, 60. 10; Mar. 24, 60. 16; May 22, 61. 84; July 22, 97. 27, pumping; Sept. 21, 67. 50; Nov. 22, 64. 28.

1. 34. 17. 411a. O. L. Spencer. Drilled unused water-table well in valley fill, diameter 12 inches, reported depth 70 feet. Highest water level 31. 74 below lsd, Mar. 29, 1947; lowest 56. 10 below lsd, July 23, 1954. Records available: 1947-54. Jan. 23, 49. 57; Mar. 24, 53. 76, pumping; May 22, 52. 70; July 23, 56. 10; Sept. 21, 58. 93, nearby well being pumped; Nov. 22, 53. 80.

1. 34. 22. 421a. R. C. Grunig. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 114 feet. Highest water level 42. 27 below lsd, July 30, 1949; lowest 65. 84 below lsd, Sept. 21, 1954. Records available: 1948-54. Jan. 22, 54. 40; Mar. 24, 55. 82; May 22, 85. 22, pumping; July 22, 94. 06, pumping; Sept. 21, 65. 84; Nov. 22, 59. 55.

1. 34. 25. 211. J. B. H. Young. Drilled unused water-table well in valley fill, diameter 12 inches, reported depth 101 feet. Highest water level 31. 98 below lsd, May 16, 1933; lowest 59. 48 below lsd, Oct. 8-9, 11, 18-23, 1954. Records available: 1931-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	55. 04	54. 75	55. 14	55. 77	56. 28	57. 33	58. 01	58. 82	59. 40	.....	.....
2	.....	55. 04	54. 76	55. 19	55. 78	56. 29	57. 36	58. 04	58. 84	59. 42	.....	.....
3	.....	55. 03	54. 74	55. 23	55. 79	56. 33	57. 38	58. 05	58. 86	59. 42	.....	.....
4	.....	55. 03	54. 73	55. 28	55. 80	56. 35	57. 42	58. 07	58. 89	59. 44	.....	.....
5	.....	55. 01	54. 73	55. 32	55. 80	56. 37	57. 45	58. 09	58. 91	59. 46	.....	.....

1.34.25.211--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	.....	55.00	54.73	55.36	55.87	56.40	57.43	58.11	58.93	59.47	.....	.....
7	.....	54.98	.....	55.40	55.92	56.45	57.46	58.14	58.95	59.47	.....	.....
8	.....	54.98	.....	55.41	55.95	56.47	57.50	58.16	58.98	59.48	.....	.....
9	.....	54.96	.....	55.41	55.97	56.50	57.53	58.19	59.00	59.48	.....	.....
10	.....	54.96	.....	55.46	55.98	56.53	57.57	58.22	59.03	59.47	.....	.....
11	.....	54.95	.....	55.50	55.99	56.58	57.61	58.25	59.06	59.48	.....	.....
12	.....	54.93	.....	55.53	56.03	56.60	57.65	58.28	59.09	59.47	.....	.....
13	.....	54.92	.....	55.54	56.03	56.65	57.68	58.31	59.11	59.45	.....	.....
14	.....	54.91	.....	55.54	56.04	56.68	57.72	58.34	59.14	59.46	.....	.....
15	.....	54.90	.....	55.55	56.04	56.72	57.74	58.37	59.16	59.47	.....	.....
16	.....	54.84	.....	55.56	56.04	56.74	57.76	58.40	59.19	59.47	.....	.....
17	.....	54.88	.....	55.56	56.05	56.78	57.77	58.42	59.21	59.47	.....	.....
18	.....	54.87	.....	55.58	56.06	56.83	57.78	59.45	59.22	59.48	.....	.....
19	.....	54.86	.....	55.58	56.08	56.87	57.80	58.47	59.24	59.48	h59.24	.....
20	.....	54.86	.....	55.61	56.11	56.91	57.82	58.50	59.24	59.48	59.25	.....
21	.....	54.85	.....	55.62	56.05	56.95	57.85	58.52	59.25	59.48	59.20	.....
22	.....	54.84	54.80	55.63	56.13	56.97	57.88	58.54	59.26	59.48	59.18	.....
23	55.15	54.83	54.82	55.64	56.14	57.02	57.91	58.56	59.28	59.48	59.25	.....
24	55.14	54.81	54.86	55.66	56.15	57.06	57.94	58.58	59.30	.....	59.18	.....
25	55.12	54.80	54.88	55.66	56.15	57.10	57.96	58.61	59.32	.....	.....	.....
26	55.12	54.79	54.90	55.68	56.16	57.15	57.97	58.64	59.33	.....	.....	.....
27	55.11	54.79	54.97	55.70	56.18	57.19	57.98	58.67	59.34	.....	.....	.....
28	55.07	54.76	54.98	55.71	56.20	57.23	58.01	58.70	59.35	.....	.....	.....
29	55.08		54.99	55.73	56.22	57.26	58.02	58.73	59.37	.....	.....	.....
30	55.06		55.02	55.74	56.21	57.29	58.04	58.76	59.38	.....	.....	.....
31	55.05		55.08		56.25		58.03	58.79		.....		.....

h Tape measurement.

1.34.30.111. F. L. Corder. Drilled irrigation water-table well, diameter 16 inches, depth 114 feet. Highest water level 49.58 below lsd, Jan. 25, 1954; lowest 54.68 below lsd, July 23, 1954. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
May 29, 1953	50.59	Nov. 18, 1953	50.28	Mar. 24, 1954	50.13	Sept. 22, 1954	a64.25
July 29	50.67	Jan. 25, 1954	49.58	July 23	54.68	Nov. 22	54.10
Sept. 25	52.28						

a Pumping.

1.34.33.223a. Portales Municipal Airport. Drilled irrigation water-table well in valley fill, diameter 12 inches. Highest water level 28.84 below lsd, Jan. 26, 1946; lowest 53.11 below lsd, Sept. 20, 1954. Records available: 1946-54. Jan. 22, 49.08; Mar. 22, 49.25; May 22, 50.36; July 21, 52.47; Sept. 20, 53.11; Nov. 22, 52.49.

1.35.2.300. Eastern New Mexico State College Park. Drilled irrigation water-table well in valley fill, depth 140 feet. Highest water level 42.88 below lsd, May 12, 1944; lowest 48.37 below lsd, July 11, 1940. Records available: 1935-54. Jan. 23, 45.02; Mar. 23, 45.09; May 24, 45.31; July 23, 45.50; Sept. 21, 45.42; Nov. 23, 45.19.

1.35.6.400. J. C. Brown. Drilled unused water-table well in valley fill, diameter 6 inches, depth 23 feet. Highest water level 5.13 below lsd, Nov. 25, 1941; lowest 15.46 below lsd, Jan. 16, 1941. Records available: 1931-54. Jan. 23, 14.04; Mar. 23, 14.12; May 24, 14.20; July 23, 14.32; Sept. 21, 14.41; Nov. 23, 14.49.

1.35.11.241. A. Hobbs Estate. Drilled unused water-table well in valley fill, diameter 6 inches, depth 51 feet. Highest water level 13.98 below lsd, Mar. 27, 1943; lowest 20.09 below lsd, Sept. 22, 1940. Records available: 1940-54. Jan. 23, 17.24; Mar. 23, 17.25; May 24, 17.38; July 23, 17.54; Sept. 21, 17.49; Nov. 23, 17.44.

1.35.27.344a. Lawson Read. Drilled unused water-table well in valley fill, diameter 6 inches. Highest water level 29.02 below lsd, Jan. 13, 1951; lowest 34.12 below lsd, Nov. 22, 1954. Records available: 1945-54. Jan. 20, 42.61, pumping; Mar. 22, 37.86, pumping; May 22, 35.03, pumping; July 22, 33.56; Sept. 21, 33.97; Nov. 22, 34.12.

1.35.28.143. Travis Culpepper. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 151 feet. Highest water level 44.08 below lsd, Mar. 27, 1943; lowest 54.91 below lsd, Sept. 21, 1954. Records available: 1935-54. Jan. 20, 52.49; Mar. 22, 52.66; May 22, 53.05; Sept. 21, 54.91; Nov. 22, 54.62.

2.34.2.233. Louisa Trout. Drilled unused water-table well in valley fill, diameter 12 inches, depth 89 feet. Highest water level 32.71 below lsd, Mar. 6, 15, 1942; lowest 70.58 below lsd, Aug. 5, 1954. Records available: 1931-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	62.49	62.08	63.49	63.45	64.67	65.66	67.60	67.30	66.82	66.09	65.44
2	.....	62.47	62.12	63.58	63.85	64.67	65.70	67.59	67.23	66.80	66.04	65.40
3	.....	.....	62.10	63.62	64.69	64.69	65.74	67.47	67.22	66.79	66.00	65.38
4	.....	.....	62.09	63.58	64.72	64.69	65.77	67.42	67.21	66.80	66.02	65.30
5	.....	.....	62.08	63.42	64.57	64.70	65.96	70.58	67.15	66.80	65.99	65.34
6	.....	.....	62.10	63.39	64.60	64.78	66.07	67.88	67.11	66.79	65.95	65.32
7	.....	.....	62.13	63.40	64.50	65.10	66.22	67.70	67.11	66.72	65.93	65.28
8	.....	.....	62.79	63.29	64.39	65.28	66.33	67.58	67.10	66.70	65.92	65.29
9	.....	.....	62.68	63.25	64.29	65.20	69.67	67.50	67.12	66.69	65.90	65.24
10	.....	.....	62.78	63.28	64.20	65.10	66.77	67.42	67.09	66.63	65.89	65.20
11	.....	.....	62.86	63.26	64.20	65.10	66.54	67.41	67.09	66.60	65.89	65.20
12	.....	.....	62.93	63.22	64.18	65.10	69.78	67.39	67.05	66.58	65.81	65.20
13	.....	.....	62.88	63.19	64.18	65.10	70.01	67.39	67.01	66.55	65.81	65.15
14	.....	.....	62.90	63.18	64.18	65.10	70.10	67.90	67.00	66.55	65.80	65.18
15	.....	.....	63.02	63.20	64.19	65.10	70.20	67.59	67.00	66.50	65.76	65.10
16	.....	.....	62.88	63.23	64.20	65.12	70.31	67.79	67.01	66.49	65.74	65.12
17	.....	.....	62.76	63.21	64.20	65.20	70.40	67.78	67.00	66.48	65.77	65.12
18	62.90	.....	62.74	63.21	64.22	65.31	67.79	67.73	67.00	66.46	65.73	65.12
19	62.83	.....	62.68	63.20	64.24	65.35	67.68	68.09	67.00	66.40	65.70	65.10
20	62.83	e62.20	62.64	63.22	64.27	65.34	67.69	68.02	67.00	66.38	65.68	65.10
21	.....	.....	62.82	63.28	64.28	65.37	67.69	68.00	67.03	66.35	65.69	65.10
22	.....	.....	63.11	63.31	64.31	65.39	67.57	67.87	67.01	66.32	65.65	65.08
23	.....	62.18	62.92	63.33	64.35	65.42	67.54	67.76	66.99	66.29	65.60	65.08
24	.....	62.18	62.88	63.32	64.35	65.41	67.58	67.67	66.98	66.27	65.60	65.05
25	62.66	62.14	62.85	63.30	64.37	65.43	67.42	67.62	66.99	66.25	65.58	65.05
26	62.63	62.10	62.79	63.31	64.40	65.49	67.39	67.58	66.94	66.25	65.55	65.04
27	62.60	62.16	62.79	63.32	64.46	65.49	67.58	67.54	66.89	66.19	65.48	65.04
28	62.58	62.10	62.88	63.33	64.49	65.51	70.77	67.49	66.89	66.18	65.52	65.00
29	62.57		63.08	63.38	64.53	65.58	67.95	67.40	66.87	66.13	65.48	65.00
30	62.53		63.30	63.41	64.53	65.67	67.83	67.38	66.88	66.12	65.48	64.98
31	62.50		63.48		64.58		67.78	67.33		66.08		64.93

e Estimated.

2.34.4.441. Maud Wallace. Dug observation water-table well in valley fill, diameter 2 inches, depth 14 feet. Highest water level 4.17 above lsd, Jan. 27, 1942; lowest dry at 14.52, Jan. 22, 1954, 15.02, Mar. 22, 1954. Records available: 1939-54. Jan. 22, 14.52, dry; Mar. 22, 15.02, dry; Sept. 20, 7.79; Nov. 22, 9.06.

2.34.10.431. B. G. Polk. Formerly L. W. Allen. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 100 feet, cased to 95. Highest water level 24.05 below lsd, July 31, 1945; lowest 41.97 below lsd, July 21, 1954. Records available: 1945-54. Jan. 22, 37.52; Mar. 22, 38.55; May 24, 39.10; July 21, 41.97; Sept. 20, 41.53; Nov. 22, 39.45.

2.35.6.121. Dallas Clark. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 102 feet. Highest water level 16.73 below lsd, Jan. 28, 1942; lowest 58.15 below lsd, July 21, 1954. Records available: 1931-54. Jan. 21, 49.81; Mar. 23, 49.58; May 24, 53.48; July 21, 58.15; Sept. 21, 59.78, pumped recently; Nov. 22, 55.68.

2.35.9.122. B. J. Powell. Formerly L. D. Griffith. Drilled irrigation water-table well in valley fill. Highest water level 20.28 below lsd, Jan. 13, 1951; lowest 33.68 below lsd, Sept. 20, 1954. Records available: 1946-54. Jan. 20, 30.21; May 24, 33.36; Sept. 20, 33.68; Nov. 22, 30.80.

2.35.14.414. Portales First National Bank. Dug observation water-table well in valley fill, diameter 2 inches, depth 9 feet. Highest water level 0.07 above lsd, Jan. 30, 1943; lowest 5.83 below lsd, July 21, 1954. Records available: 1939-54. Jan. 19, 4.54; Mar. 22, 4.32; May 22, 4.83; July 21, 5.83; Sept. 20, 3.64; Nov. 22, 3.85.

2.35.15.131a. Portales First National Bank. Dug observation water-table well in valley fill, diameter 3 inches, depth 11 feet, cased to 10. Highest water level 6.11 below lsd, Sept. 21, 1954; lowest 9.22 below lsd, July 21, 1954. Records available: 1953-54. Jan. 19, 7.61; Mar. 22, 7.36; May 22, 8.39; July 21, 9.22; Sept. 21, 6.11; Nov. 22, 6.84.

2.35.16.333. A. J. Cline. Dug water-table well in valley fill, diameter 2 inches, depth 11.5 feet. Highest water level 3.77 below lsd, Nov. 26, 1941; lowest 13.83 below lsd, May 27, 1948. Records available: 1939-54. Silted in to 11.5. Jan. 20, 11.18, dry. Measurement discontinued.

2.35.18.211. State of New Mexico. Dug observation water-table well in valley fill, diameter 2 inches, depth 11 feet. Highest water level 1.99 below lsd, July 20, 1942; lowest dry at 11.24, Mar. 22, 1954. Records available: 1939-54. Jan. 20, 11.22; Mar. 22, 11.24, dry.

2.35.19.134. Ora Johnson. Formerly Roy Faircloth. Drilled irrigation water-table well in valley fill, diameter 10 inches, depth 70 feet. Highest water level 25.87 below lsd, Nov. 27, 1950, Jan. 12, 1951; lowest 40.66 below lsd, May 27, 1953. Records available: 1946-54. Jan. 20, 31.42; May 24, 35.10; July 21, 37.66; Nov. 22, 31.68.

2.35.20.222. O. M. Rodgers. Drilled unused water-table well in valley fill, diameter 4 inches, depth 35 feet. Highest water level 16.62 below lsd, Sept. 20, 1954; lowest 18.86 below lsd, July 21, 1954. Records available: 1954. Mar. 22, 17.77; May 22, 18.20; July 21, 18.86; Sept. 20, 16.62; Nov. 22, 17.29.

2.35.23.111. P. O. Dozier. Drilled irrigation water-table well in valley fill. Highest water level 21.32 below lsd, Mar. 27, 1951; lowest 32.95 below lsd, May 22, 1954. Records available: 1949-54. Jan. 19, 26.00; Mar. 22, 25.80; May 22, 32.95; July 21, 56.33, pumping; Sept. 20, 28.40; Nov. 22, 26.16.

2.35.25.114a. Joe Caraway. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 96 feet. Highest water level 22.07 below lsd, Jan. 12, 1951; lowest 29.57 below lsd, Sept. 20, 1954. Records available: 1948-54. Jan. 19, 27.29; Mar. 23, 27.98; May 22, 48.00, pumping; July 21, 49.40, pumping; Sept. 20, 29.57; Nov. 22, 28.37.

2.36.8.432a. S. W. Davis. Drilled irrigation water-table well in valley fill. Highest water level 15.66 below lsd, Nov. 28, 1950; lowest 22.64 below lsd, July 28, 1953. Records available: 1948-54. Jan. 27, 42.51, pumping; Mar. 23, 20.62; May 22, 49.83, pumping; July 21, 45.08, pumping; Sept. 21, 34.35, pumped recently; Nov. 22, 21.69.

2.36.20.321. W. O. Davis. Dug and drilled irrigation water-table well in valley fill, diameter 11 inches, depth 123 feet. Highest water level 8.12 below lsd, Jan. 30, 1942; lowest 21.97 below lsd, June 29, 1932. Records available: 1931-54. Jan. 19, 16.92; Mar. 23, 16.94; May 22, 18.09; July 22, 18.32; Sept. 20, 18.19; Nov. 22, 17.76.

2.36.27.311a. J. M. Riley. Drilled irrigation water-table well in valley fill, reported depth 105 feet. Highest water level 12.75 below lsd, Nov. 28, 1950; lowest 27.44 below lsd, Sept. 23, 1953. Records available: 1947-54. Jan. 19, 20.49; Mar. 23, 20.98; May 22, 49.74, pumping; July 22, 49.95, pumping; Sept. 21, 50.10, pumping; Nov. 22, 22.29.

2.36.28.114b. Morgan Trammel. Drilled unused water-table well in valley fill, diameter 12 inches, depth 44 feet. Highest water level 7.30 below lsd, Dec. 4, 1941; lowest 23.94 below lsd, Aug. 22-23, 1954. Records available: 1932-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.07	19.67	19.62	19.93	21.06	22.07	.....	23.39	23.23	22.59	21.79	21.17
2	20.07	19.65	19.64	19.99	21.10	22.08	.....	23.41	23.16	22.56	21.76	21.16
3	20.06	19.64	19.66	20.08	21.15	.....	.....	23.44	23.10	22.54	21.71	21.14
4	19.96	19.62	19.65	20.13	21.20	.....	.....	23.48	23.06	22.52	21.70	21.11
5	19.95	19.60	19.66	20.17	21.26	.....	.....	23.51	23.02	22.49	21.68	21.12
6	19.93	19.60	19.66	20.21	21.30	.....	.....	23.52	22.98	22.47	21.67	21.10
7	19.90	.....	19.65	20.25	21.34	.....	.....	23.54	22.96	22.45	21.64	21.07
8	19.69	.....	.....	20.33	21.38	.....	.....	23.59	22.94	22.41	21.62	21.07
9	19.69	.....	.....	20.37	21.46	.....	.....	23.62	22.92	22.40	21.61	21.04
10	19.89	.....	.....	20.40	21.51	.....	.....	23.64	22.91	22.35	.....	21.03
11	19.68	.....	.....	20.47	21.54	.....	.....	23.67	22.90	22.32	.....	21.02
12	19.88	.....	.....	20.50	21.60	.....	.....	23.70	22.89	22.30	.....	21.02
13	19.86	.....	.....	20.53	21.64	.....	.....	23.73	22.88	22.27	.....	21.01
14	19.86	.....	.....	20.55	21.68	.....	.....	23.75	22.86	22.26	.....	21.00
15	19.66	.....	.....	20.59	21.71	.....	.....	23.80	22.80	22.23	.....	20.99
16	19.85	.....	.....	20.66	21.74	.....	.....	23.81	22.77	22.17	.....	20.96
17	19.82	.....	.....	20.69	21.78	.....	.....	23.83	22.74	22.14	.....	20.97
18	19.80	19.52	.....	20.72	21.80	.....	.....	23.86	22.72	22.11	.....	20.96
19	19.79	19.53	.....	20.74	21.86	.....	.....	23.88	22.68	22.08	.....	20.97
20	19.79	19.55	.....	20.77	21.91	.....	.....	23.90	22.68	22.06	h21.36	20.96

2.36.28.114b--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	19.79	19.55	.....	20.80	21.95	.....	.....	23.91	h22.69	22.04	21.35	20.96
22	19.77	19.55	.....	20.82	21.97	.....	23.09	23.94	22.66	22.02	21.32	20.96
23	19.75	19.58	19.66	20.86	21.97	.....	23.13	23.94	22.66	22.00	21.29	20.97
24	19.75	19.58	19.66	20.88	21.99	.....	23.16	23.85	22.65	21.96	21.28	20.98
25	19.74	19.58	19.69	20.90	22.01	.....	23.20	23.75	22.65	21.94	21.25	20.97
26	19.74	19.58	19.70	20.93	22.02	.....	23.22	23.66	22.66	21.92	21.24	20.98
27	19.74	19.60	19.71	20.94	22.03	.....	23.25	23.57	22.65	21.88	21.19	20.98
28	19.71	19.63	19.71	20.95	22.04	.....	23.28	23.50	22.63	21.86	21.22	20.97
29	19.70		19.73	20.99	22.05	.....	23.29	23.44	22.62	21.83	21.19	20.96
30	19.70		19.78	21.00	22.06	.....	23.32	23.39	22.61	21.82	21.18	20.94
31	19.68		19.86		22.07		23.36	23.29		21.80		20.91

h Tape measurement.

2.36.30.111. L. B. Thornton. Dug observation water-table well in valley fill, diameter 2 inches, reported depth 10 feet. Highest water level 0.45 below lsd, Nov. 26, 1941; lowest 9.20 below lsd, July 22, 1954. Records available: 1941-54. Jan. 19, 7.18; Mar. 23, 6.87; May 22, 8.23; July 22, 9.20; Sept. 20, 5.26; Nov. 22, 6.41.

2.36.34.312. L. W. Walker. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 65 feet, cased to 51. Highest water level 14.10 below lsd, Nov. 28, 1950; lowest 26.81 below lsd, May 22, 1954. Records available: 1947-54. Jan. 19, 20.61; Mar. 23, 23.56, pumped recently; May 22, 26.81; July 22, 24.48; Sept. 21, 20.75; Nov. 22, 21.22.

2.36.35.212a. Mrs. Eunice Harrison. Drilled irrigation water-table well in valley fill. Highest water level 8.24 below lsd, Jan. 12, 1951; lowest 19.18 below lsd, May 22, 1954. Records available: 1947-54. Jan. 19, 14.19; Mar. 23, 13.60; May 22, 19.18; Nov. 22, 16.52.

2.37.30.134. H. C. Nickels. Formerly C. S. Chunn. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 115 feet, cased to 80. Highest water level 18.06 below lsd, Nov. 28, 1950; lowest 24.45 below lsd, July 28, 1953. Records available: 1949-54. Jan. 19, 22.34; Mar. 23, 23.10; Nov. 22, 24.25.

Sierra County

Truth or Consequences area.--Thermal and nonthermal waters occur in the artesian basin along the flood plain of the Rio Grande in the central part of Sierra County, in south-central New Mexico. Truth or Consequences (formerly Hot Springs) is a health resort utilizing hot mineral waters which come from artesian wells drilled to the Magdalena group or which discharge from the overlying alluvium. Nonthermal water for irrigation and for municipal supply comes from artesian wells in deposits of Tertiary and Quaternary age in Mud Springs Draw, about a mile southwest of Truth or Consequences. About 38 square miles of the Hot Springs ground-water basin was declared by order of the State Engineer of New Mexico April 15, 1935. The basin was closed to further appropriation of mineral (thermal) water on July 1, 1937, and 10 years later the same was done for the fresh (nonthermal) artesian water. In 1947 and 1950 part of the basin, totaling about 1.5 square miles, was reopened for the appropriation of mineral water. Water levels in thermal wells at Truth or Consequences have been measured at regular intervals since 1939. In January 1954, water levels were measured in 9 thermal wells and 1 nonthermal well. Recording gages were maintained on the same thermal wells as in 1953: No. 6, a deep artesian well, and No. 6a, a shallow dug well in the alluvium. Data on these recorder wells are included in this report.

A general net rise occurred in the water levels in the Truth or Consequences area from January 1954 to January 1955. The average net rise in the thermal wells was 0.55 foot in 1954 as compared with an average decline of 0.45 foot in 1953. The observed rise in water levels ranged from 0.45 foot to 0.69 foot. Changes in artesian head of the thermal wells are caused primarily by the stage of the water in the Rio Grande, where most of the thermal waters discharge. Daily changes in artesian head are caused primarily by the pumping of wells. The water level in the nonthermal observation well rose 0.9 foot in 1954 as compared with a decline of 5.2 feet in 1953.

Truth or Consequences Area

6. Harry Dakos. Lot 4, block 8 in Truth or Consequences. Drilled unused artesian well, diameter 7 inches, depth 105 feet. Land-surface datum is 4,243.75 feet above msl. Highest water level 1.66 above lsd, Dec. 24, 1941; lowest 0.68 below lsd, Sept. 21, 1954. Records available: 1940-54.

6--Continued.

Daily highest water level, above and below lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-0.50	-0.49	-0.49	-0.04	-0.15	-0.06	-0.19	-0.25	-0.55	-0.61	-0.40	-0.23
2	.51	.53	.45	.06	.13	.05	.19	.25	.55	.62	.38	.20
3	.52	.52	.47	.09	.15	.11	.19	.30	.55	.59	.38	.19
4	.50	.51	.44	.11	.15	.09	.22	.31	.57	.59	.40	.17
5	.50	.50	.43	.10	.12	.09	.22	.30	.57	.54	.37	.21
6	.53	.49	.45	.11	.11	.11	.22	.31	.58	.52	.35	.19
7	.51	.51	.44	.12	.09	.13	.22	.32	.58	.54	.33	.17
8	.50	.49	.34.	.12	.02	.13	.18	.32	.58	.52	.33	.17
9	.51	.47	.27	.14	.03	.14	.14	.36	.60	.52	.33	.17
10	.54	.45	.20	.13	.04	.14	.14	.39	.62	.46	.34	.13
11	.51	.49	.19	.13	.02	.12	.10	.37	.61	.47	.33	.15
12	.50	.47	.21	.14	.02	.11	.10	.41	.60	.51	.30	.17
13	.52	.44	.21	.15	.01	.08	.10	.42	.59	.51	.27	.13
14	.51	.44	.20	.16	-.01	.09	.08	.44	.62	.54	.30	.13
15	.53	.45	.16	.15	.00	.08	.06	.45	.62	.53	.30	.11
16	.52	.50	.12	.14	.00	.08	.06	.47	.63	.53	.30	.10
17	.52	.46	.10	.16	-.10	.14	-.04	.46	.63	.50	.32	.15
18	.50	.44	.10	.18	.10	.15	.00	.49	.66	.50	.30	.14
19	.46	.46	.08	.17	.02	.15	.00	.46	.63	.50	.28	.13
20	.49	.48	.06	.16	+.02	.17	.00	.44	.67	.49	.27	.11
21	.54	.48	.04	.17	+.01	.17	-.07	.42	.68	.48	.25	.09
22	.52	.46	-.01	.16	+.01	.19	.12	.40	.67	.47	.27	.08
23	.51	.48	.00	.16	.00	.17	.13	.41	.66	.47	.25	.09
24	.51	.46	-.03	.15	-.01	.17	.17	.41	.62	.44	.25	.07
25	.50	.45	-.04	.16	-.01	.19	.19	.46	.63	.43	.21	.05
26	.53	.44	-.01	.15	.00	.19	.19	.47	.58	.45	.21	.03
27	.57	.42	.00	.15	-.05	.20	.22	.50	.57	.47	.22	.04
28	.53	.43	+.03	.16	.04	.20	.22	.51	.58	.44	.20	.07
29	.51		.04	.15	.09	.20	.22	.48	.61	.43	.20	.05
30	.52		.04	.15	.06	.24	.23	.48	.62	.41	.21	.05
31	.50		.02		.07		.23	.50		.39		.05

6a. Harry Dakos. Lot 4, block 8 in Truth or Consequences. Dug unused water-table well in alluvium, diameter 24 inches, depth 6 feet. Land-surface datum is 4,240.71 feet above msl. Highest water level 1.26 above lsd, June 2, 1952; lowest 2.73 below lsd, Oct. 27-29, 1953. Records available: 1941-54.

Daily highest water level, above and below lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	-2.63	-2.59	-2.55	-2.14	e-2.04	-1.95	-2.31	-2.31	-1.78	-2.68	-2.55	-2.42
2	2.63	2.59	2.55	2.14	e2.05	1.99	2.31	2.32	1.90	2.68	2.55	2.42
3	2.63	2.59	2.55	2.13	2.06	2.02	2.31	2.33	1.99	2.67	2.55	2.41
4	2.62	2.59	2.55	2.11	2.06	2.05	2.31	2.34	2.08	-2.67	2.55	2.40
5	2.62	2.59	2.55	2.09	2.07	2.09	2.31	-2.31	2.17	+.95	2.55	2.40
6	2.62	2.58	2.55	2.08	2.07	2.12	2.32	+.50	2.25	+.95	2.55	2.39
7	2.62	2.58	2.55	2.07	2.08	2.18	2.32	+.91	2.32	-.50	2.54	2.39
8	2.61	2.58	2.55	2.06	2.09	2.17	2.32	.78	2.37	.96	2.54	e2.39
9	2.61	2.58	2.51	2.05	2.10	2.19	2.32	+.27	2.42	1.20	2.53	e2.39
10	2.61	2.57	2.46	2.04	2.12	2.21	2.30	-.36	2.46	1.40	2.53	e2.38
11	2.61	2.57	2.41	2.04	2.13	2.22	2.28	.68	2.50	1.55	2.52	e2.38
12	2.61	2.56	2.38	2.03	2.14	2.23	2.26	1.00	2.53	1.68	2.51	2.38
13	2.61	2.56	....	2.02	2.15	2.23	2.25	1.23	2.56	1.80	e2.51	2.38
14	2.61	2.55	2.35	2.02	2.16	2.23	2.24	1.43	2.58	1.90	2.50	e2.37
15	2.61	2.55	2.38	2.02	2.17	2.23	2.23	1.60	2.59	2.00	2.49	e2.37
16	2.61	2.55	2.36	2.02	-2.18	2.23	2.21	1.73	2.61	2.08	2.48	e2.37
17	2.61	2.56	2.35	2.01	+1.24	2.24	2.20	1.83	2.63	2.16	2.47	e2.37
18	2.61	2.56	2.33	2.01	1.22	2.24	2.18	1.96	2.64	2.22	h2.47	e2.36
19	2.60	2.56	2.31	2.00	1.02	2.24	2.17	2.02	2.65	2.27	2.47	2.36
20	2.59	2.56	2.29	2.00	.80	2.25	2.17	2.10	2.66	2.32	2.47	2.36
21	2.59	2.56	2.26	2.00	+.26	2.26	2.17	2.17	2.67	2.37	2.47	2.35
22	2.59	2.56	2.24	2.00	-.50	2.26	2.17	2.22	2.69	2.40	2.46	e2.35
23	2.59	2.56	2.22	2.00	.85	2.27	2.18	-2.26	2.70	2.43	e2.46	e2.34
24	2.59	2.56	2.21	2.00	1.08	2.27	2.20	+.37	2.70	2.45	e2.45	e2.34
25	2.59	2.56	2.20	2.01	1.28	2.28	2.21	+.37	2.69	2.47	e2.45	2.33

6a--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	-2.59	-2.55	-2.20	-2.01	-1.44	-2.26	-2.22	-0.10	-2.68	-2.49	-e2.44	-2.32
27	2.59	2.55	2.19	2.01	1.58	2.29	2.24	.76	2.67	2.51	e2.44	2.31
26	2.60	2.55	2.17	2.02	1.67	2.29	2.26	1.08	2.67	2.53	2.43	e2.31
29	2.59		2.16	2.02	1.77	2.30	2.28	1.32	2.67	2.54	2.43	e2.30
30	2.59		2.16	e2.03	1.83	2.30	2.29	1.50	2.67	2.54	2.42	e2.30
31	2.59		2.15		1.90		2.30	1.65		2.55		e2.30

e Estimated.
h Tape measurement.

25. Jim Knox. Lot 4, block 93 in Truth or Consequences. Dug unused artesian well in Magdalena group, size 5 by 5 feet, depth 20 feet. Land-surface datum is 4,242.20 feet above msl. Highest water level 6.60 below lsd, May 13, 1942; lowest 8.89 below lsd, Nov. 15, 1951. Records available: 1939-53. Daily or bimonthly measurements will not be made in the future. An annual measurement will be made but will not be published in the water-level report.

Torrance and Santa Fe Counties

Estancia Valley.--The Estancia Valley irrigation area lies within a closed physiographic and structural basin east of the Sandia and Manzano Mountains in central New Mexico. The basin, about 50 miles from north to south and about 25 miles from west to east, extends from southern Santa Fe County into south-central Torrance County. About 80 percent of the area under irrigation is in Torrance County. The Estancia ground-water basin, which includes about 1,482 square miles, was declared by order of the State Engineer on January 31, 1950. Water levels in observation wells in the irrigated area have been measured periodically since 1941. In 1954, water levels were measured in 115 wells in February, 45 wells in May, 44 wells in August, and 48 wells in November. Well 7.8.27.221, about 3 miles northwest of Estancia, has been equipped with a recording gage since 1945. The February water-level measurements, most of which are not listed in this report, were used to prepare the map showing the net change in water level in 1954.

Precipitation within Estancia Valley is the source of ground-water recharge whether by direct penetration or by runoff from the surrounding higher lands penetrating into the water-bearing formation. The amount of ground water pumped for irrigation depends not only upon the total annual precipitation but also upon its distribution and intensity, particularly during the growing season. Deficient precipitation during the growing season results in increased use of ground water for irrigation. Conversely, normal or above-normal precipitation results in decreased use of ground water for irrigation. An interpretation of changes of ground-water levels is therefore dependent in part on a knowledge of these factors. Precipitation during 1954 at the 4 weather stations in Estancia Valley for which there are complete records averaged about 72 percent of normal. The precipitation at Estancia was 9.61 inches, 2.98 inches below normal; at McIntosh 10.41 inches, 2.83 inches below normal; at Mountainair an estimated 11.43 inches, 4.21 inches below normal; and at Tajique 11.67 inches, 7.87 inches below normal. In addition, the precipitation at Otto (except for October, November, and December, for which there are no records) was 8.89 inches, 1.79 inches below normal. During the growing season (April through September) precipitation at 5 weather stations for which there are complete records averaged about 76 percent of normal. The precipitation records thus indicate that the total recharge to the ground-water body in Estancia Valley in 1954 probably was less than average and that the amount of water required for the irrigation of crops was above average.

It is estimated that in 1954 about 23,000 acres of land in Estancia Valley was irrigated from wells and that about 33,000 acre-feet of water was pumped. The estimated pumpage in 1953 and 1952, when an estimated 21,000 acres was irrigated each year, was 36,500 and 30,000 acre-feet, respectively. The decrease in pumpage in 1954 was partly due to the amount of precipitation, about 76 percent of normal, during the growing season. In 1953 and 1952 it was about 60 percent and 55 percent of normal, respectively. The decrease in pumpage in 1954 probably would have been greater if additional lands had not been developed for irrigation, especially in the northern part of the valley. Because of the decrease in pumping, the net annual declines in water level in 1954 were about 10 percent less than in 1953. The areas in Estancia Valley in which ground-water levels declined from February 1954 to February 1955 are shown in figure 64. During this period, levels declined more than 1 foot under a total area of about 180 square miles as compared with 222 square miles in 1953 and 194 square miles in 1952.

The greatest net decline in 1954 was in the area centered about 6 miles north-northwest of Estancia. There, and in the area of decline centered about 2 miles northwest of Estancia, ground-water levels in 1954 declined more than 2 feet under a total area of about 37 square miles as compared to about 50 square miles in 1953. In the area centered about 6 miles north-northwest of Estancia, they declined more than 3 feet under an area of about 19 square miles, more than 4 feet under about 11 square miles, and more than 5 feet under about 6 square miles. The maximum decline recorded in this area in 1954 was about 8.2 feet, which reflects a localized condition of the aquifer penetrated by only a few wells.

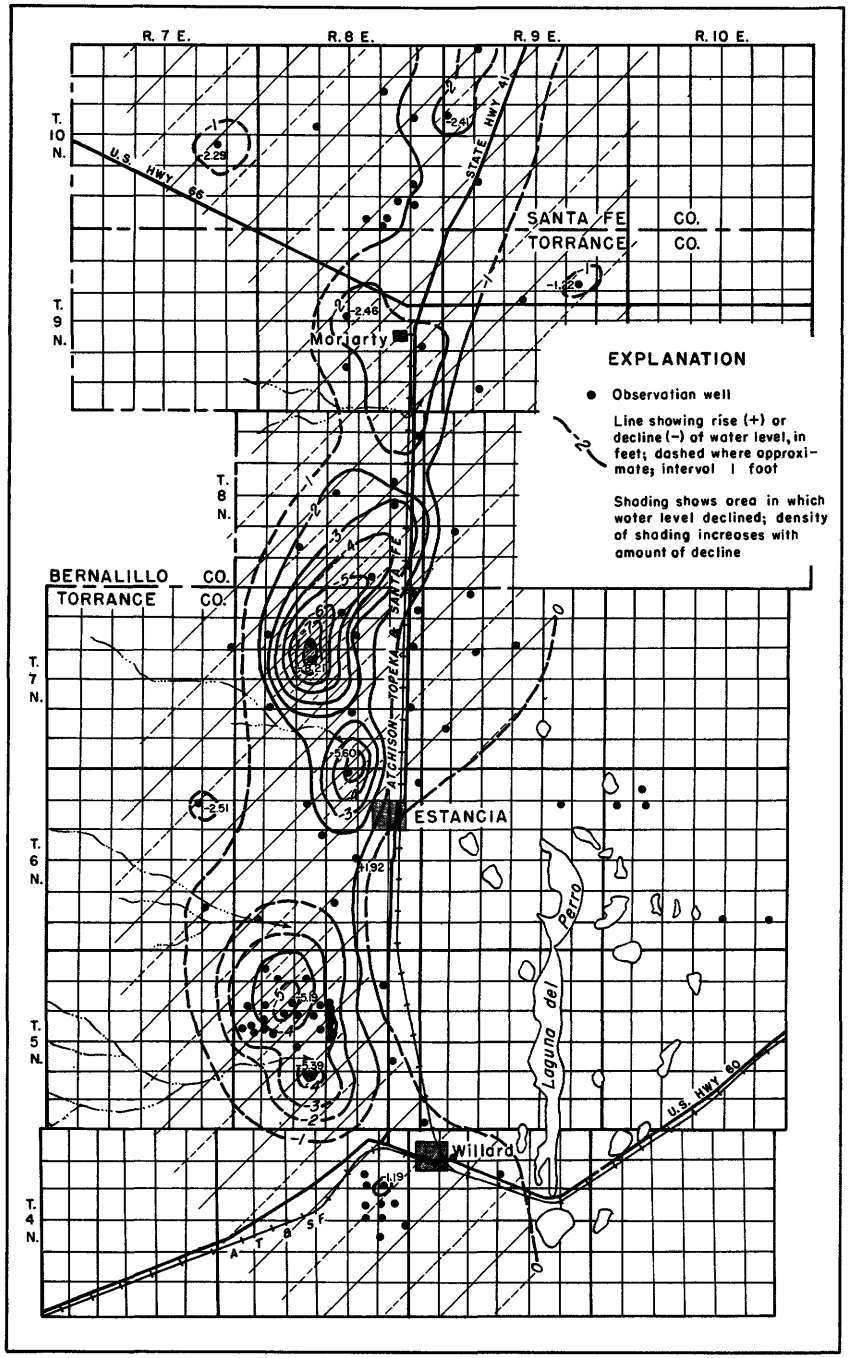


Figure 64.--Change in ground-water level from February 1954 to February 1955 in Estancia Valley, Torrance County, N. Mex.

The next greatest net annual decline was in the heavily pumped area southwest of Estancia, where it was more than 2 feet under an area of about 24 square miles, more than 3 feet under about 14 square miles, and more than 4 feet under about 5 square miles. The maximum decline in this area in 1954 was about 5.2 feet as compared to about 2.8 feet in 1953, when the general decline was only about 1 to 2 feet.

In the vicinity of Moriarty in the northern part of the valley, water levels in 1954 declined more than 2 feet under an area of almost 12 square miles. In 1953 water levels had declined more than 2 feet under about 5 square miles about 3 miles north of Moriarty. In 1954 a small depression in the water level developed about 7 to 10 miles north of Moriarty, probably the result of increased development in the northern part of Estancia Valley. Water levels in this area declined more than 2 feet under at least 3 square miles; the maximum measured decline was about 2.4 feet. In 1953 the declines in this area averaged about 1.5 feet. Water levels in the area southwest of Willard showed no appreciable change.

From February 1950 to February 1955, water levels in most of the valley where ground water is used for irrigation declined more than 2 feet under about 450 square miles and more than 8 feet under about 110 square miles. Declines greater than 10 feet were generally restricted to the areas of greatest decline in 1954. A maximum net decline of more than 19 feet occurred in a few wells in the heavily pumped area from about 5 to 7 miles north and north-northwest of Estancia. The water levels in 2 wells about 5 miles north-northwest of Estancia indicated declines of 35 to 39 feet during the 5-year period. However, these wells reflect unique conditions, as they were drilled into limestone cavities or solution channels and tap confined or partly confined water in a limestone of the Magdalena group which underlies the valley fill in that area. When the well was drilled, the artesian pressure caused the water level to rise about 53 feet to within 11 feet of the ground surface. Continued heavy pumping in this area caused the water levels to decline more rapidly than in areas in which artesian pressures were not encountered.

In the area centered about 2 miles northwest of Estancia, the maximum lowering for the 5-year period was about 14 feet under less than 1 square mile. In the heavily pumped area about 7 miles southwest of Estancia where the wells are closely spaced, the water levels declined more than 12 feet under about 4 square miles, and a maximum decline of about 13.5 feet was observed. In this area most of the water levels declined about 11 to 13 feet between 1950 and 1955. In southern Santa Fe County north of Moriarty most water levels declined 6 to 7 feet, and the maximum decline was about 7.7 feet. West of this area and about 1.5 miles north of Edgewood, a small depression having a maximum decline of about 8.7 feet developed during the period 1950 to 1955. The declines in water levels a few miles southwest of Willard were not appreciable between 1950 and 1955.

As ground water in Estancia Valley is pumped from storage and the precipitation has been deficient through most of the years from 1950 to 1955, the declines of water level have remained great. In the future the annual declines are expected to become less for the same development.

Torrance County

Estancia Valley

4.8.11.233. R. B. Slease. Drilled unused water-table well in valley fill, diameter 14 inches. Highest water level 81.31 below lsd, Feb. 15, May 2, 1951; lowest 82.67 below lsd, Nov. 4, 1954. Records available: 1950-54. Feb. 16, 81.93; May 6, 81.90; Aug. 21, 82.57; Nov. 4, 82.67.

4.8.11.433. R. B. Slease. Drilled unused water-table well in valley fill, diameter 16 inches, reported depth 180 feet, cased to 160. Highest water level 82.93 below lsd, May 2, 1951; lowest 84.52 below lsd, Aug. 21, 1954. Records available: 1950-54. Feb. 16, 83.49; May 6, 83.49; Aug. 21, 84.52; Nov. 4, 84.39.

4.8.12.333. R. B. Slease. Drilled unused water-table well in valley fill, diameter 16 inches, reported depth 272 feet, cased to 212(?). Highest water level 70.53 below lsd, Aug. 2, 1950; lowest 83.43 below lsd, Aug. 21, 1954. Records available: 1950-54. Feb. 16, 71.43; Aug. 21, 83.43; Nov. 4, 72.98.

4.8.13.133. R. B. Slease. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 225 feet, cased to 197. Land-surface datum is 6,140 feet above msl. Highest water level 79.37 below lsd, Feb. 15, 1951; lowest 83.65 below lsd, Aug. 21, 1954. Records available: 1949-54. Feb. 16, 79.80; May 6, 80.34; Aug. 21, 83.65; Nov. 4, 81.09.

4.8.13.233. R. B. Slease. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 216 feet, cased to 216. Land-surface datum is 6,130 feet above msl. Highest water level 70.82 below lsd, Feb. 15, 1951; lowest 75.46 below lsd, Aug. 7, 1952. Records available: 1950-54. Feb. 16, 71.36; May 6, 74.86; Nov. 4, 72.70.

4.8.13.333. R. B. Slease. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 230 feet, cased to 230. Highest water level 79.62 below lsd, May 2, 1951; lowest 81.75 below lsd, Aug. 7, 1952. Records available: 1950-54. Feb. 16, 80.14; May 6, 108.90, pumping; Aug. 28, 95.52, pumped recently; Nov. 4, 81.46.

4.8.14.233. R. B. Slease. Drilled unused water-table well in valley fill, diameter 16 inches. Highest water level 91.96 below lsd, Feb. 15, 1951; lowest 93.69 below lsd, Aug. 21 1954. Records available: 1950-54. Feb. 16, 92.45; May 6, 92.44; Aug. 21, 93.69; Nov. 4, 93.54.

4.8.14.433. R. B. Slease. Drilled unused water-table well in valley fill, diameter 16 inches, depth 211 feet, cased to 211(?). Highest water level 93.81 below lsd, May 19, 1950; lowest 95.51 below lsd, Aug. 28, 1954. Records available: 1950-54. Feb. 16, 94.32; May 6, 94.31; Aug. 28, 95.51; Nov. 4, 95.35.

4.8.24.133. R. B. Slease. Drilled irrigation water-table well in valley fill, diameter 20 to 16 inches, reported depth 230 feet, cased to 100. Highest water level 84.46 below lsd, May 4, 1949; lowest 87.13 below lsd, Aug. 28, 1954. Records available: 1949-54. Feb. 16, 85.22; May 6, 85.55; Aug. 28, 87.13; Nov. 4, 86.43.

4.9.10.133. Homer Arnn. Drilled stock water-table well in valley fill, diameter 6 inches. Land-surface datum is 6,080 feet above msl. Highest water level 17.05 below lsd, May 2, 1951; lowest 18.46 below lsd, Oct. 25, 1948. Records available: 1941-54. Feb. 16, 17.49; Nov. 4, 18.15.

5.8.5.344. O. R. Ethridge. Drilled irrigation water-table well in valley fill, diameter 18 inches, reported depth 200 feet, cased to 118. Highest water level 51.14 below lsd, Feb. 18, 1947; lowest 71.77 below lsd, Nov. 3, 1954. Records available: 1947-54. Feb. 18, 64.16; May 5, 101.90, pumping; Aug. 23, 100.07, pumping; Nov. 3, 71.77.

5.8.8.424. A. T. Austin. Drilled irrigation water-table well in valley fill, diameter 20 inches, reported depth 204 feet, cased to 98. Highest water level 62.03 below lsd, Mar. 23, 1948; lowest 83.50 below lsd, Nov. 3, 1954. Records available: 1948-54. Feb. 18, 73.94; May 6, 96.02, pumping; Aug. 23, 117.33, pumping; Nov. 3, 83.50.

5.8.10.331a. Frank Craven. Drilled irrigation water-table well in valley fill, diameter 18 inches, reported depth 158 feet, cased to 91. Highest water level 19.79 below lsd, Mar. 22, 1948; lowest 39.50 below lsd, Nov. 3, 1954. Records available: 1947-54. Feb. 17, 32.16; May 6, 49.89, pumping; Aug. 23, 52.45, pumping; Nov. 3, 39.50.

5.8.15.131. Joe Begley. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 125 feet, cased to 59. Highest water level 13.68 below lsd, May 8, 1945; lowest 37.70 below lsd, Aug. 17, 1953. Records available: 1945-54. Feb. 17, 26.90; Aug. 23, 66.76, pumping; Nov. 4, 34.84.

5.8.17.113. Madison Davis. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 148 feet, cased to 59. Highest water level 43.29 below lsd, May 8, 1945; lowest 60.36 below lsd, May 26, 1953. Records available: 1945-54. Feb. 18, 57.98.

5.8.17.311a. Ray Brown. Drilled irrigation water-table well in valley fill. Highest water level 29.50 below lsd, Mar. 23, 1948; lowest 67.49 below lsd, Aug. 22, 1951. Records available: 1947-54. Feb. 17, 41.19; May 6, 46.16, nearby well being pumped; Aug. 23, 77.05, pumping; Nov. 3, 46.88.

5.8.18.233. S. W. Hodgson. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 153 feet, cased to 80. Highest water level 38.69 below lsd, Feb. 18, 1947; lowest 58.34 below lsd, Aug. 17, 1953. Records available: 1946-54. Feb. 17, 48.25; Nov. 3, 56.33.

5.8.21.111. R. B. Ford. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 169 feet, cased to 60. Highest water level 27.23 below lsd, Feb. 18, 1947; lowest 44.12 below lsd, Nov. 4, 1954. Records available: 1946-54. Feb. 17, 40.26; May 6, 40.34; Nov. 4, 44.12.

5.8.24.311. E. B. Wallace. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 200 feet, cased to 150. Land-surface datum is 6,115 feet above msl. Highest water level 21.93 below lsd, Feb. 20, 1946; lowest 26.11 below lsd, May 28, 1952. Records available: 1946-54. Feb. 17, 23.63; May 6, 56.49, pumping; Aug. 28, 56.70, pumping; Nov. 3, 24.71.

5.9.31.331. Homer Arnn. Drilled unused water-table well in valley fill, diameter 24 inches, reported depth 210 feet, cased to 50. Land-surface datum is 6,108 feet above msl. Highest water level 32.12 below lsd, Nov. 2, 1950; lowest 34.10 below lsd, Feb. 13, 1941. Records available: 1941-54. Feb. 16, 33.51; May 6, 33.18; Aug. 28, 33.44; Nov. 4, 33.59.

6.8.1.111. Pat Homan. Drilled unused water-table well in valley fill and Magdalena group, diameter 18 inches, reported depth 450 feet. Highest water level 21.95 below lsd, Feb. 9, 1950; lowest 27.68 below lsd, Aug. 10, 1948. Records available: 1948-54. Feb. 25, 25.23; May 5, 25.37; Aug. 19, 25.85; Nov. 13, 25.77.

6.8.3.221. Ellison Timmins. Drilled unused water-table well in valley fill, diameter 18 to 20 inches, reported depth 195 feet, cased to 195. Land-surface datum is 6,160 feet above msl. Highest water level 26.09 below lsd, Apr. 8, Aug. 13, 1942; lowest 44.27 below lsd, Nov. 3, 1954. Records available: 1941-54. Feb. 25, 37.92; May 5, 38.90; Aug. 19, 43.44; Nov. 3, 44.27.

6.8.15.444. Estancia Cemetery. Drilled irrigation water-table well in valley fill. Land-surface datum is 6,155 feet above msl. Highest water level 29.90 below lsd, June 18, 1943; lowest 35.45 below lsd, Nov 3, 1954. Records available: 1941-54. Feb. 18, 33.87; May 5, 34.09, pumping; Aug. 22, 35.11, pumping; Nov. 3, 35.45.

6.8.27.134. R. M. Spruill. Drilled stock water-table well in valley fill, diameter 6 inches, reported depth 100 feet, cased to 100. Land-surface datum is 6,164 feet above msl. Highest water level 19.47 below lsd, Apr. 8, 1942; lowest 34.79 below lsd, Nov. 19, 1952. Records available: 1941-54. Feb. 18, 26.10; May 5, 27.52, pumping; Aug. 22, 31.23, pumping; Nov. 3, 28.30.

6.8.32.212. O. R. Ethridge. Drilled irrigation water-table well in valley fill, diameter 18 inches, reported depth 209 feet, cased to 84. Highest water level 23.22 below lsd, Feb. 18, 1947; lowest 35.21 below lsd, Nov. 3, 1954. Records available: 1947-54. May 5, 71.08, pumping; Aug. 22, 71.04, pumping; Nov. 3, 35.21.

6.9.11.211. H. E. Means. Drilled irrigation water-table well in valley fill, diameter 18 inches, reported depth 148 feet. Highest water level 5.07 below lsd, May 4, 1949; lowest 9.60 below lsd, May 5, 1954. Records available: 1949-54. Feb. 16, 7.65; May 5, 9.60; Aug. 19, 9.13; Nov. 3, 8.54.

6.10.5.312. Berkshire Bros. Drilled unused water-table well in valley fill(?), diameter 16 inches, reported depth 186 feet. Highest water level 6.18 below lsd, Aug. 22, 1951; lowest 11.04 below lsd, Feb. 16, 1949. Records available: 1949-54. Feb. 16, 10.53; May 5, 6.98, nearby well being pumped; Aug. 19, 9.93; Nov. 3, 10.40.

6.10.5.312a. Berkshire Bros. Drilled irrigation water-table well in valley fill(?), diameter 20 inches. Highest water level 11.54 below lsd, Feb. 8, 1950; lowest 17.10 below lsd, May 26, 1953. Records available: 1950-54. Feb. 16, 13.46; May 5, 16.58, pumping; Aug. 19, 14.41; Nov. 3, 14.21.

6.10.7.112. Owner unknown. Stock water-table well in valley fill, diameter 6 inches. Land-surface datum is 6,080 feet above msl. Highest water level 5.74 below lsd, Feb. 16, 1949; lowest 11.68 below lsd, May 27, 1952. Records available: 1949-54. Pumping. Feb. 16, 8.46; May 5, 11.70; Aug. 19, 9.20; Nov. 3, 9.30.

6.10.8.112. J. M. Milburn & Son. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 169 feet, cased to 73. Highest water level 7.90 below lsd, Sept. 2, 1948; lowest 15.83 below lsd, Aug. 22, 1951. Records available: 1948-54. Feb. 16, 11.07; Aug. 19, 11.96; Nov. 3, 11.81.

7.7.12.444. C. B. Roland. Drilled carbon dioxide test water-table(?) well in Magdalena group, diameter 7 inches, reported depth 1,359 feet, cased to 60. Land-surface datum is 6,349 feet above msl. Highest water level 41.37 below lsd, Feb. 19, 1947; lowest 48.22 below lsd, Aug. 22, 1954. Records available: 1941-54. Feb. 25, 47.78; May 5, 47.91; Aug. 22, 48.22; Nov. 1, 48.11.

7.8.1.231. Myrtle Homan Estate. Drilled stock water-table well in valley fill, diameter 8 inches, reported depth 56 feet, cased to 20. Land-surface datum is 6,142 feet above msl. Highest water level 25.10 below lsd, Feb. 20, 1947; lowest 33.42 below lsd, Nov. 1, 1954. Records available: 1941-54. Feb. 26, 31.74; May 4, 32.20; Aug. 22, 33.15; Nov. 1, 33.42.

7.8.12.433a. Arthur Schmidt. Drilled unused water-table well in valley fill, diameter 12 inches, reported depth 103 feet. Highest water level 21.09 below lsd, Feb. 15, 1951; lowest 30.37 below lsd, Aug. 23, 1951. Records available: 1947-54. Feb. 26, 27.07.

7.8.13.212. H. J. Austin, owner, lessee, Amos Turner. Drilled irrigation well. Records available: 1954. May 5, 65.60, pumping; Aug. 22, 66.82, pumping; Nov. 1, 31.62.

7.8.24.431. R. T. Floyd. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 300 feet. Highest water level 21.77 below lsd, May 28, 1947; lowest 34.31 below lsd, Aug. 22, 1952. Records available: 1947-54. Feb. 25, 25.09; Aug. 28, 118.36, pumping; Nov. 4, 27.55.

7.8.27.221. F. C. Pace. Drilled unused water-table well in valley fill, diameter 6 inches. Land-surface datum is 6,185 feet above msl. Highest water level 19.06 below lsd, May 7-10, 1947; lowest 31.42 below lsd, Sept. 22-23, 1954. Records available: 1941-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	26.13	26.30	26.20	28.34	29.50	30.04	30.72	31.07	.....	29.27
2	.....	.....	26.08	26.30	26.10	28.42	29.51	30.10	30.80	31.03	.....	29.24
3	.....	.....	26.06	26.34	26.09	28.49	h29.50	30.14	30.83	31.00	.....	29.20
4	.....	.....	26.12	26.36	26.01	28.56	29.52	30.16	30.86	30.95	.....	29.18
5	.....	.....	26.12	26.36	25.96	28.62	29.55	30.23	30.92	30.90	.....	29.21
6	.....	.....	26.12	26.36	26.02	28.66	29.59	30.27	30.96	30.87	.....	29.17
7	.....	.....	26.15	26.32	26.14	28.72	29.64	30.32	31.00	30.84	29.71	29.15
8	.....	.....	26.20	26.32	26.18	28.79	29.70	30.35	31.04	.....	29.69	29.16
9	.....	.....	26.23	26.38	26.28	28.83	29.76	30.39	31.10	.....	29.67	29.13
10	.....	.....	26.24	26.36	26.42	28.88	29.80	30.42	31.14	.....	29.65	29.11
11	.....	.....	26.22	26.34	26.54	28.96	29.83	30.46	31.18	.....	29.63	29.11
12	.....	.....	26.17	26.34	26.67	29.00	29.86	30.51	31.24	.....	29.57	29.11
13	.....	.....	26.15	26.38	26.80	29.06	29.87	30.56	31.28	.....	29.56	29.08
14	.....	h25.91	26.19	26.40	26.86	29.10	29.87	30.53	31.32	.....	29.55	29.08
15	.....	25.94	26.19	26.33	26.93	29.14	29.86	.....	31.34	.....	29.52	29.02
16	.....	25.98	26.22	26.33	27.00	29.20	29.84	.....	31.34	.....	29.51	29.02
17	.....	26.05	26.26	26.37	27.07	29.24	29.81	.....	31.34	.....	29.50	29.04
18	.....	26.08	26.25	26.42	27.13	29.28	29.77	.....	31.34	.....	29.48	29.03
19	.....	26.05	26.24	26.43	27.17	29.30	29.76	.....	31.36	.....	29.46	29.02
20	.....	26.05	26.24	26.42	27.20	29.31	29.78	.....	31.38	.....	29.43	28.98
21	.....	26.05	26.26	26.42	27.24	29.31	29.86	.....	31.40	.....	29.42	28.96
22	.....	26.08	26.28	26.43	27.30	29.30	29.88	30.15	31.42	.....	29.42	28.93
23	.....	26.07	26.28	26.43	27.40	29.30	29.92	30.24	31.42	.....	29.39	28.93
24	.....	26.10	26.25	26.41	27.46	29.29	29.94	30.26	31.39	.....	29.37	28.91
25	.....	26.12	26.24	26.41	27.56	29.30	29.95	30.32	31.36	.....	29.34	28.89
26	.....	26.14	26.25	26.38	27.66	29.30	29.96	30.37	31.33	.....	29.31	28.88
27	.....	26.06	26.25	26.38	27.78	29.33	30.00	30.42	31.30	.....	29.29	28.88
28	.....	26.05	26.28	26.36	27.91	29.38	30.00	30.46	31.23	.....	29.30	28.90
29	.....		26.33	26.32	28.02	29.41	30.00	30.54	31.18	.....	29.25	28.88
30	.....		26.30	26.31	28.14	29.45	30.02	30.60	31.14	.....	29.26	28.87
31	.....		26.28		28.25		.....	30.65		.....		28.85

h Tape measurement.

7.8.34.222. Lilburn Homan. Drilled irrigation water-table well in valley fill, diameter 18 inches, reported depth 129 feet, cased to 109. Highest water level 18.51 below lsd, May 29, 1947; lowest 38.93 below lsd, Feb. 25, 1954. Records available: 1947-54. Feb. 25, 38.93; May 5, 46.65, pumping; Aug. 22, 96.14, pumping.

8.8.12.212. Lawrence Groff. Drilled irrigation water-table well in valley fill, diameter 20 inches, reported depth 180 feet. Highest water level 29.74 below lsd, May 20, 1948; lowest 45.97 below lsd, Nov. 1, 1954. Records available: 1948-54. Feb. 27, 41.33; May 4, 105.57, pumping; Aug. 20, 101.64, pumping; Nov. 1, 45.97.

8.8.15.343. Ed. W. Davis. Dug stock and domestic water-table well in valley fill, reported depth 102 feet. Highest water level 97.00 below lsd, Feb. 23, 1950; lowest 106.24 below lsd, Nov. 21, 1954. Records available: 1950-54. Feb. 27, 104.52; May 4, 105.02; Aug. 20, 105.69; Nov. 1, 106.24.

8.8.26.222. Owner unknown. Drilled stock water-table well in valley fill, depth 20 feet. Land-surface datum is 6,188 feet above msl. Highest water level 6.50 below lsd, Sept. 6, 1946; lowest 20.68 below lsd, Nov. 1, 1954. Records available: 1941-54. Feb. 26, 27.57, pumping; May 4, 19.43, pumping; Aug. 20, 19.95; Nov. 1, 20.68.

8.8.28.311. Cecil Thomas. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 275 feet, cased to 154. Highest water level 134.53 below lsd, Feb. 13, 1952; lowest 160.29 below lsd, Aug. 22, 1954. Records available: 1951-54. Feb. 26, 141.34; May 4, 139.32; Aug. 22, 160.29; Nov. 1, 148.02.

8. 8. 35. 322. A. C. Hibner. Drilled irrigation water-table well in valley fill(?), diameter 16 inches, reported depth 228 feet, cased to 110. Land-surface datum is 6,240 feet above msl. Highest water level 50. 12 below lsd, May 28, 1947; lowest 76. 60 below lsd, Nov. 1, 1954. Records available: 1947-54. Feb. 26, 69. 26; May 4, 93. 94, pumping; Aug. 22, 94. 55, pumping; Nov. 1, 76. 60.

9. 8. 11. 233. Manuel Lujan. Drilled irrigation water-table well in valley fill(?), reported depth 320 feet. Highest water level 56. 80 below lsd, May 20, 1948; lowest 64. 04 below lsd, Aug. 19, 1952. Records available: 1948-54. Feb. 27, 62. 26; May 4, 97. 71, pumping; Aug. 28, 105. 54, pumping.

9. 9. 32. 131a. G. L. Dean. Drilled unused water-table well in valley fill(?), diameter 10 inches, reported depth 72 feet. Highest water level 5. 70 below lsd, Feb. 20, 1947; lowest 10. 50 below lsd, Nov. 1, 1954. Records available: 1943-54. Feb. 27, 9. 67; May 4, 9. 98; Aug. 20, 9. 26; Nov. 1, 10. 50.

Santa Fe County

Estancia Valley

10. 7. 23. 212. G. F. Mosley. Drilled irrigation water-table(?) well in Magdalena(?) group, diameter 12 inches, reported depth 200 feet. Highest water level 137. 18 below lsd, Feb. 17, 1949; lowest 148. 20 below lsd, Nov. 5, 1954. Records available: 1948-54. Feb. 28, 140. 25, measurement uncertain; May 4, 140. 19; Aug. 28, 141. 75; Nov. 5, 148. 20.

10. 8. 13. 133. W. R. Irby. Drilled irrigation water-table well in valley fill, reported depth 518 feet. Highest water level 86. 75 below lsd, Feb. 22, 1950; lowest 96. 61 below lsd, Aug. 20, 1952. Records available: 1950-54. Feb. 28, 92. 05; May 4, 142. 60, pumping; Aug. 28, 124. 93, pumping; Nov. 5, 95. 10.

10. 8. 17. 424. Kenneth Martin. Drilled unused water-table well in valley fill, diameter 6 inches, reported depth 150 feet. Highest water level 135. 44 below lsd, May 3, 1949; lowest 140. 13 below lsd, Nov. 20, 1951. Records available: 1949-54. Feb. 28, 138. 35; May 4, 138. 63; Nov. 5, 139. 14.

10. 8. 25. 311. Floyd Irvin. Drilled irrigation water-table well in valley fill(?), diameter 16 inches, reported depth 238 feet, cased to 40. Highest water level 72. 85 below lsd, Feb. 17, 1949; lowest 91. 84 below lsd, Aug. 28, 1954. Records available: 1948-54. Feb. 27, 80. 08; May 4, 84. 85; Aug. 28, 91. 84; Nov. 4, 82. 83.

10. 8. 35. 312. Valley Irrigation Co. Drilled irrigation water-table well in valley fill. Highest water level 65. 19 below lsd, May 20, 1948; lowest 74. 99 below lsd, Nov. 5, 1954. Records available: 1948-54. Feb. 27, 71. 67; May 4, 100. 50, pumping; Aug. 28, 105. 02, pumping; Nov. 5, 74. 99.

10. 8. 35. 331. Valley Irrigation Co. Drilled irrigation water-table well in valley fill. Highest water level 65. 12 below lsd, Feb. 7, 1950; lowest 74. 22 below lsd, Nov. 5, 1954. Records available: 1948-54. Feb. 27, 70. 92; May 4, 96. 64, pumping; Aug. 28, 83. 17, nearby well being pumped; Nov. 5, 74. 22.

10. 8. 36. 111. Valley Irrigation Co. Drilled irrigation water-table well in Glorieta(?) sandstone member of San Andres formation, diameter 13 inches, reported depth 309 feet, cased to 231. Highest water level 34. 91 below lsd, Sept. 15, 1947, Mar. 25, 1948; lowest 54. 90 below lsd, Aug. 19, 1953. Records available: 1947-54. Feb. 27, 42. 16; May 4, 48. 29; Nov. 7, 41. 35.

10. 9. 29. 130. Glen Terry. Drilled irrigation water-table well in Glorieta sandstone member of San Andres formation, diameter 14 inches, reported depth 200 feet, cased to 140. Highest water level 55. 13 below lsd, Feb. 18, 1949; lowest 68. 54 below lsd, Aug. 28, 1954. Records available: 1949-54. Feb. 28, 61. 80; May 4, 68. 80, pumping; Aug. 28, 68. 54; Nov. 5, 64. 53.

Valencia County

Grants-Bluewater area. --The Grants-Bluewater area, in north-central Valencia County, is on the northeast flank of the Zuni Mountains about 80 miles west of Albuquerque. Surface water stored in Bluewater Reservoir is distributed by the Bluewater-Toltec Irrigation District, which includes most of the acreage irrigated in the Grants-Bluewater area. Water in the reservoir from melting snows and summer rains has been insufficient for irrigation needs during most years. Irrigation wells, originally drilled for supplemental water, have increased in number since the first successful well was drilled in August 1944 and have become the principal source of water for irrigation on district and other lands. Water levels in observation wells in the area have been measured periodically since 1946. In 1954 they were measured in 34 wells in February and in about 27 wells at bimonthly intervals. The net change in ground-water storage from year

to year is determined by comparing the February measurements of water levels. The seasonal fluctuations due to pumping and recharge are reflected in the bimonthly measurements. A recording gage has been maintained since November 1946 on well 12. 11. 9. 222, about 2. 5 miles north-northwest of Bluewater. The principal water-bearing formation in the Grants-Bluewater area is the San Andres formation of Permian age. Recharge to the San Andres is primarily surface water from Bluewater Reservoir that leaks from the lower end of Bluewater Canyon and from the irrigation canals. Recharge to the aquifer results also from precipitation upon the area of outcrop of the San Andres in the Zuni Mountains and from precipitation that penetrates through the alluvium and lava in parts of the valley. Some recharge is derived from the return of irrigation water applied to the land.

Precipitation in 1954, as reported by the U. S. Weather Bureau, was 8. 43 inches or about 83 percent of the normal 10. 10 inches at Bluewater, an estimated 9. 86 inches at Grants, and 10. 81 inches at the Grants CAA Airport. Precipitation at Bluewater during the growing season (April through September) was 6. 63 inches, or about 92 percent of normal. However, during this period rainfall at Bluewater was below normal each month except July and September, when it was 0. 14 inch and 1. 26 inches above normal. The precipitation in September, slightly more than half of which fell in the last week, accounted for nearly 37 percent of the total precipitation during the 1954 growing season. Precipitation at Grants during the growing season was 8. 41 inches, or about 85 percent of the annual total, and at the Grants CAA Airport, 9. 25 inches, or about 86 percent of the annual total.

Surface water for irrigation was not released from Bluewater Reservoir in 1954, according to the records at the gaging station in Bluewater Canyon below Bluewater Dam. On the basis of electric-power records for 20 of the 23 used irrigation wells and estimates for the other 3 irrigation wells, the pumpage of ground water in 1954 is estimated to have been about 12, 600 acre-feet used on 5, 000 acres. This pumpage is comparable to that of 1953, when about 12, 000 acre-feet was pumped for distribution over about 6, 000 acres.

The declines in ground-water levels were considerably less in 1954 than in 1953. However, all the wells showed net declines except well 12. 11. 14. 213, which showed no net change. New record-low water levels were established in 1954, as in 1953, in all wells in which records are comparable. In 1954, water levels in most observation wells in the area from Bluewater southward declined about 0. 5 foot to about 1. 5 feet, whereas in 1953 they declined 3 to 4 feet. In the area from Bluewater northward to near the mouth of Bluewater Canyon, the declines ranged from about 3 to 6 feet, whereas in 1953 they ranged from about 3 to nearly 11 feet. The largest net decline in 1954, 6. 0 feet, occurred in well 12. 11. 5. 413 near the mouth of Bluewater Canyon. In recorder well 12. 11. 9. 222, the water level was at 156. 5 feet below land surface on January 1, 1954. It rose almost steadily during January, February, and March, reaching 153. 4 feet on March 30, then declined rapidly and almost steadily from April 1, the start of the pumping season, until July 6, when it reached the lowest level of the year, 182. 6. A general rise occurred in the recorder well after July 6 and throughout the remainder of 1954, except during the first 3 weeks in August, when the water level fluctuated at about 175. 5 feet. On December 31 it reached 161. 6 feet, about 5 feet lower than on January 1, 1954.

Probably the declines in the area from Bluewater northward to near the mouth of Bluewater Canyon are largely the result of deficient recharge, as no water was available for release from Bluewater Reservoir. The records of previous years indicate that ground-water levels in this area show a pronounced rise when the flow past the mouth of Bluewater Canyon is increased, either through release of water from Bluewater Reservoir or because of increased precipitation over the area which drains into Bluewater Creek below Bluewater Dam. The effects of pumping, however, are equally marked in a negative manner. Conversely, the irrigated area south from Bluewater to near Grants is characterized by less effect from pumping, smaller fluctuations in ground-water levels, and slower response to recharge and discharge. Since 1946, the first year of record, water levels have declined about 40 to 45 feet under the area north of Bluewater but only about 18 to 20 feet under the irrigated area south of Bluewater.

Grants-Bluewater Area

10. 8. 26. 324. Santa Fe Ry. Drilled industrial water-table well in alluvium, diameter 14 to 12 inches, depth 178 feet. Land-surface datum is 6, 150 feet above msl. Highest water level 21. 41 below lsd, Apr. 15, 1953; lowest 21. 86 below lsd, Dec. 1, 1954. Records available: 1952-54. Feb. 8, 21. 67; Apr. 6, 21. 53; June 14, 21. 80; Aug. 26, 21. 80; Oct. 12, 21. 82; Dec. 1, 21. 86.

10. 9. 26. 224. Robert Gottlieb. Drilled stock water-table well in basalt, diameter 6 inches, depth 100 feet. Land-surface datum is 6, 274. 97 feet above msl. Highest water level 7. 79 below lsd, Aug. 26, 1954; lowest 8. 96 below lsd, Feb. 10, 1949, Dec. 16, 1952. Records available: 1946-54. Feb. 8, 8. 90; Apr. 6, 8. 95, pumping; June 15, 8. 87, pumping; Aug. 26, 7. 79; Oct. 12, 8. 42; Dec. 1, 8. 70.

10.10.26.331. Monico Mirabal. Drilled irrigation well in Glorieta sandstone member of San Andres formation, diameter 16 inches, depth 216 feet. Highest water level 22.18 below lsd, Feb. 21, 1952; lowest 24.39 below lsd, Oct. 12, 1954. Records available: 1952-54. Feb. 9, 23.57; Apr. 6, 23.84; June 11, 48.68, pumping; Aug. 31, 25.35, pumped recently; Oct. 12, 24.39; Dec. 1, 24.34.

11.10.4.111. Buford Yarbo. Drilled unused water-table well in alluvium of Quaternary age, diameter 12 inches, depth 118 feet. Highest water level 67.68 below lsd, May 10, 1946; lowest 86.63 below lsd, Aug. 16, 1951. Records available: 1946-54. Feb. 11, 83.34; Apr. 8, 82.66; June 11, 86.08; Oct. 14, 86.20; Dec. 1, 85.09.

11.10.4.211. J. Church Co. Drilled irrigation artesian well in San Andres formation, diameter 16 inches, depth 150 feet. Highest water level 57.97 below lsd, Feb. 26, 1946; lowest 85.96 below lsd, Aug. 27, 1954. Records available: 1946-54. Feb. 11, 79.21; Apr. 8, 80.66; Aug. 27, 85.96; Oct. 14, 83.70; Dec. 1, 81.58.

11.10.4.222. J. Church Co. Drilled domestic water-table well in alluvium of Quaternary age, diameter 6 inches, depth 94 feet. Highest water level 58.70 below lsd, May 10, 1946; lowest 74.80 below lsd, Oct. 14, 1954. Records available: 1946-54. Feb. 11, 73.13; Apr. 7, 73.58; June 11, 74.33, pumped recently; Oct. 14, 74.80; Dec. 1, 74.34.

11.10.8.222. Salvador Milan. Drilled irrigation artesian well in San Andres formation, diameter 16 inches, depth 165 feet. Highest water level 57.85 below lsd, Feb. 27, 1946; lowest 89.06 below lsd, Oct. 8, 1953. Records available: 1946-54. Feb. 9, 77.53; Apr. 8, 87.47, pumping; June 11, 92.41, pumping; Oct. 14, 82.14, pumped recently; Dec. 1, 79.94.

11.10.9.222. A. R. Card. Drilled irrigation artesian well in San Andres formation, diameter 20 inches, depth 480 feet. Highest water level 54.49 below lsd, Feb. 26, 1946; lowest 80.00 below lsd, Aug. 31, 1954. Records available: 1946-54. Feb. 11, 72.57; Apr. 8, 96.34, pumping; June 11, 101.19, pumping; Aug. 31, 80.00; Oct. 14, 76.89; Dec. 1, 75.82.

11.10.16.121. Adams & Peterson. Formerly Frank Wilson. Drilled irrigation artesian well in San Andres formation, diameter 16 inches, depth 155 feet. Highest water level 46.47 below lsd, Feb. 27, 1946; lowest 86.11 below lsd, Aug. 31, 1954. Records available: 1946-54. Feb. 9, 64.30; Apr. 8, 64.59; June 11, 91.30, pumping; Aug. 31, 86.11; Oct. 14, 68.29; Dec. 1, 66.48.

11.10.26.411. City of Grants. Drilled public-supply water-table well in alluvium of Quaternary age, diameter 16 inches, depth 110 feet. Highest water level 7.40 below lsd, Mar. 11, 1947; lowest 18.07 below lsd, Dec. 18, 1953. Records available: 1946-54. Feb. 11, 19.55, pumped recently, nearby well being pumped; Apr. 9, 17.11; June 15, 19.39, nearby well being pumped; Aug. 31, 23.70, pumping, nearby well being pumped; Oct. 14, 24.93, nearby well being pumped; Dec. 1, 20.22, nearby well being pumped.

11.10.27.242. Ice Plant, west of Grants. Drilled industrial water-table well, diameter 16 inches. Highest water level 19.86 below lsd, Feb. 20, 1953; lowest 26.28 below lsd, June 14, 1954. Records available: 1953-54.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 20, 1953	19.86	Oct. 9, 1953	a29.45	Feb. 9, 1954	21.85	June 14, 1954	26.28
Apr. 16	20.34	Dec. 17	23.45	Apr. 6	21.35	Dec. 3	23.63

a Pumping.

11.10.27.410. McMain. Formerly Cecil Moore. Drilled unused water-table well in alluvium and basalt of Quaternary age, diameter 9 inches, depth 50 feet. Highest water level 35.54 below lsd, Mar. 11, 1947; lowest 46.15 below lsd, Aug. 31, 1954. Records available: 1946-54. Feb. 9, 41.88; Apr. 6, 41.13; June 14, 44.75; Aug. 31, 46.15; Oct. 12, 45.12; Dec. 3, 43.66.

12.10.29.434. A. R. Card. Drilled unused artesian well in San Andres formation, diameter 18 inches, depth 205 feet. Highest water level 65.46 below lsd, Oct. 14, 1944; lowest 98.76 below lsd, June 11, 1954. Records available: 1944, 1946-54. Feb. 11, 90.17; Apr. 7, 98.71, nearby well being pumped; June 11, 98.76; Aug. 27, 98.77, nearby well being pumped; Oct. 13, 94.17; Dec. 1, 92.45.

12.10.30.242. Jack Freas. Formerly E. E. Harden. Drilled domestic water-table well in alluvium of Quaternary age, diameter 4 inches, depth 160 feet. Highest water level 88.45 below lsd, May 10, 1946; lowest 111.51 below lsd, June 11, 1954. Records available: 1946-54. Feb. 11, 105.57; Apr. 8, 105.54; June 11, 111.51; Aug. 27, 110.94; Oct. 13, 109.30; Dec. 2, 107.87.

12.10.30.412. Fred Freas. Drilled irrigation artesian well in San Andres formation, diameter 16 inches, depth 225 feet. Highest water level 90.04 below lsd, Feb. 26, 1946; lowest 113.21 below lsd, Dec. 17, 1953. Records available: 1946-54. Feb. 11, 111.08; Apr. 7, 111.45; June 11, 115.53, pumping, nearby well being pumped; Aug. 27, 112.83, pumped recently, measurement uncertain; Oct. 14, 112.54, pumped recently; Dec. 2, 112.37.

12.10.30.421. Milton Harding. Drilled irrigation artesian well in San Andres formation, diameter 16 inches, depth 245 feet. Highest water level 88.38 below lsd, Feb. 26, 1946; lowest 119.69 below lsd, Oct. 8, 1953. Records available: 1946-54. Feb. 11, 111.58, pumped recently, measurement uncertain; Apr. 7, 109.63; Aug. 27, 114.73, pumped recently, measurement uncertain; Oct. 13, 114.74, nearby well being pumped; Dec. 2, 112.04.

12.10.32.111. J. Church Co. Drilled irrigation artesian well in San Andres formation, diameter 20 inches, depth 253 feet. Highest water level 82.09 below lsd, Feb. 26, 1946; lowest 111.12 below lsd, Oct. 8, 1953. Records available: 1946-54. Feb. 11, 103.09; Apr. 7, 103.18; June 11, 117.05, pumping; Aug. 27, 130.20, pumping, measurement uncertain; Oct. 13, 108.06, measurement uncertain; Dec. 2, 106.45.

12.11.5.413. J. Church Co. Drilled unused artesian well in San Andres(?) formation, diameter 8 inches, depth 397 feet. Highest water level 183.46 below lsd, Oct. 12, 1949; lowest 249.54 below lsd, Aug. 27, 1954. Records available: 1948-54. Feb. 10, 219.64; Apr. 7, 218.74; June 10, 239.83; Aug. 27, 249.54; Oct. 13, 234.58; Dec. 2, 229.46.

12.11.9.114a. J. Church Co. Drilled unused artesian well in San Andres(?) formation, diameter 16 inches, depth 523 feet. Highest water level 123.30 below lsd, Aug. 19, 1949; lowest 175.35 below lsd, Aug. 14, 1951. Records available: 1948-54. Feb. 10, 160.97; Apr. 7, 161.48; June 10, 167.07; Aug. 27, 165.34; Oct. 13, 165.03; Dec. 2, 164.77.

12.11.9.222. J. Church Co. Drilled unused water-table well in San Andres formation, diameter 18 inches, depth 500 feet. Highest water level 115.70 below lsd, Feb. 27, 1946; lowest 182.56 below lsd, July 6, 1954. Records available: 1946-54.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	156.46	155.06	154.01	154.18	167.10	176.01	181.51	175.73e	173.75	170.40	166.18	163.36
2	156.45	155.04	154.10	154.53	166.60	176.27	181.20	175.75	174.25	170.20	166.07	163.19
3	156.43	154.96	154.08	154.26	166.48	176.67	180.93	175.68	174.53	169.86	166.01	163.00
4	156.48	154.95	154.03	154.21	167.24	176.93	180.82	175.20	174.52	169.85	165.97	162.96
5	156.43	154.89	154.07	154.53	167.58	177.26	161.61	175.19	174.28	169.74	165.83	162.98
6	156.32	154.89	153.97	155.19	167.58	177.18	162.56	175.19	173.78	169.52	165.68	162.80
7	156.23	154.93	153.97	155.64	168.33	177.12	181.90	175.44	173.25	169.45	165.58	162.70
8	156.18	154.85	154.00	156.09	169.08	177.51	181.32	175.36	172.81	169.40	165.52	162.70
9	156.16	154.70	154.08	156.44	169.50	177.94	181.67	175.63	172.48	169.07	.....	162.59
10	156.18	154.68	153.98	156.78	169.40	178.40	181.03	175.50	172.11	168.78	165.30	162.44
11	156.07	154.75	154.00	157.16	169.90	178.70	180.19	175.50	172.00	168.61	165.19	162.44
12	155.99	154.69	154.03	157.30	170.51	178.98	179.78e	175.67e	171.82	168.42	165.00	162.54
13	155.96	154.61	154.07	158.27	171.02	178.69	179.59	175.69	171.65	168.30	164.98	162.35
14	155.94	154.51	154.17	159.27	171.17	178.69	179.49	175.69	171.64	168.25	164.87	162.38
15	155.94	154.53	154.13	159.95	.....	179.00	179.41	175.50	171.68	168.09	164.76	162.18
16	155.88	154.62	154.26	160.83	171.54	178.37	179.28	175.22	171.97	167.94	164.64	162.78
17	155.78	154.54	154.07	161.66	172.56	178.30	179.30	175.00	171.97	167.84	164.60	162.54.
18	155.70	154.40	154.06	161.46	172.60	178.84	179.34	175.05	171.78	167.73	164.47	162.53
19	155.59	154.47	154.00	161.38	173.07	179.46	180.17	175.07	171.78	167.57	164.33	162.45
20	155.61	154.51	153.93	161.62	.....	179.82	179.87	175.71	171.98	.....	164.23	162.32
21	155.67	154.48	153.87	162.32	173.20	180.06	179.63e	175.75	171.67	.....	164.13	162.21
22	155.56	154.47	153.76	163.00	173.72	180.36	179.63	175.52	171.21	.....	164.01h	162.10
23	155.45	154.45	153.64	163.56	173.77	180.64	179.51	175.42	170.92	.....	163.90	162.09
24	155.40	154.31	153.65	163.91	173.67	180.85	179.42	175.12	170.70	.....	163.85	161.99
25	155.36	154.25	153.71	163.61	173.70	181.08	178.54	174.69	170.52	.....	163.73	161.90
26	155.34	154.14	153.70	163.59	173.81	181.18	177.84	174.31	170.30	.....	163.66	161.83
27	155.38	154.12	153.60	164.34	174.06	181.18	177.51	173.99e	170.11	.....	163.44	161.77
28	155.29	154.15	153.44	165.28	174.88	181.60	177.44	173.71e	169.94	166.58	163.40	161.82
29	155.22		153.39	166.05	175.45	181.61	176.78	173.27	170.30	166.47	163.25	161.68
30	155.20		153.38	166.82	175.76	181.84	176.18	173.14	170.42	166.38	163.28	161.68
31	155.15		153.80		175.68		e175.71	173.04		166.25		161.65

e Estimated.
h Tape measurement.

12.11.9.424. George Rowley. Drilled unused artesian well in San Andres formation, diameter 16 inches, depth 505 feet. Highest water level 93.75 below lsd, May 10, 1946; lowest 122.21 below lsd, June 10, 1954. Records available: 1946-54. Feb. 10, 118.30; Apr. 7, 119.17; June 10, 122.21; Oct. 13, 126.15, measurement uncertain.

12.11.14.213. Dyan Berryhill. Drilled unused water-table well in alluvium, of Quaternary age, diameter 4 inches, depth 130 feet. Highest water level 98.26 below lsd, Feb. 8, 1950; lowest 101.39 below lsd, June 10, 1954. Records available: 1949-54. Feb. 10, 101.16; Apr. 7, 101.27; June 10, 101.39; Aug. 27, 101.31; Oct. 13, 101.19; Dec. 2, 101.16.

12.11.15.341. Edward Freas. Drilled irrigation artesian well in San Andres formation, diameter 14 inches, depth 457 feet. Highest water level 99.78 below lsd, Oct. 12, 1949; lowest 159.98 below lsd, June 10, 1954. Records available: 1946-54. Feb. 10, 132.62; Apr. 7, 135.22; June 10, 159.98; Aug. 27, 152.35; Oct. 13, 147.03; Dec. 3, 141.80.

12.11.20.424. J. F. Nielson. Drilled stock artesian well in San Andres formation, diameter 18 inches, depth 310 feet. Highest water level 236.29 below lsd, Oct. 12, 1949; lowest 271.52 below lsd, June 15, 1954. Records available: 1946-54. Feb. 10, 261.05; Apr. 7, 267.87; June 15, 271.52; Oct. 13, 267.65; Dec. 22, 263.33.

12.11.22.414. Hassell. Drilled unused artesian well in San Andres(?) formation, diameter 20 inches, depth 440 feet. Highest water level 110.59 below lsd, Feb. 27, 1946; lowest 150.39 below lsd, Aug. 15, 1951. Records available: 1946-54. Apr. 7, 140.37. Measurement discontinued.

12.11.23.233. Harmon & Read. Drilled domestic artesian well in San Andres formation, diameter 8 inches, depth 300 feet. Highest water level 67.17 below lsd, June 25, 1952; lowest 71.69 below lsd, June 10, 1954. Records available: 1946-54. Feb. 10, 71.21; Apr. 7, 71.57; June 10, 71.69; Aug. 27, 72.32, pumped recently; Oct. 13, 70.70.

12.11.24.411. Anaconda Copper Co. Drilled industrial well in limestone member of San Andres formation, diameter 14 to 12 inches, depth 357 feet, cased to 357, perforations 249-357. Land-surface datum is 6,612.96 feet above msl. Highest water level 149.31 below lsd, Feb. 18, 1953; lowest 167.55 below lsd, June 15, 1954. Records available: 1952-54. Feb. 11, 152.65; Apr. 8, 154.51, pumping; June 15, 167.55; Aug. 27, 162.74.

12.11.25.223. J. C. Church. Drilled irrigation artesian well in San Andres formation, diameter 18 inches, depth 238 feet. Highest water level 100.18 below lsd, Feb. 27, 1946; lowest 129.95 below lsd, Oct. 8, 1953. Records available: 1946-54. Feb. 10, 121.88; Apr. 7, 121.83; June 11, 131.20, pumping; Aug. 27, 133.29, pumping, measurement uncertain; Oct. 13, 127.66; Dec. 2, 124.89.

12.11.25.223a. J. C. Church. Drilled irrigation artesian well in San Andres formation, diameter 18 inches, depth 236 feet. Highest water level 106.82 below lsd, Feb. 3, 1947; lowest 131.28 below lsd, Oct. 6, 1953. Records available: 1946-54. Feb. 10, 123.02; Apr. 7, 122.96; June 10, 119.74, nearby well being pumped; Aug. 27, 131.99, nearby well being pumped; Oct. 13, 128.78; Dec. 2, 125.84.

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