Water Levels and Artesian Pressures in Observation Wells in the United States in 1952

Part 6. Southwestern States and Territory of Hawaii

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

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1226

Prepared in cooperation with the States of Arizona, California, Nevada, and New Mexico, the Territory of Hawaii, and other agencies

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1955

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, *Secretary*

GEOLOGICAL SURVEY

W. E. Wrather, *Director*

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price $1.00 (paper cover)

PREFACE

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

C. G. Paulsen_____Chief Hydraulic Engineer
A. N. Sayre_____Chief, Ground Water Branch
L. C. Halpenny_____District Engineer (Ground Water), Tucson, Ariz.
J. F. Poland____District Geologist (Ground Water), Long Beach, Calif.
D. A. Davis_____District Geologist (Ground Water), Honolulu, T. H.
Omar J. Loeltz___District Engineer (Ground Water), Carson City, Nev.
C. S. Conover__District Engineer (Ground Water), Albuquerque, N. Mex.

CONTENTS

ILLUSTRATIONS

WATER LEVELS AND ARTESIAN PRESSURES IN OBSERVATION WELLS IN THE UNITED STATES IN 1952

Part 6. SOUTHWESTERN

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 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 1952.

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

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, evapotranspiration by vegetation, evaporation from the soil, and by 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 by 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 depending upon 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 preceding the first entry in each column. Readings between minus signs are below the plane of reference and those between plus signs are above 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.

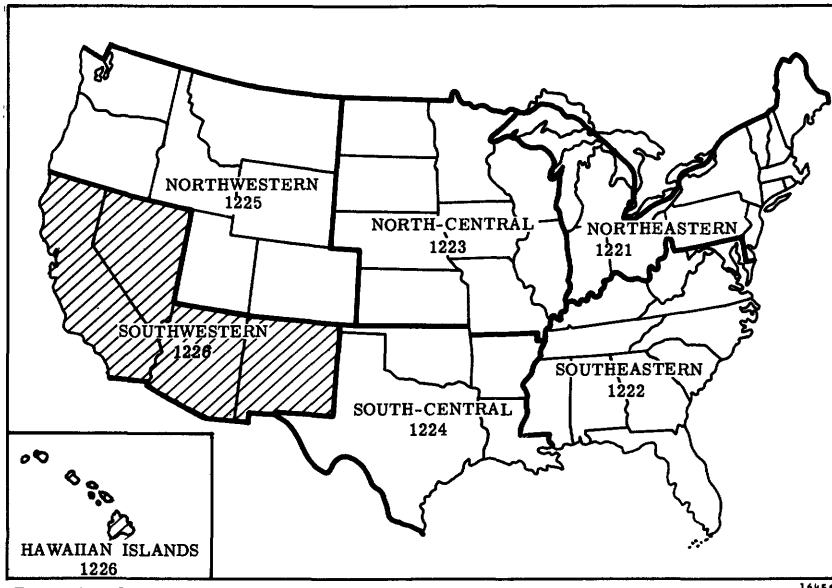


Figure 1.--Outline map of the United States showing areas included in each of the six water-supply papers on water levels and artesian pressures in observation wells in 1952. The shaded area indicates the States included in this volume.

Penn Livingston had general charge of the nation-wide observation-well program; Verda M. Dougherty edited the reports; and Rodney Hart and Marie H. Adler edited the illustrations. This volume was typed by Jean B. Evans.

ARIZONA

By L. C. Halpenny

Scope of Water-Level Program

The observation-well program in Arizona was continued in 1952 principally in cooperation with the State Land Department. As a part of this program, field work was completed on investigations of the ground-water resources and geology of the Douglas Basin and the Rainbow Valley-Waterman Wash area. Field work was started in the Harquahala Plains area and the Palomas Plain area. A re-evaluation of the ground-water resources and geology of the Upper Santa Cruz basin was begun, to bring up to date the basin study made in 1942. A compilation of all available ground-water data collected by the Geological Survey in central and southern Arizona was made during 1952, in financial cooperation with the Underground Water Commission of Arizona. Investigation of the water-bearing character of the deep aquifers in central and southern Arizona was continued during the year by electrical resistivity probing, collection and analysis of electrical and gamma-ray well logs, pumping tests, and examination of drill cuttings. The program of filing drill cuttings from deep wells, in cooperation with the State Land Department, the University of Arizona, and the Museum of Northern Arizona, was continued. Work financed by transfer of funds from the Bureau of Indian Affairs was continued on the Navajo, Hopi, and Papago Indian Reservations. The long-range investigation of the springs along the Mogollon Rim, financed by direct Federal funds, was continued.

During 1952 water-level measurements were made in approximately 1,700 wells. For location of observation wells, see figures 2-15. The rate of discharge in gallons per minute was measured in 827 wells. Recording gages were operated on 11 wells. The water-level measurement program is most intensive in the irrigated areas of central and southern Arizona, where the water-level fluctuations are large. Records indicate that approximately 5,500 irrigation wells were in use in Arizona during the year, not including wells powered by 5-horsepower or less. The measurements made in a few representative wells are tabulated in the annual water-level report to show typical fluctuations in stage of the water tables in the ground-water basins of the State, and a few representative graphs are included to show the fluctuations in relation to previous years. Those who wish to obtain water-level measurements that were made in observation wells not included in this report can obtain them by consulting the open files of 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 prepared and released by the Geological Survey in 1952:

Answers to 24 questions asked by the Honorable J. R. Murdock, Member of Congress from Arizona, by L. C. Halpenny, R. L. Cushman, and J. H. Feth, mimeographed, 13 pp.

Ground water in the Gila River basin and adjacent areas, Arizona - a summary, by L. C. Halpenny and others, open-file report, 224 pp., 24 figs., 32 pls.

Ground-water problems of Queen Creek area, by L. C. Halpenny and S. F. Turner, Ariz. Geol. Soc., Guidebook for field trip excursions, pp. 17-20, 1952.

The relation of geologic activity to the origin of parks and prairies near Flagstaff, Ariz., by J. H. Feth, Plateau, Museum of Northern Arizona, vol. 24, no. 3, pp. 104-109, Jan. 1952 (reprint).

The water resources of Arizona, text of talk given at Convention of Western Political Science Association, by L. C. Halpenny, mimeographed, 6 pp.

Use of water by phreatophytes in 2,000-foot channel between Granite Reef and Gillespie Dams, Maricopa County, Ariz., by S. F. Turner and H. E. Skibitzke, Am. Geophys. Union Trans., vol. 33, no. 1, pp. 66-72 (reprint).

Precipitation

The following is taken from the Annual Summary, 1952, Climatological Data, U. S. Weather Bureau: Heavy precipitation early in the winter conditioned the ground for favorable runoff over most of the drainage basins of the State. The abundant precipitation during January, March, and April resulted in quick and heavy runoff into the storage reservoirs. Measured stream flow in the central portion of the State reached a new all-time high value on January 18. Total storage in the

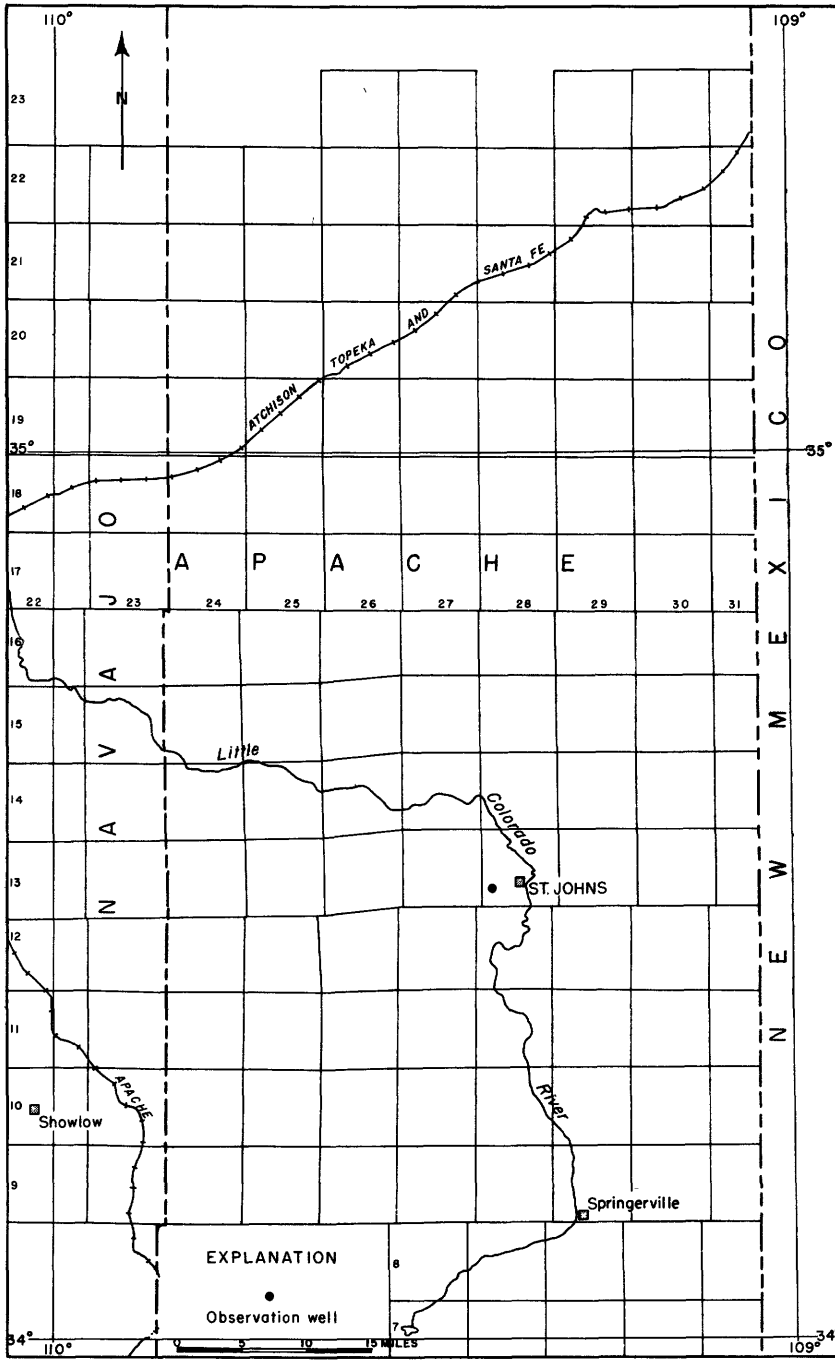


Figure 2.--Location of observation well in Apache County, Ariz., 1952.

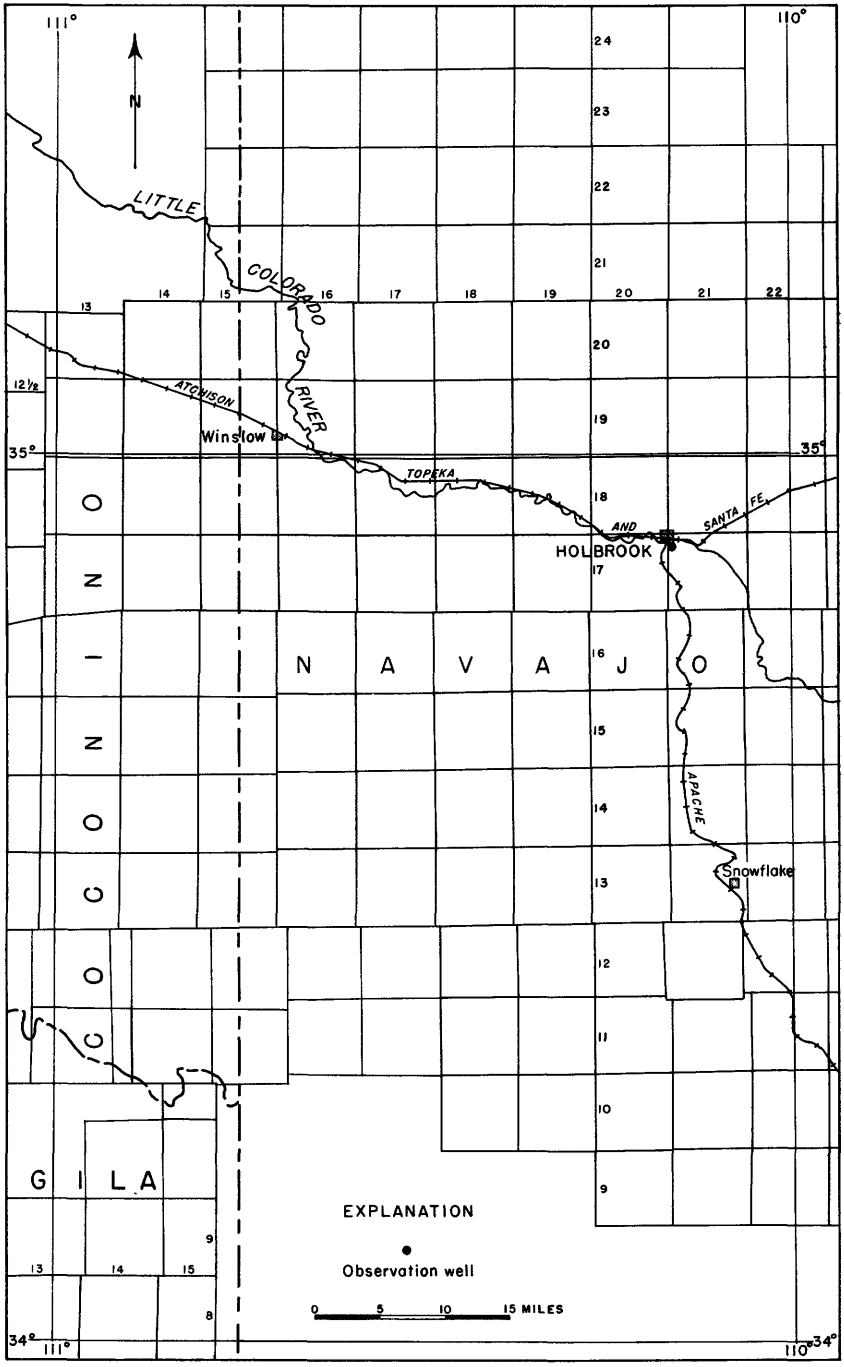


Figure 3.--Location of observation well in Navajo County, Ariz., 1952.

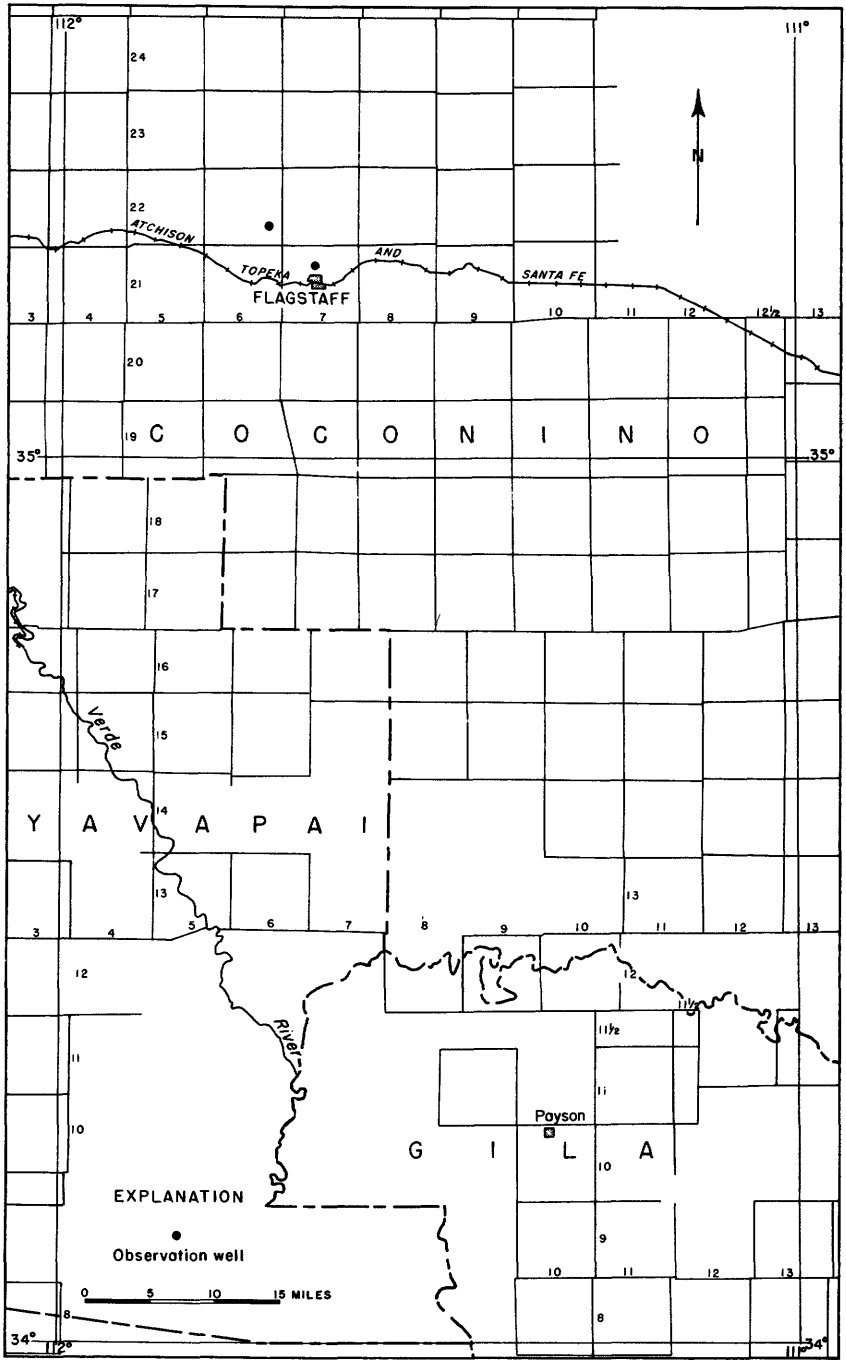


Figure 4.--Location of observation wells in Coconino County, Ariz., 1952.

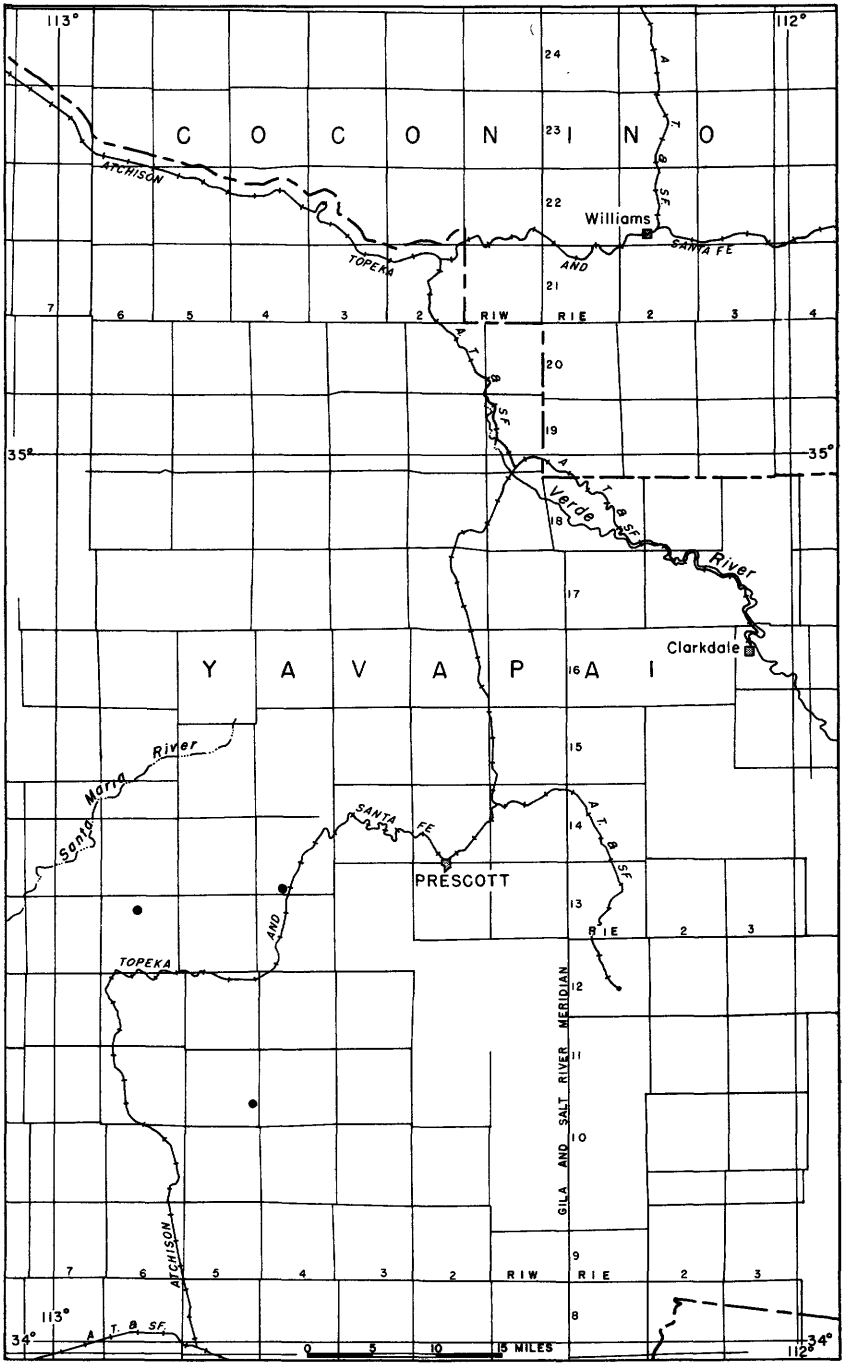


Figure 5. --Location of observation wells in Yavapai County, Ariz., 1952.

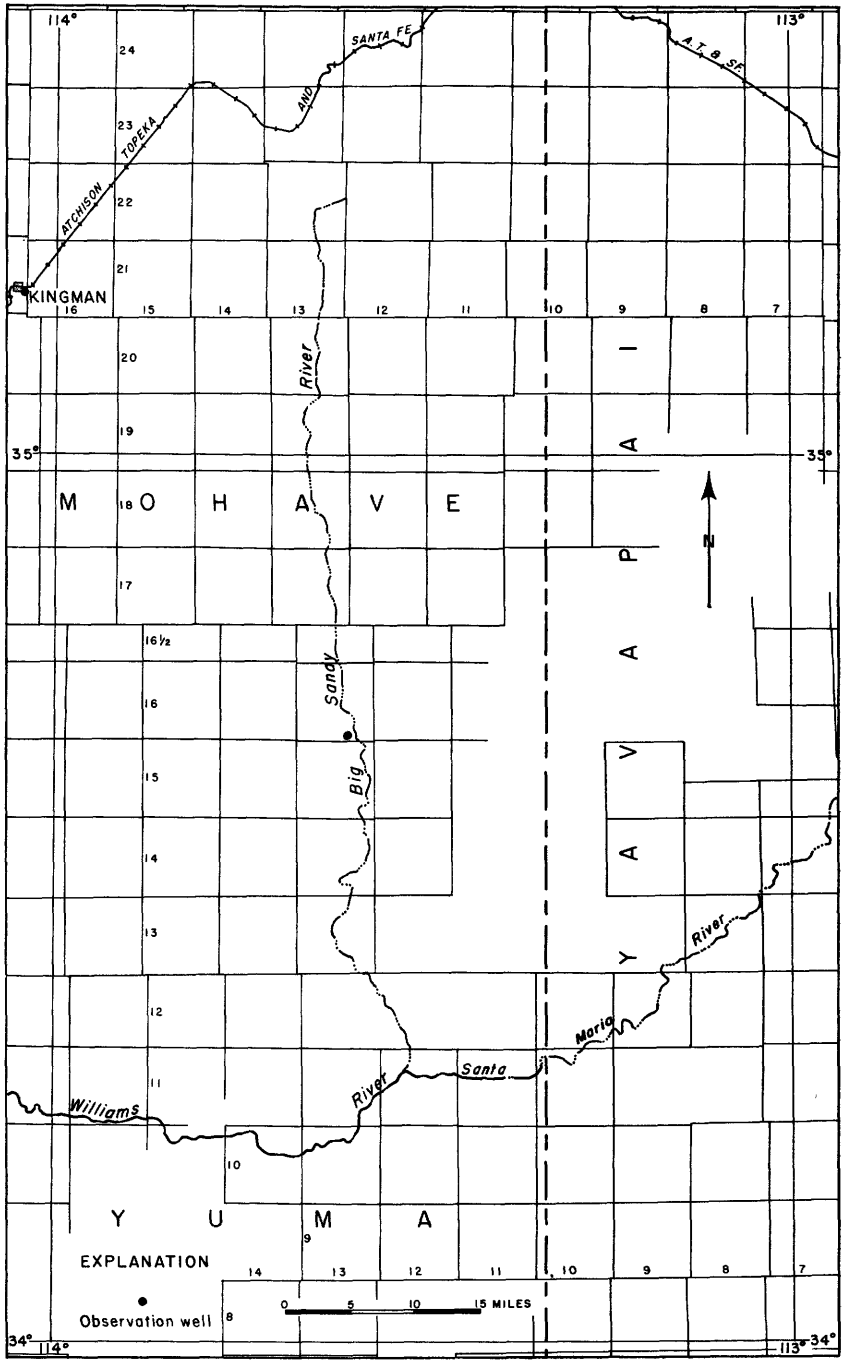


Figure 6. --Location of observation wells in Mohave County, Ariz., 1952.

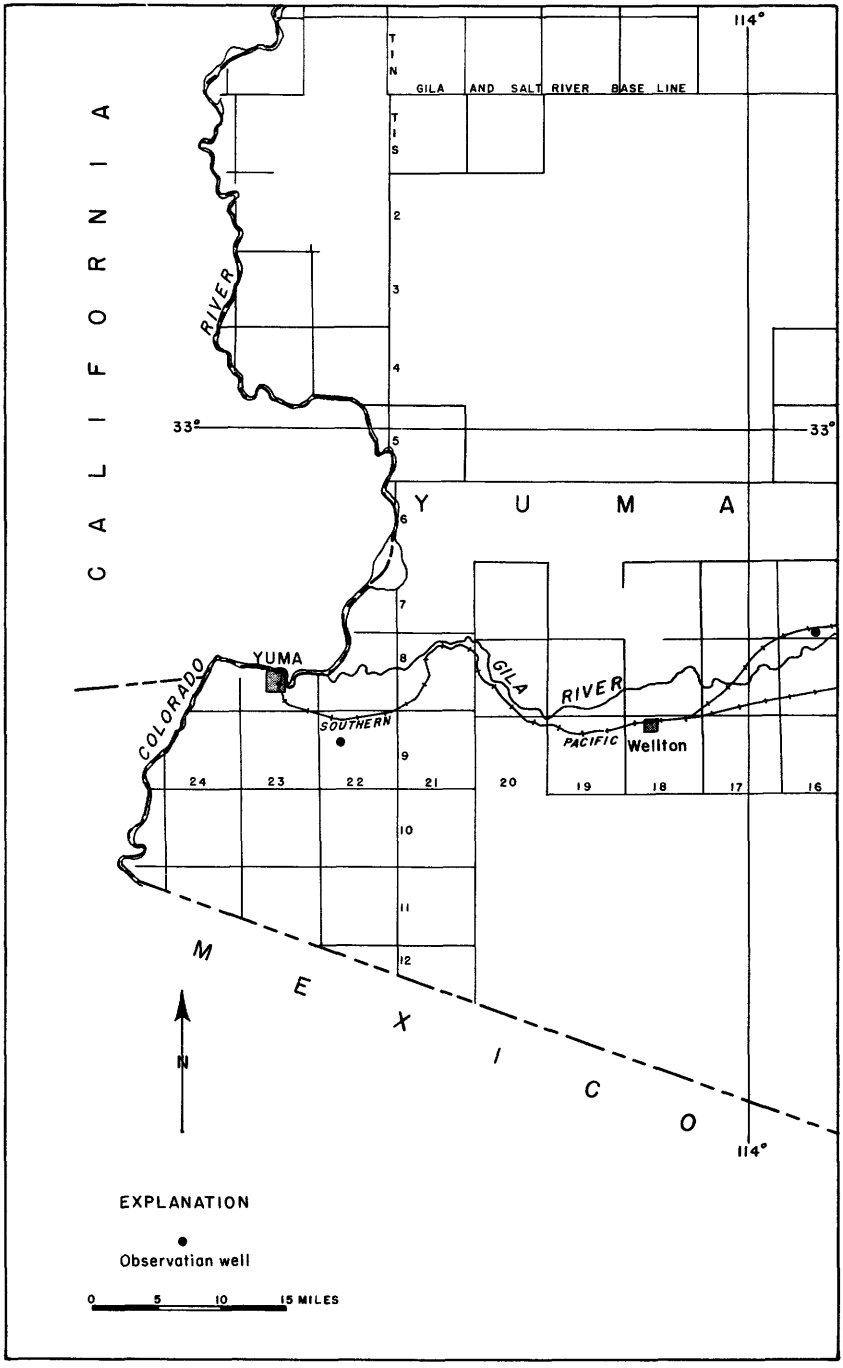


Figure 7.--Location of observation wells in Yuma County, Ariz., 1952.

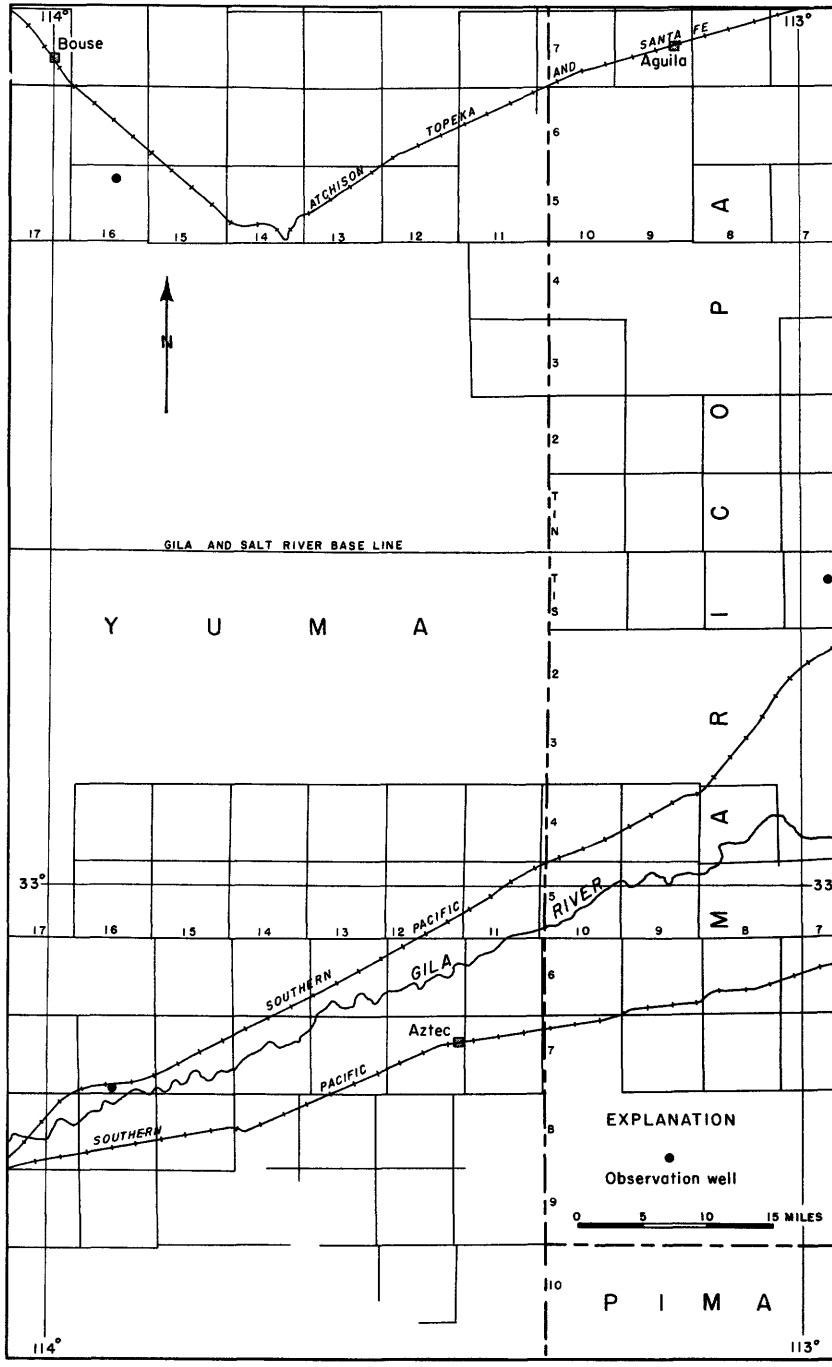


Figure 8. --Location of observation wells in Yuma and Maricopa Counties, Ariz., 1952.

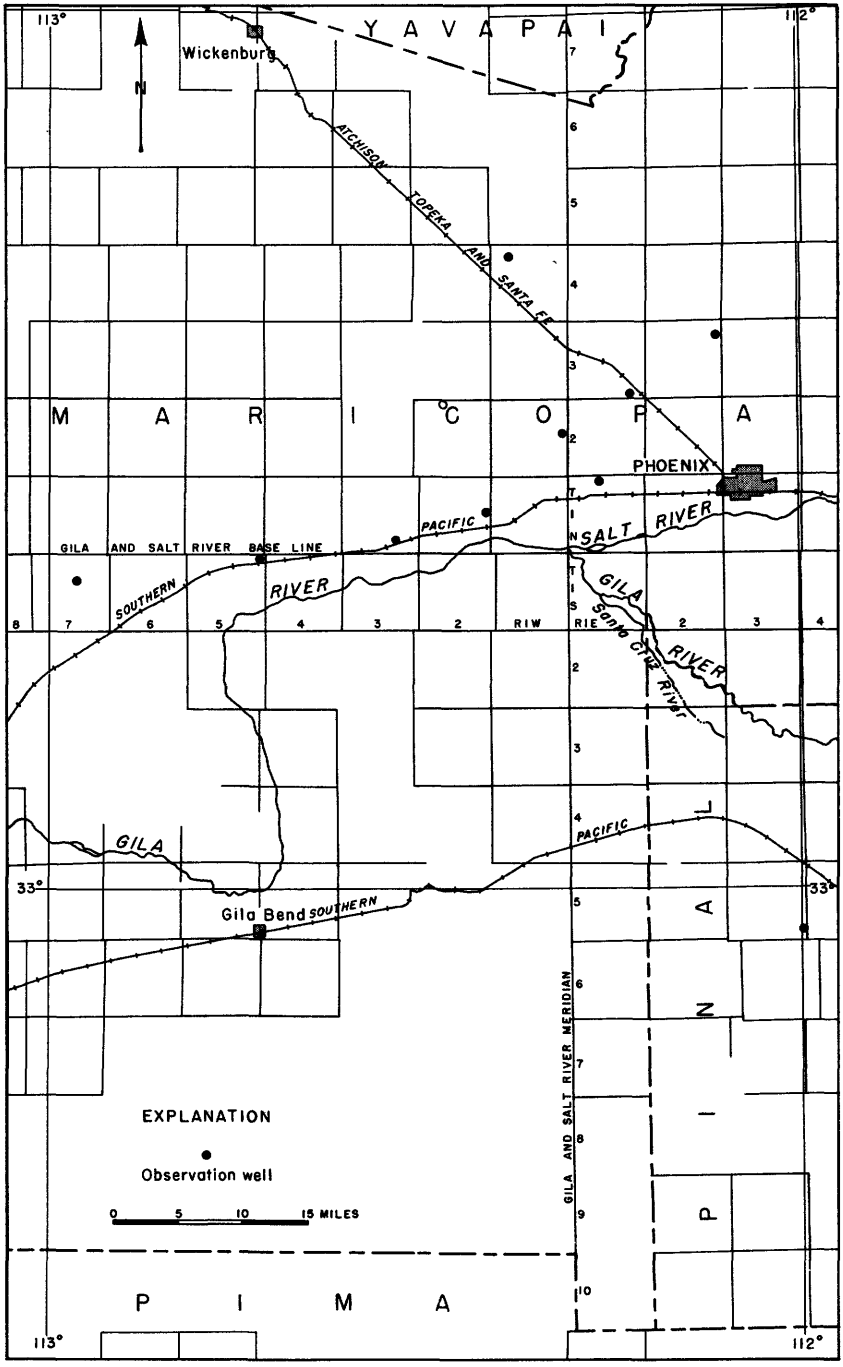


Figure 9.--Location of observation wells in Maricopa County, Ariz., 1952.

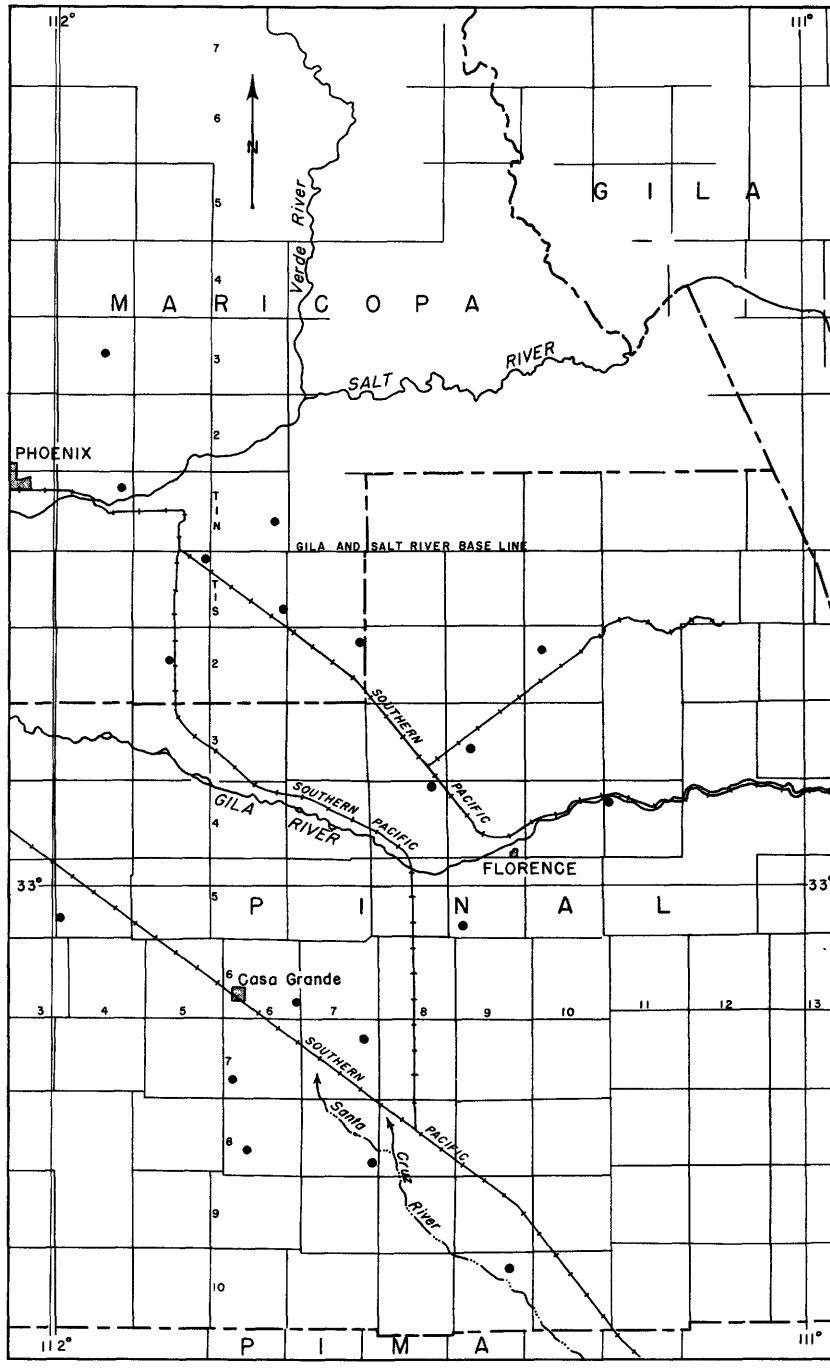


Figure 10.--Location of observation wells in Maricopa and Pinal Counties, Ariz., 1952.

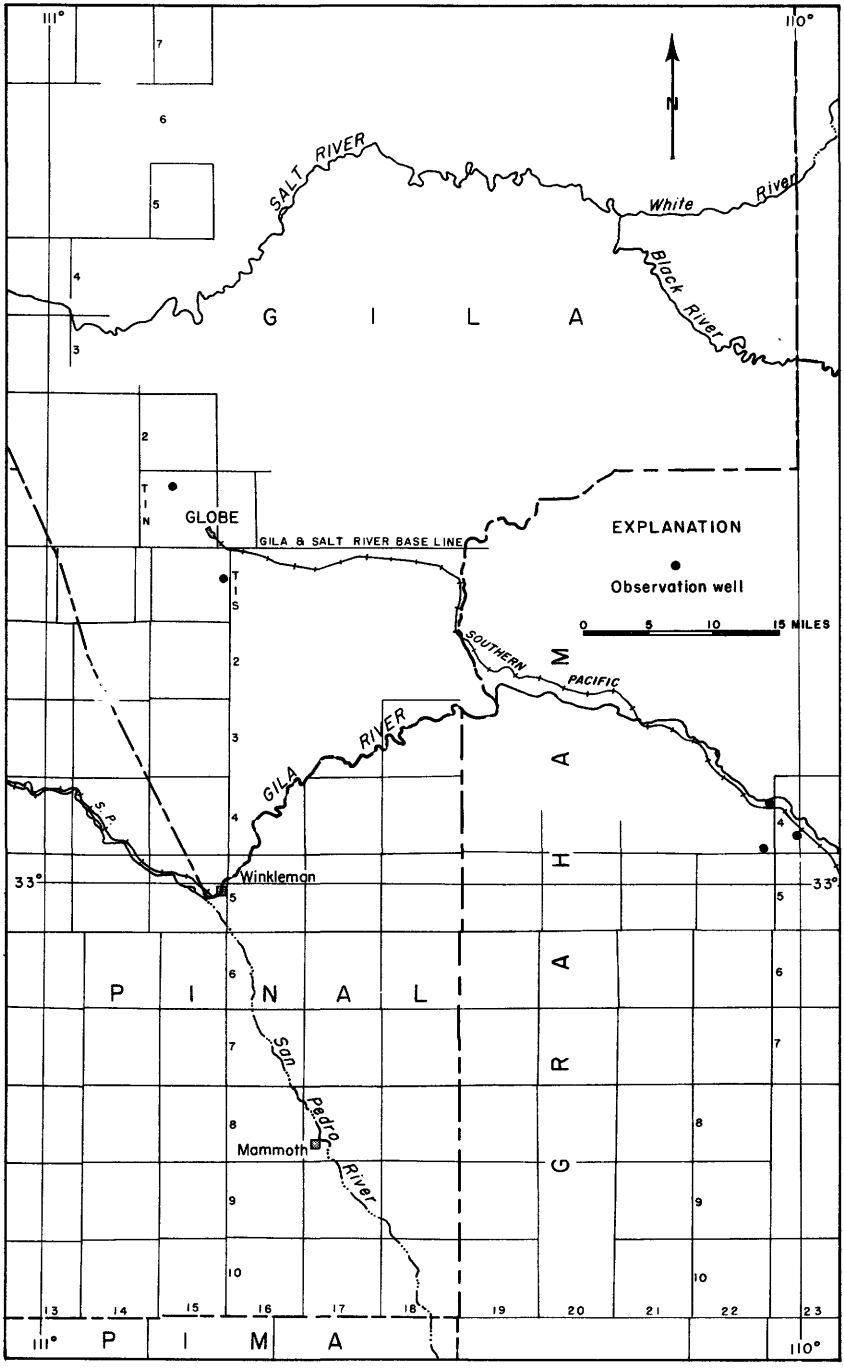


Figure 11. --Location of observation wells in Gila and Graham Counties, Ariz., 1952.

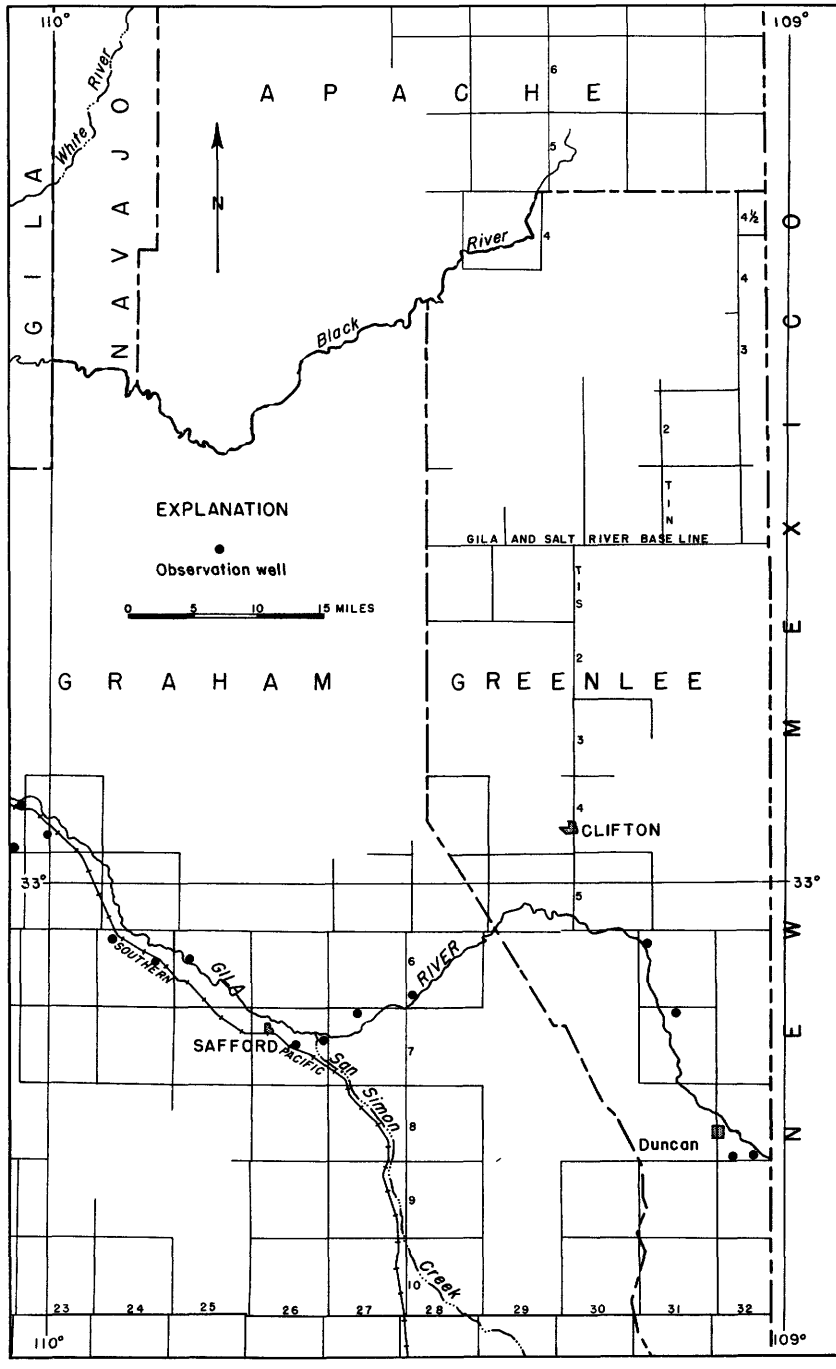


Figure 12. --Location of observation wells in Graham and Greenlee Counties, Ariz., 1952.

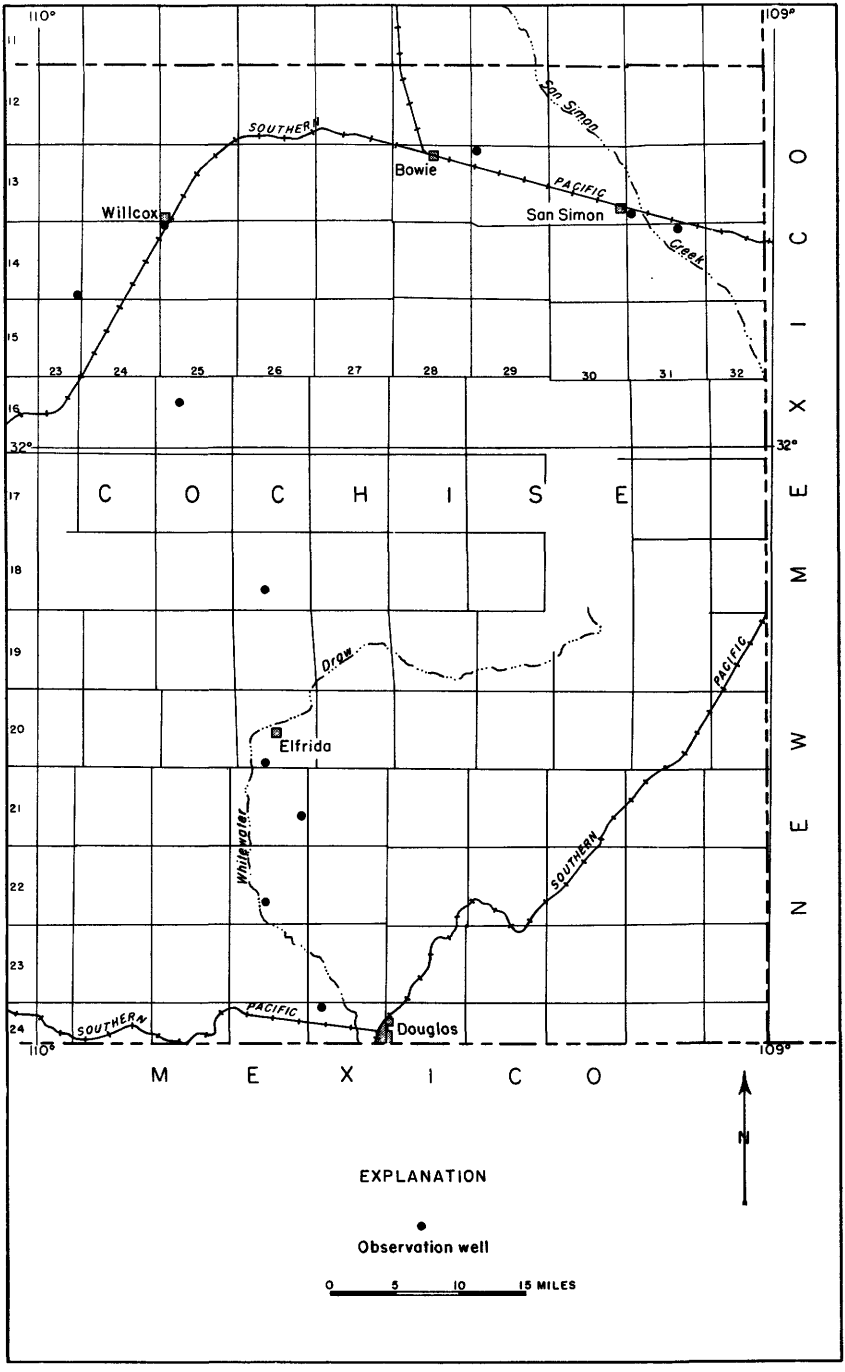


Figure 13. --Location of observation wells in Cochise County, Ariz., 1952.

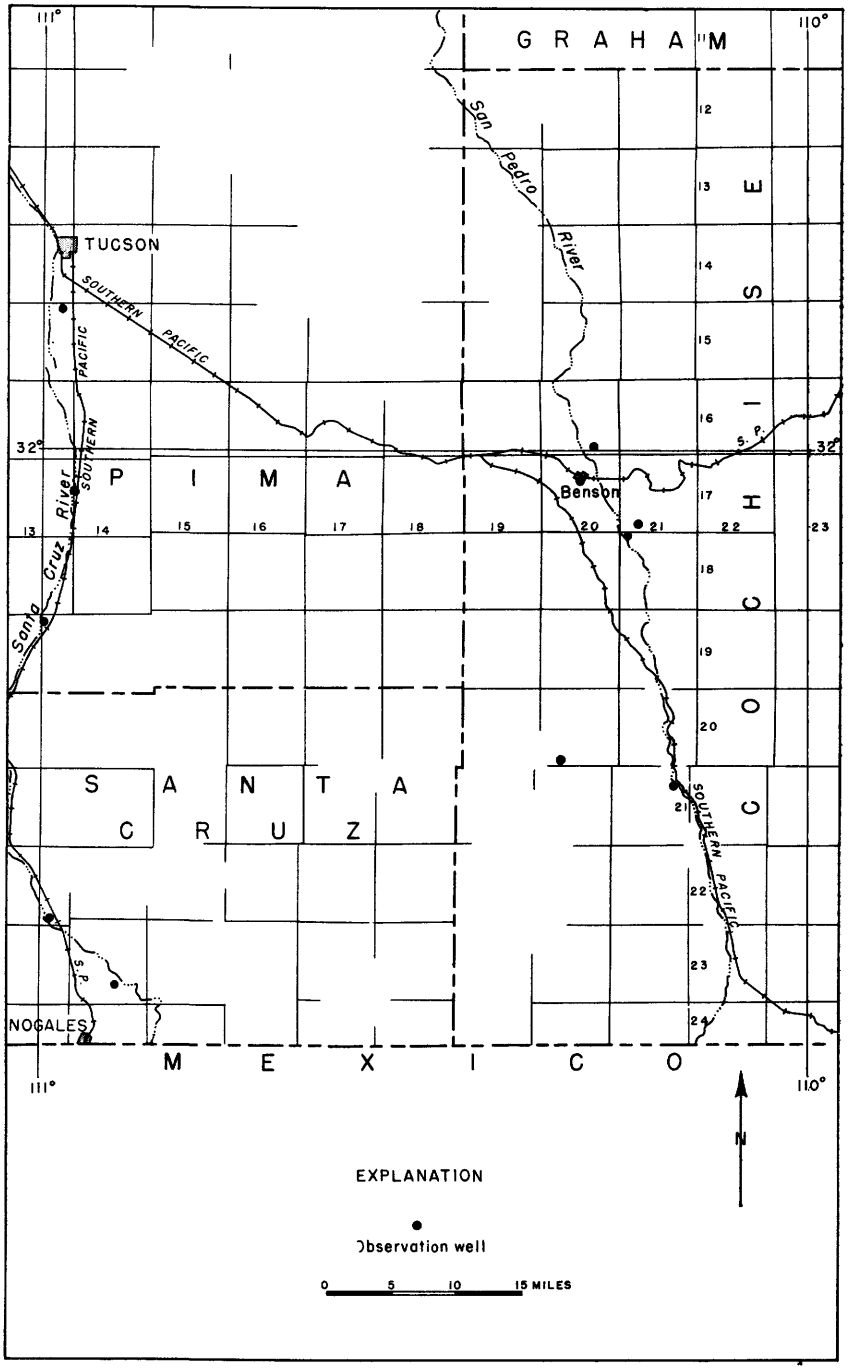


Figure 14. --Location of observation wells in Cochise, Pima, and Santa Cruz Counties, Ariz., 1952.

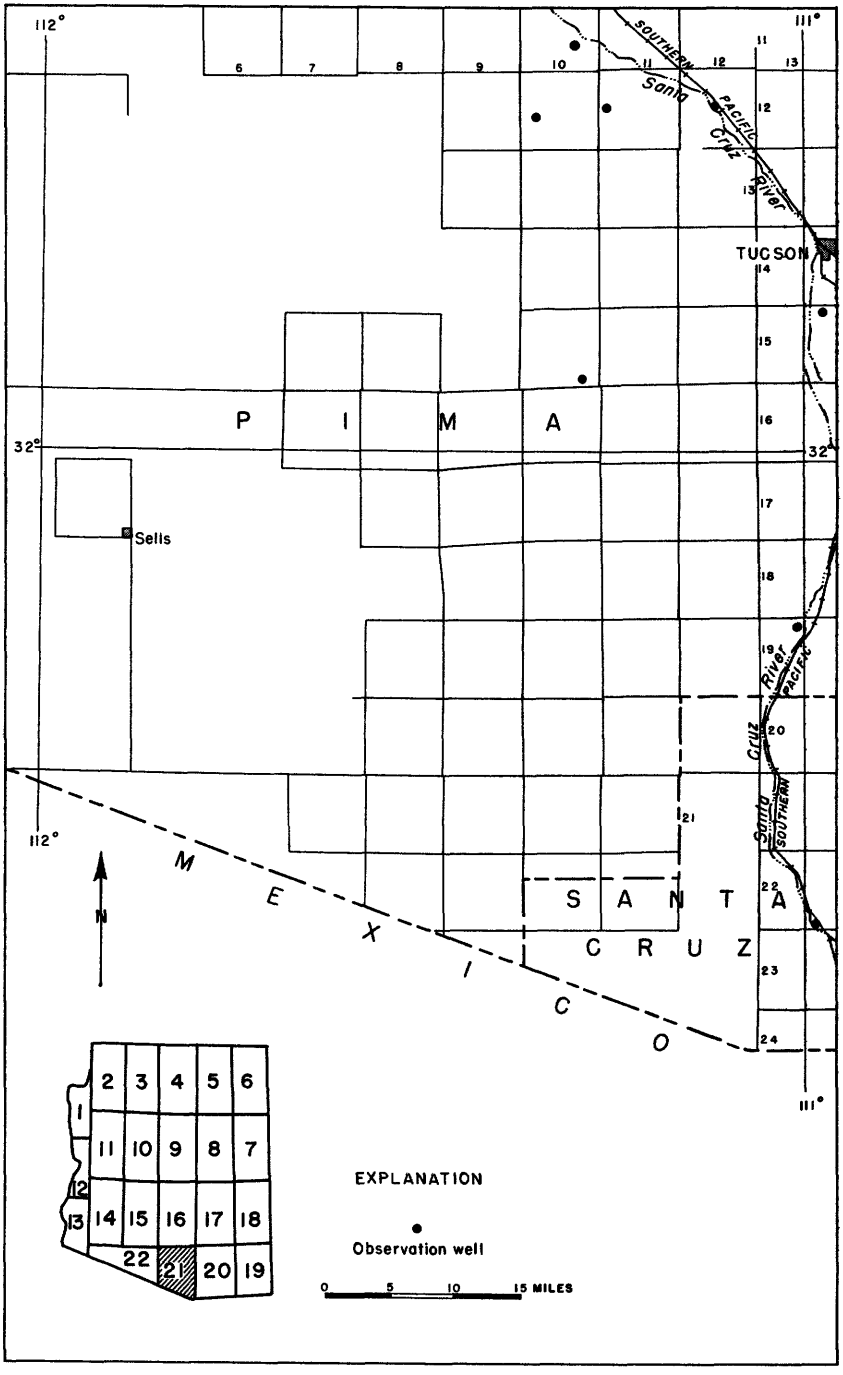


Figure 15. --Location of observation wells in Pima and Santa Cruz Counties, Ariz., 1952.

Salt River project at the end of April was the greatest since January 1942. On both range and cultivated land, benefits from summer rains were variable. Some areas received good moisture while neighboring districts remained dry. Heavy precipitation in November with lesser amounts in December again renewed ranges and surface water after a dry October.

Total annual runoff figures for 1952 as measured by the U. S. Geological Survey include: Salt River near Roosevelt, 1,143,770 acre-feet; Tonto Creek near Roosevelt, 201,300 acre-feet; and a provisional figure for the Verde River above Horseshoe Dam of 537,900 acre-feet.

Pumpage

The following table contains records of pumpage for the 7-year period 1946-52. The total for 1952 is 3,662,000 acre-feet, about the same as in 1951. This total reflects slight increases in some of the areas and slight decreases in others. The year 1952 is the first postwar year in which no substantial increase in pumping occurred. Areas in which records of pumpage were not collected include: Upper San Pedro Valley, Lower San Pedro Valley, Aravaipa area, Cactus Flat-Artesia area, St. Johns area, Snowflake-Taylor area, Hunt area, Woodruff area, Joseph City area, Chino Valley and Long Valley, Skull Valley, Peeples Valley, Date Creek area, Big Sandy Valley, Valentine area, and Parker area. It is estimated that pumpage for irrigation in these areas was 65,000 acre-feet in 1952. The total pumpage in the State during the year was therefore approximately 3,730,000 acre-feet. According to data provided by the University of Arizona, about 1,300,000 acres were cultivated in the State in 1952, an increase of 18 percent over the previous year.

Interpretation of Water-Level Fluctuations

Pumpage is greatest in Maricopa and Pinal Counties, and consequently public interest is greatest in the water-level fluctuations in those counties. 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-level fluctuations in wells in the St. Johns-Springerville area in 1952 were insignificant, and no consistent upward or downward trend in water levels could be detected. Precipitation at Springerville during the year amounted to 9.59 inches, approximately 75 percent of normal.

Cochise County.--Water levels in artesian wells of the Upper San Pedro Valley declined from less than a foot to more than 2 feet during 1952 in the heavily pumped areas near Pomerene, Benson, St. David, and Hereford. The largest net decline measured was 3 feet in well (D-17-20)10ccc (fig. 16) at Benson. Average net declines in artesian wells outside the areas of heavy pumping amounted to about 0.5 foot. Water levels in nonartesian wells on the valley floor near the San Pedro River (see hydrograph for well (D-21-21)11aad in fig. 16) declined about 0.5 foot except in local areas where heavy pumping caused net declines of as much as 2 feet. In nonartesian wells in the upland area, declines ranged from a few tenths of a foot to as much as 10 feet. These declines probably reflect the effects of a drought period which started in 1941 (see hydrograph for well (D-20-20)32cdb in fig. 16).

Water levels in the artesian wells near San Simon declined an average of 2 feet during 1952. In the center of heaviest pumping, net declines of more than 3 feet were measured. Fluctuations of the water levels in well (D-14-31)3ddd (fig. 16) are typical of the San Simon artesian wells. It was noted that, at the height of the pumping season, the lowering of artesian head caused many of the wells in this area to cease flowing. Water levels in nonartesian wells in the vicinity of San Simon showed an average net decline of about 0.5 foot for the year. The water-level fluctuations in well (D-13-31)30cdc (fig. 16) are representative of changes occurring in the nonartesian wells in the San Simon area. As these wells are used principally for stock watering and domestic purposes and the annual draft is small, the water-table decline probably can be attributed to drought conditions. In the Bowie area of the San Simon Basin pumping was in progress at the end of the year in many of the artesian wells, and it was impossible to ascertain the net average decline of water levels. However, net declines in excess of 3 feet were measured in most irrigation wells, and declines of more than 5 feet were noted in wells near the center of the pumped area. Typical fluctuations are shown in the graph for well (D-13-29)6ccc (fig. 16). In nonartesian wells in the Bowie area, water-level declines ranged from less than a foot in the valley areas to 3.5 feet near the mountain fronts. Pumpage in the San Simon Basin amounted to slightly less than 15,000 acre-feet in 1952, the greatest for any year to date. The largest percentage of increase was in the Bowie area.

Water levels in irrigation wells in the Willcox Basin declined to record low levels in 1952, principally because of continued pumping for irrigation but partly as a result of the long period of drought preceding 1952. Pumpage in 1952 was 39,000 acre-feet, a slight increase over 1951. Pumping for irrigation in the Stewart district, northwest of the town of Willcox, caused an average net lowering of the water table in that vicinity of $2\frac{1}{4}$ to $2\frac{1}{2}$ feet in 1952. Ranging from about a foot along the periphery of the irrigated areas to over $4\frac{1}{2}$ feet at the center of the pumped area. The

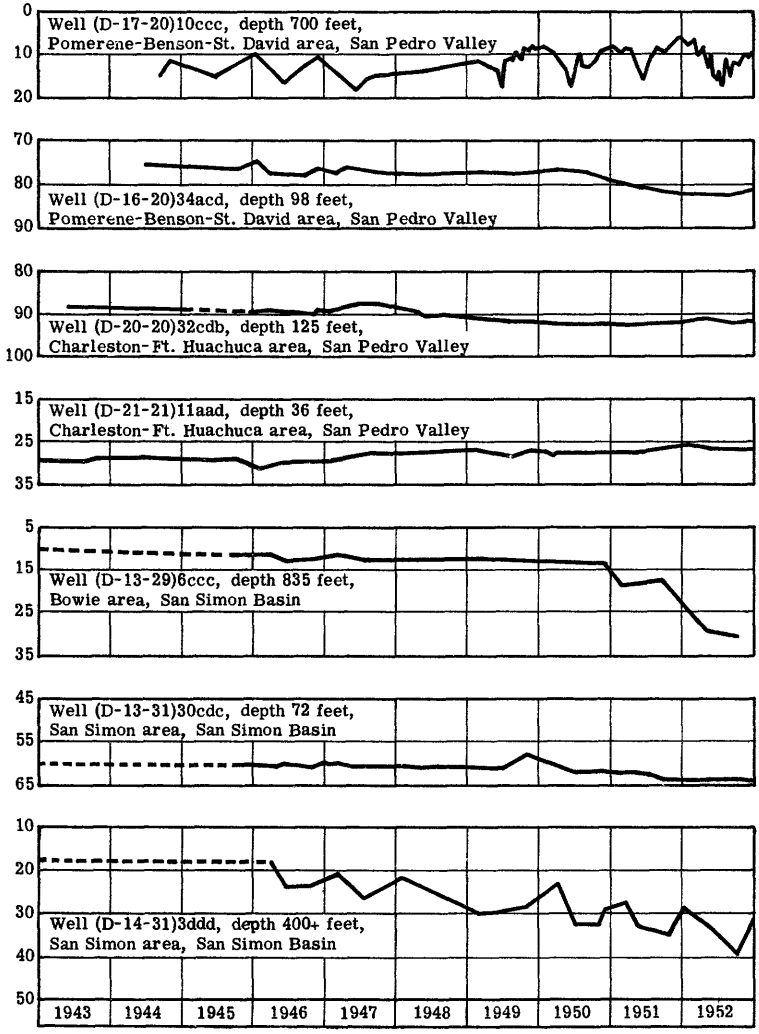


Figure 16. --Water levels in wells in San Pedro Valley and San Simon Basin, Cochise County, Ariz.

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

	1946	1947	1948	1949	1950	1951	1952
Cochise County:							
San Simon Basin a/	5,800	(b)	(b)	(b)	(b)	(b)	15,000
Willcox Basin	15,500	20,000	23,000	28,000	35,000	38,000	39,000
Douglas Basin	12,500	17,000	22,000	30,000	35,000	38,000	42,000
Graham County:							
Safford Valley	115,000	100,000	110,000	40,000	90,000	125,000	70,000
Greenlee County:							
Duncan Valley c/	17,000	21,000	21,000	11,000	23,000	33,000	17,000
Maricopa County:							
Salt River							
Valley area d/	1,360,000	1,406,000	1,670,000	1,644,000	1,852,000	1,910,000	2,000,000
Gila Bend area	33,300	40,500	60,800	67,000	59,000	(110,000	120,000
Dendora area	6,700	6,700	1,900	5,000	6,000	(	6,000
Pima County:							
Part of Santa							
Cruz River Basin	108,000	145,000	145,000	150,000	180,000	240,000	250,000
Pinal County:							
Part of Santa							
Cruz and Gila							
River basin	660,000	700,000	950,000	1,100,000	1,000,000	1,030,000	950,000
Santa Cruz County:							
Part of Santa Cruz							
River basin	24,000	25,000	28,000	31,000	21,000	30,000	27,000
Yuma County:							
Wellton-Mohawk							
area	38,000	43,000	50,000	45,000	46,000	50,000	40,000
South Gila Valley	32,000	35,000	54,000	56,000	56,000	62,000	60,000
Other e/	4,000	4,000	5,000	8,000	9,000	15,000	26,000
Total	2,437,000	2,563,200	3,140,000	3,215,000	3,412,000	3,681,000	3,662,000

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 1946-51 represents Gila River Valley above Wellton-Mohawk area.

end-of-the-year depth to water in irrigation wells ranged from 30 feet in the southeastern part of the district to about 90 feet in the extreme northwestern part. Pumping lifts during the 1952 irrigation season ranged from about 80 to 145 feet and rates of discharge ranged from 130 to 1,300 gallons per minute. The measured discharge of 31 wells averaged 450 gallons per minute, about 20 gallons per minute per foot of drawdown. Irrigation in the Kansas Settlement district on the eastern side of the Willcox Playa is from artesian wells. Pumping of these wells in 1952 lowered the artesian pressure a net of about 3 feet near the center of heaviest pumping. This district is undergoing a large expansion of the irrigated acreage, and several new irrigation wells were put in operation for the first time in 1952. The discharges of six of these wells were measured, and their average discharge was 1,040 gallons per minute, about 80 gallons per minute per foot of drawdown. The depth to water in these artesian wells ranged from a few feet above the land surface near the playa to more than 90 feet below land surface at the eastern margin of the irrigated area. Water levels in domestic and stock wells in other parts of the Willcox Basin lowered a net average of 0.4 foot. Part of this decline is attributed to the prolonged drought conditions and part to regional unwatering caused by irrigation in the Stewart and Kansas Settlement districts. Figure 17 shows graphically the depth to water in wells (D-14-23)36baa and (D-14-25)6cac and monthly precipitation at Willcox. The water levels in both of the wells have trended downward in the period 1943-52. In 1952 the amount of water-level lowering in them was 0.3 and 0.5 foot, respectively. It is believed that the water level in well (D-14-23)36baa has not been affected by pumping in the irrigated areas, and the lowering is attributed to evapotranspiration. The water level in well (D-14-25)6cac was affected both by pumping and by evapotranspiration. Pumping in the Stewart district intercepted water that otherwise would have moved past the vicinity of this well to the area of natural discharge in the Willcox Playa.

Ground-water levels in the irrigated area of the Douglas Basin declined a net average of 1.8 feet in 1952. The maximum local net lowering in the basin was over 3 feet, in the vicinity of Elfrida. In the vicinity of McNeal and Double Adobe, the net decline ranged from $1\frac{1}{2}$ to 2 feet. The water levels graphed in figure 17 for wells (D-22-26)28bab1 and (D-22-26)28bab2 are representative of water-level changes in this area. In the vicinity of Douglas the lowering of the water table ranged from half a foot to slightly over a foot. The water levels in wells outside the irrigated areas in the basin lowered from a third of a foot to about a foot, the largest declines being in wells nearest the irrigated areas. The graph for well (D-18-26)28aaa (fig. 17) is representative of water-level changes outside the irrigated areas. Pumping lifts in irrigation wells in the basin ranged from 50 to more than 165 feet. The rate of discharge ranged from 80 to 1,500 gallons per minute, and averaged about 380 gallons per minute. Of the wells measured, the discharges averaged about 12 gallons per minute per foot of drawdown. Pumpage in the Douglas Basin amounted to 42,000 acre-feet in 1952. At the end of 1952 the depth to water in irrigation wells in the Douglas Basin ranged from about 25 feet along Whitewater Draw to about 105 feet in those wells farthest from the draw and averaged between 50 and 55 feet.

Coconino County.--Water-levels trended upward in the shallow lava and valley-fill wells of the Flagstaff-Williams area of Coconino County in 1952. The net rise ranged from 0.2 to 3.0 feet and averaged about a foot. The water level in a deep well tapping the Coconino sandstone rose 0.7 foot in 1952. The rise in all the wells is attributed to the higher-than-normal precipitation in the winter of 1951-52, with a resulting increase in recharge of the ground-water supplies. Precipitation at Flagstaff was 20.06 inches in 1952, above normal but less than in 1951.

Gila County.--Water levels in wells in shallow alluvium near Pinal Creek showed net rises of several feet in 1952, the amount of the rises being inversely proportional to the distance of the wells from the creek. Rises occurred during two periods. There was a large rise during the spring months, followed by a decline through the summer and fall. Another rise occurred in November and December. Water-level fluctuations in the deep wells tapping water in the Gila conglomerate indicated little or no change in storage except in local areas of heavy pumping, such as in the vicinity of the city of Globe well fields. Precipitation at Globe was 18.25 inches in 1952, 3.12 inches above normal.

Graham County.--Ground-water levels in the Safford Valley of Graham County showed a net rise of 2.2 feet in 1952, partially offsetting the $4\frac{1}{2}$-foot decline that occurred in 1951. An average net rise of about 5 feet was measured in the San Jose-Safford area; $1\frac{1}{2}$ feet in the Safford-Pima area; 2 feet in the Pima-Cork area; 1 foot in the Cork-Geronimo area; and $1\frac{1}{2}$ feet in the Pima-Eden area. Figure 18 shows graphically the depth to water in selected wells in the valley. In the vicinity of well (D-6-28)31aac the water table rose in response to an increase in recharge during the first 4 months, and then declined because of pumping until at the end of 1952 it was at approximately the same level as at the beginning of the year. This well is in a narrows at the upstream end of the valley and, although the alluvium is permeable, the storage capacity is limited by the small volume of alluvial fill. Consequently, heavy pumping in the vicinity during the summer lowered the water table. The water-level fluctuations in well (D-7-26)22bac (fig. 18), near Lonestar, reflect the relation between recharge and discharge in the Safford-San Jose area. Except for the period May-September, recharge exceeded discharge in the vicinity of this well during 1952, resulting in a net gain in ground-water storage for the year. The water-level fluctuations in well (D-6-24)5acc (fig. 18), which is near an unlined canal in the Pima-Cork area, indicate a rising water level during the first 6 months of 1952. In the summer, the water level

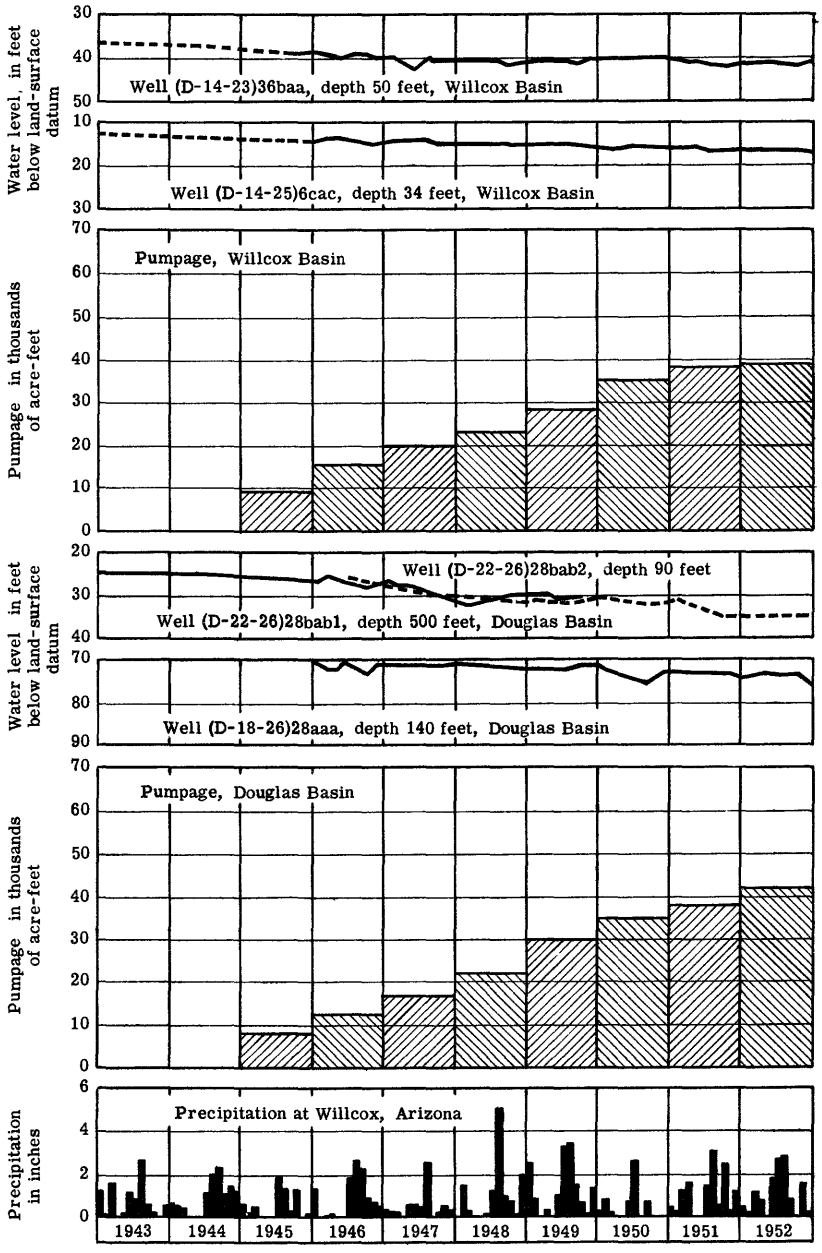


Figure 17.--Water levels in wells, pumpage in Willcox and Douglas Basins, and precipitation at Willcox, Cochise County, Ariz.

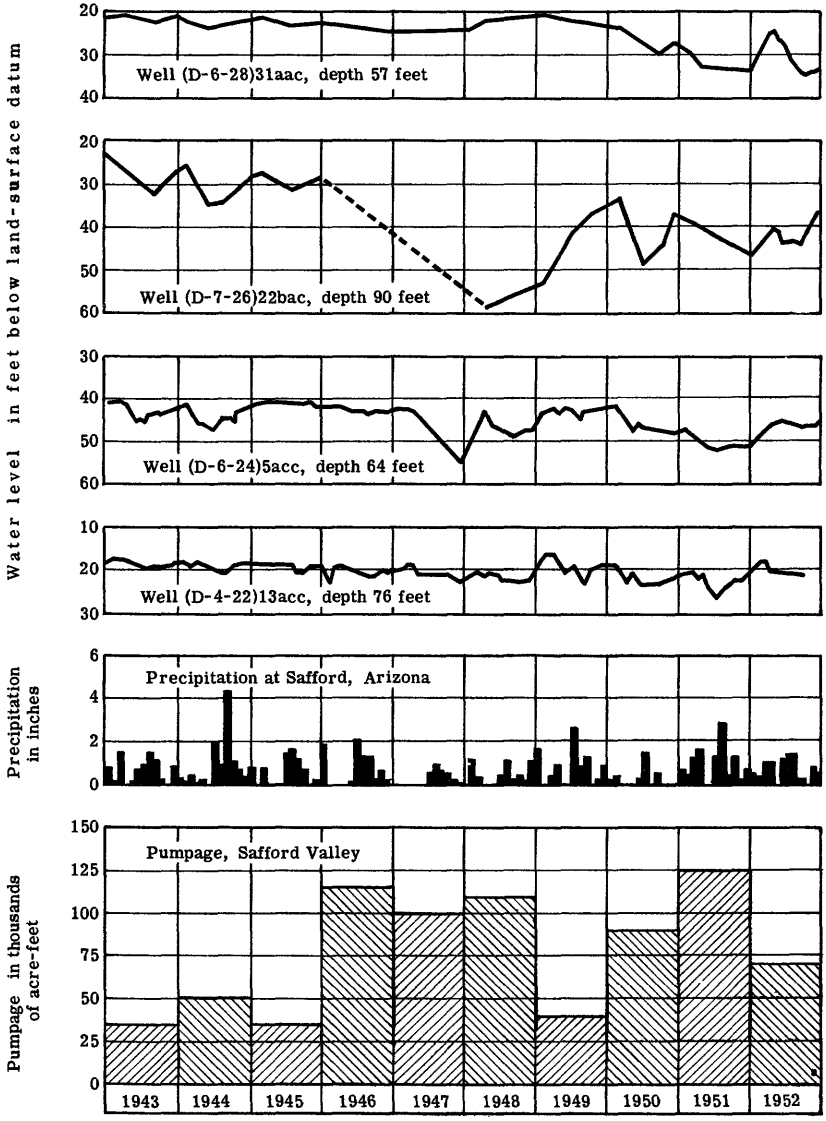


Figure 18.--Water levels in wells, precipitation at Safford, and pumpage in Safford Valley, Graham County, Ariz., 1943-52.

declined when pumping temporarily exceeded recharge, and in the fall there was a slow rise after the pumping season ended. For the entire year there was a net increase in ground water in storage in the vicinity of the well, more than offsetting the decline occurring in 1951. The water-level fluctuations in well (D-4-22)13acc (fig. 18), near the downstream end of the cultivated area, indicate a period of recharge in the spring followed by a period when the discharge by pumping exceeded recharge. Precipitation at Safford was 8.09 inches in 1952, or 0.62 inch below normal. Heavy summer rains reduced the irrigation demand on the ground-water supply. The overall increase in ground-water storage in the Safford Valley in 1952 can be attributed partly to an increase in recharge and partly a decrease in the quantity of ground water pumped. In 1952 the supply of surface water diverted for irrigation was about 130,000 acre-feet, or about five times the amount available in 1951. The pumpage in 1952, 70,000 acre-feet, was slightly more than half the pumpage in 1951. There was a net decrease of between 2 and 3 feet in pressure head in the artesian wells of the Artesia-Cactus Flat area in 1952. The pressure reduction is attributed to an increase in withdrawals of ground water to meet the irrigation requirements of an enlarged acreage under cultivation. Water-level measurements in wells in Aravaipa Valley showed little or no net change in ground-water storage in 1952.

Greenlee County. --Ground-water levels in the Duncan Valley rose an average of 3 feet in 1952. Water-level measurements for 3 typical wells, (D-8-32)34cdd, (D-7-31)4bcc, and (D-8-32)32cda are graphed in figure 19. The summer decline shown in the first well represents a local condition caused by pumping the well shortly before the quarterly measurement. The net rise in water levels resulted from a decreased draft on the ground-water supply and an increase in recharge. Pumpage in 1952 was 17,000 acre-feet, about half the quantity pumped in 1951. Surface-water diversions were about seven times greater in 1952 than in 1951. Precipitation at Duncan was 7.99 inches in 1952, about average. During the 1952 irrigation season, pumping lifts and pump discharges were measured in many of the wells. The lifts ranged from 30 to 60 feet and the discharges, from 150 to 1,700 gallons per minute. Specific capacities were from 5 to 70 gallons per minute per foot of drawdown.

Maricopa County. --Water levels throughout the Salt River Valley continued to decline in 1952 at about the same rate as during the past 5 years, as shown graphically in figure 20. Declines in the Queen Creek-Higley-Gilbert area, which includes a small part of Pinal County, averaged more than 14 feet compared with about 9 feet in the previous year, but part of the apparent increase in rate may be the result of the continued operation of many pumps in the area through the early part of an exceptionally warm winter. Some of the accelerated decline must be attributed to a considerable expansion of cultivated acreage and the increased demand for irrigation water. No surface water is available for irrigation in this area. In the Tempe-Mesa-Chandler area, the average net decline of the water table was only 0.3 foot. This represents a conspicuous decrease in rate of the general downward trend, comparable to the situation occurring in 1944 (see fig. 21). The reason for decreased rate of decline is difficult to define. The supply of surface water available for irrigation was above average during the year, and it is possible that the Tempe-Mesa-Chandler area may be the first to show the effects of recharge from this source. Declines of the water table in the Phoenix-Glendale-Tolleson area averaged 4.7 feet for the year as against 3.0 feet during 1951. By the end of 1952 the total net decline in the area since 1930 amounted to approximately 50 feet, of which about 40 feet has occurred since 1943. In the Litchfield-Beardsley-Marinette area a persistent downward trend, interrupted by a very slight rise in 1951, was resumed in 1952. Net declines in the area during the year averaged 9.1 feet, a rate about the same as the annual average since 1946. Although water levels in the Liberty-Buckeye-Hassayampa area showed an average net decline of almost 3 feet in 1952, they are less than 5 feet lower than in 1930. This area is at the outflow end of the Salt River Valley basin and the water levels are affected by recharge from irrigation water applied over the entire valley.

Pumpage in the Salt River Valley area during 1952 amounted to 2,000,000 acre-feet, the greatest annual figure to date. The increase of almost 100,000 acre-feet over pumpage in 1951 is the result of a longer growing season for the year and also of an increase in the acreage of cultivated land. Rainfall at Phoenix during 1952 amounted to 11.06 inches, about $3\frac{1}{4}$ inches above normal.

Water-level measurements in the Gila Bend and Dendora areas indicate varying declines during 1952, but the records do not cover a period of time sufficient to allow any definite estimate of average decline. Pumpage in the Gila Bend area in 1952 was 120,000 acre-feet, in the Dendora area 6,000 acre-feet. Precipitation at Gila Bend was 6.30 inches, 0.79 inch above normal.

Mohave County. --Water levels in wells in the Big Sandy Valley, Hackberry-Valentine area, and Kingman area showed seasonal changes, but at the end of 1952 were approximately the same as the end-of-the-year levels in 1951. Declines generally did not exceed 0.2 foot. Precipitation at Kingman was 10.10 inches in 1952, approximately normal.

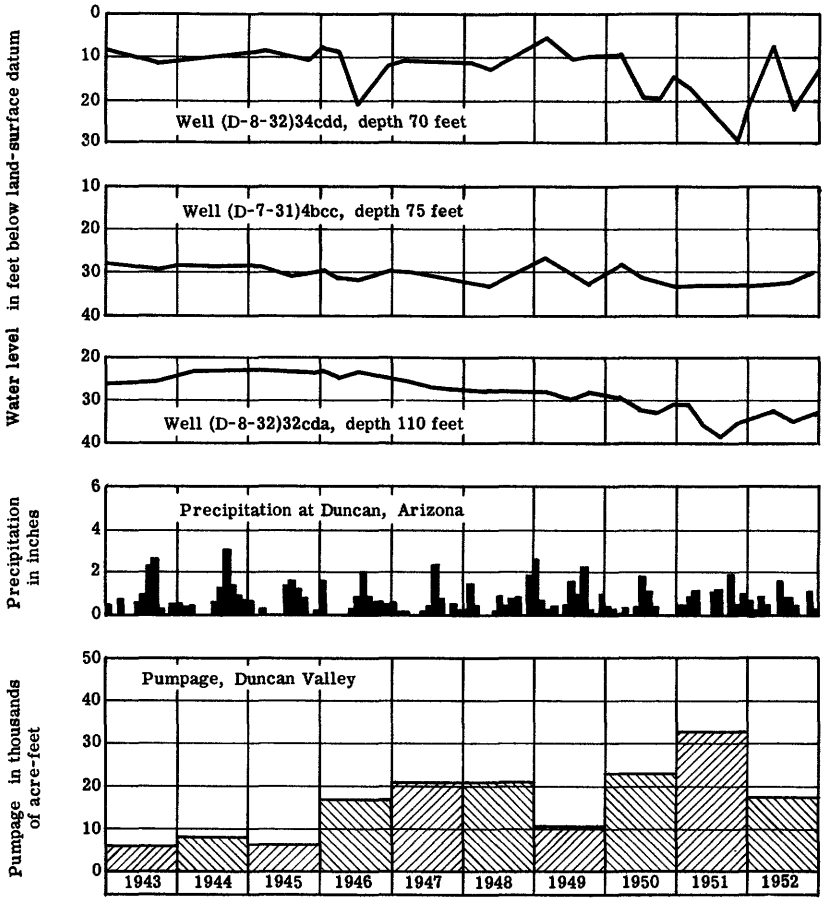


Figure 19. --Water levels in wells, precipitation at Duncan, and pumpage in Duncan Valley, Greenlee County, Ariz., 1943-52.

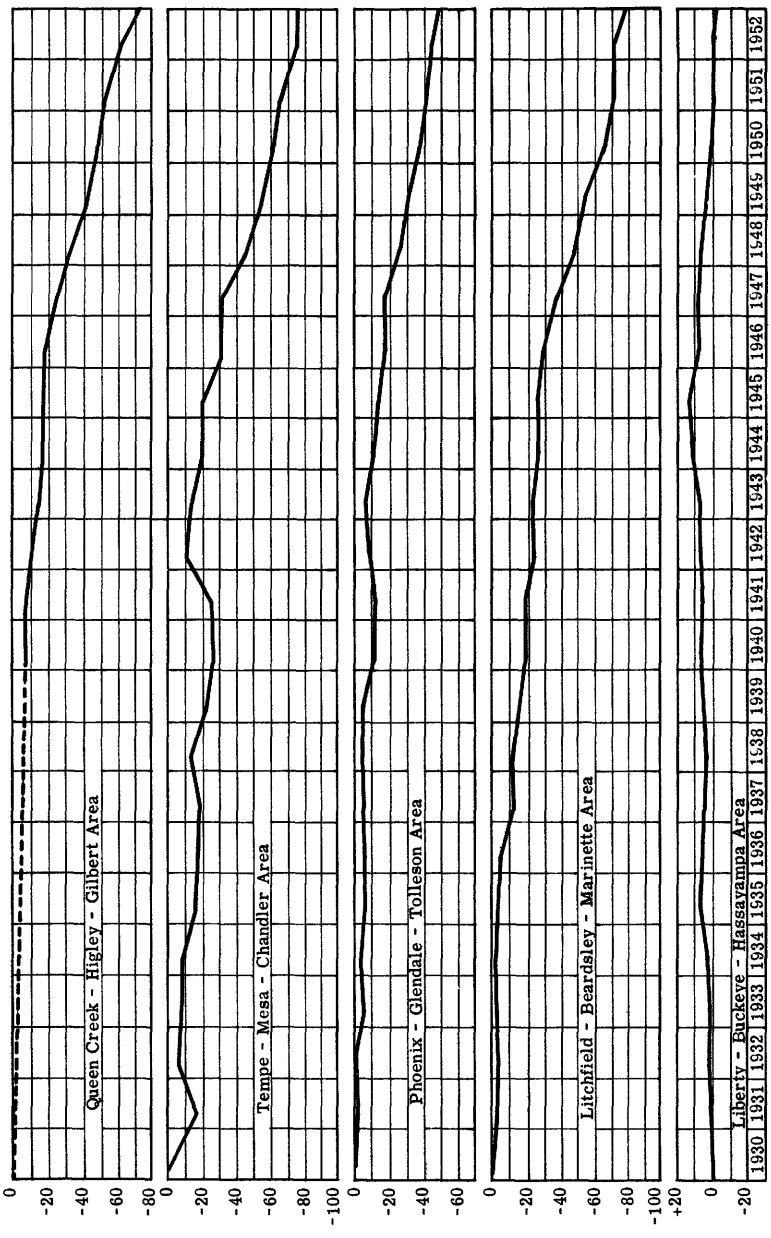


Figure 20. --Cumulative net changes of average water level in various parts of Salt River Valley, Maricopa County, Ariz., 1930-52.

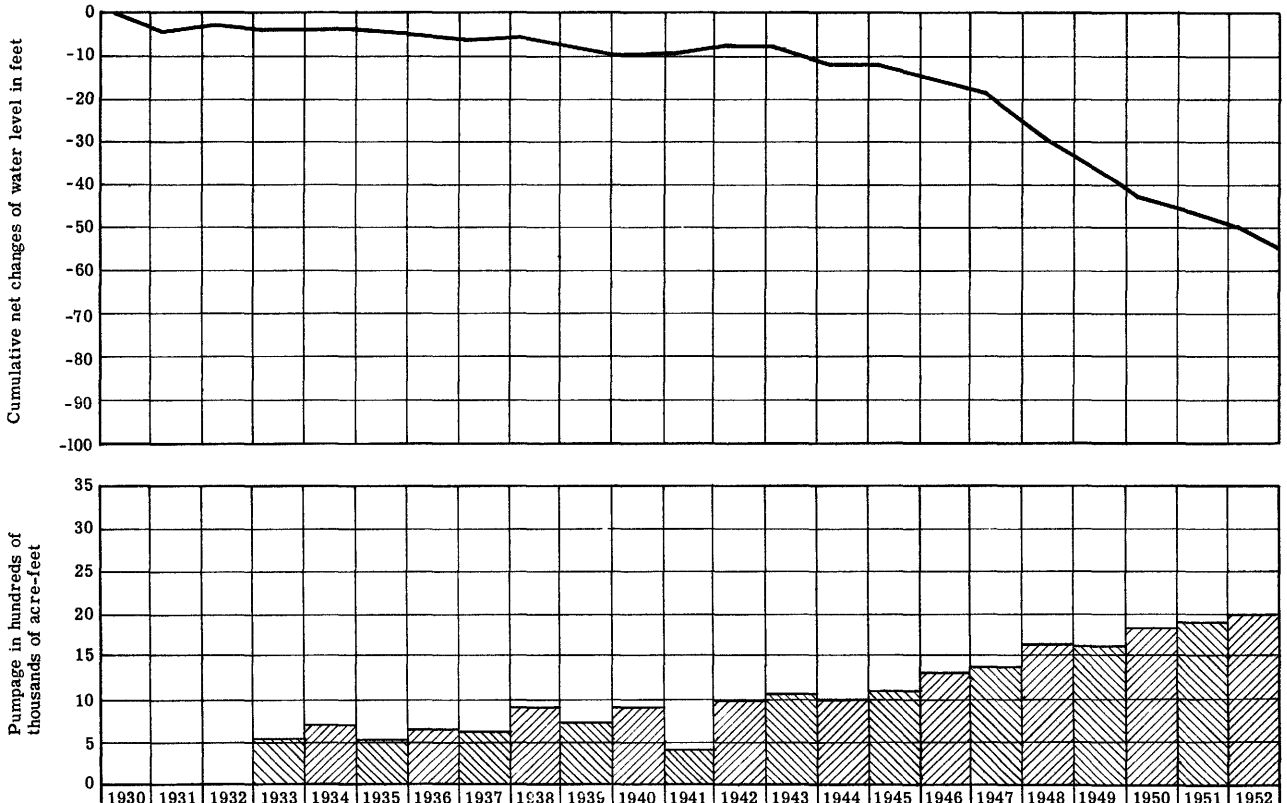


Figure 21.--Cumulative net changes of average water level and pumpage for irrigation in Salt River Valley, Maricopa County, Ariz., 1930-52.

Navajo County. --Water levels in wells in the Coconino sandstone in the vicinity of Holbrook lowered slightly during 1952, the net declines averaging 0.2 foot. Pumping for irrigation and municipal use caused the slight local decrease in ground-water storage in the area. Water-level fluctuations in wells tapping the Coconino sandstone in the Snowflake-Taylor-Shumway area were largely seasonal and no net change in storage was detected. Water levels in wells in alluvium along the Little Colorado River declined less than a foot. Precipitation at Holbrook in 1952 was 9.81 inches, 1.75 inches above normal.

Pima County. --Fluctuations of ground-water levels in Pima County are discussed by areas, as follows: (1) Avra-Marana area; (2) Tucson-Cortaro area; (3) Tucson area; (4) Tucson-Continental area; (5) Rillito-Tanque Verde Creek area; and (6) Pantano Wash area.

Water levels in wells in the Avra-Marana area declined to a record low in 1952. In the sector between the Santa Cruz River and the Pima-Pinal County line the net declines averaged about 6 feet. The declines decreased in magnitude southward and, near the Tucson-Ajo highway, were less than half a foot. Near the centers of heavy pumping there were local net declines of as much as 15 feet in 1952, believed to be the result of late pumping during a long growing season. The depth to water in irrigation wells in the Avra-Marana area ranged from 150 to 295 feet. The shallower depths to water are in the extreme northwestern and southern parts of the area, and the greater depths are in the central part. The water-level fluctuations in well (D-15-10)35aaa are shown graphically in figure 22, and are representative of wells in the southern part of the area.

Water levels in wells in the Tucson-Cortaro area declined between 1.5 and about 6 feet in 1952 and averaged a net of between 3 and 4 feet. The largest declines were in the southern part of the area, near Tucson. Water-level fluctuations in well (D-12-12)16bad, shown graphically in figure 22, are representative for this area. The depth to water in irrigation wells in the Tucson-Cortaro area ranges from 60 feet near Tucson to 110 feet north of Cortaro, and averages about 85 feet.

Ground-water levels in the Tucson area were lower at the end of 1952 than for any previous year of record. The water level in well (D-15-13)2cca, in the city of Tucson well field south of the city, lowered a net of 1.6 feet during 1952 (fig. 22). Measurements supplied by the city of Tucson indicate that the average net decline in this well field amounted to about 3 feet in 1952. The depth to water in wells in the Tucson area ranged from about 40 feet near the Santa Cruz River to about 140 feet near the eastern city limits in December 1952.

Net declines in water levels in irrigation wells in the Tucson-Continental area ranged from 1 to 5 feet in 1952, and averaged about 3.3 feet. The largest declines were in wells between Sahuarita and Continental and amounted to as much as 7 feet. Water-level fluctuations in well (D-17-14)18cab, shown graphically in figure 22, are representative for the vicinity of Sahuarita. Near the Pima-Santa Cruz County line, south of Continental, the net decline in ground-water levels was less than 2 feet. At the end of 1952 the depth to water in irrigation wells in the Tucson-Continental area ranged from about 15 feet, along the river near San Xavier Mission, to about 120 feet in wells farthest from the river between Sahuarita and Continental, and averaged about 60 feet.

Water levels rose between 1 and 3 feet in wells in the Tanque Verde sector of the Rillito-Tanque Verde Creek area during 1952, the rise apparently being due to recharge from runoff in Rillito Creek and its tributaries. Downstream along Rillito Creek, pumping for irrigation, municipal, and domestic use caused water levels to decline a net of between 3 and 6 feet. The depth to water in wells along Rillito Creek ranged from 20 to 85 feet, and averaged about 60 feet at the end of 1952. Along Tanque Verde Creek the depth to water in wells ranged between 10 and 40 feet, and averaged about 20 feet.

Water levels in wells in the Pantano Wash area generally declined in 1952, from a fraction of a foot in the upper reaches to about 2 feet near the junction of Pantano Wash with Rillito Creek. The depth to water in wells in the Pantano Wash drainage area ranges from about 30 feet near the junction with Rillito Creek to over 400 feet in the upland areas.

According to data collected by the Soil Conservation Service, U. S. Department of Agriculture, a total of 81,000 acres was under cultivation in Pima County by the end of 1952. Pumpage in the county was 250,000 acre-feet in 1952, a slight increase over 1951. The increase is attributed to development of new lands for irrigation in the Avra-Marana area and to a slight increase for municipal use in the Tucson area. Precipitation at Tucson was 10.62 inches in 1952, about a quarter of an inch above normal.

Pinal County. --Changes in ground-water levels in the Lower Santa Cruz area of Pinal County are more difficult to evaluate for 1952 than for any previous year of record. Continuation of pumping through the end of the year, owing to a long growing season, caused a distortion in the water-level recovery pattern. A plot of the contours of the water table at the end of the year shows numerous bowl-shaped depressions in the water table. Average decline of the water table in the three major areas is shown by graphs in figure 23.

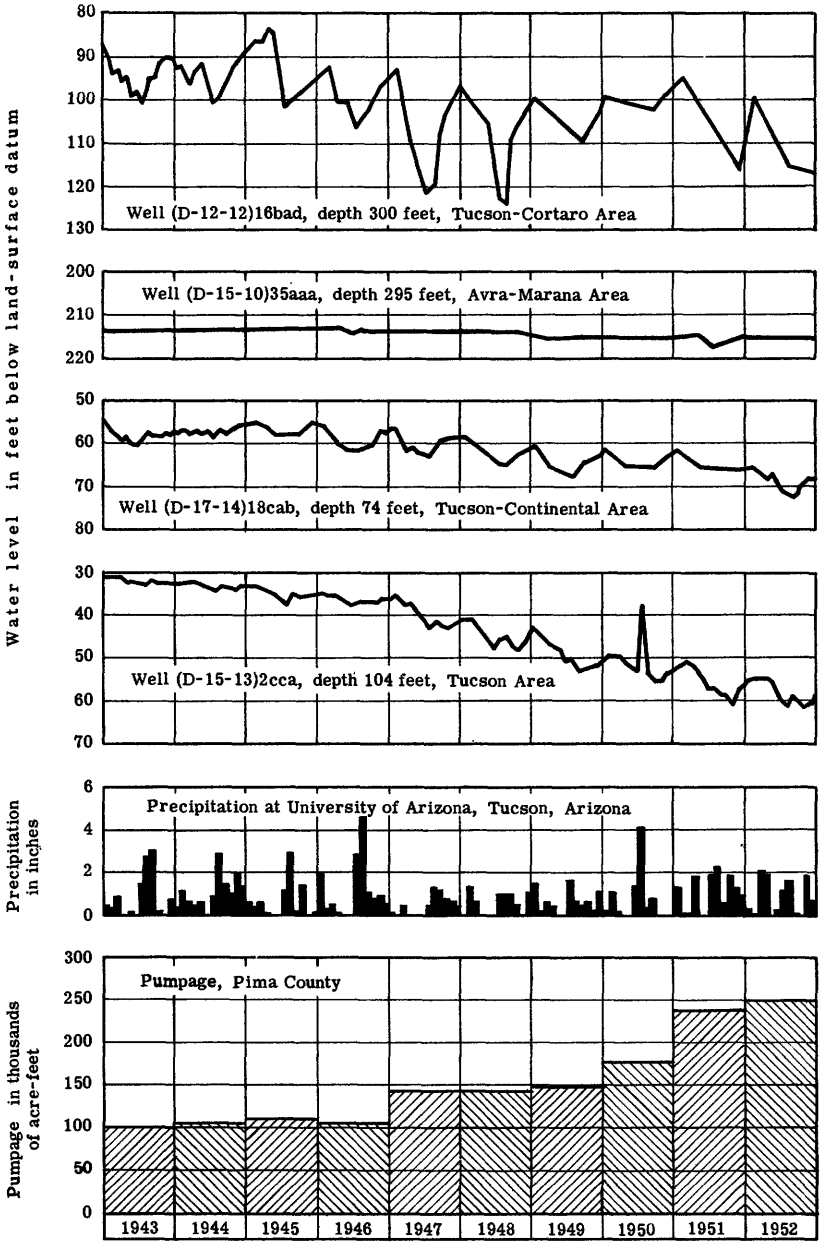


Figure 22.--Water levels in wells in the Tucson-Cortaro, Avra-Marana, and Tucson-Continental areas, precipitation at Tucson, and pumpage, Pima County, Ariz., 1943-52.

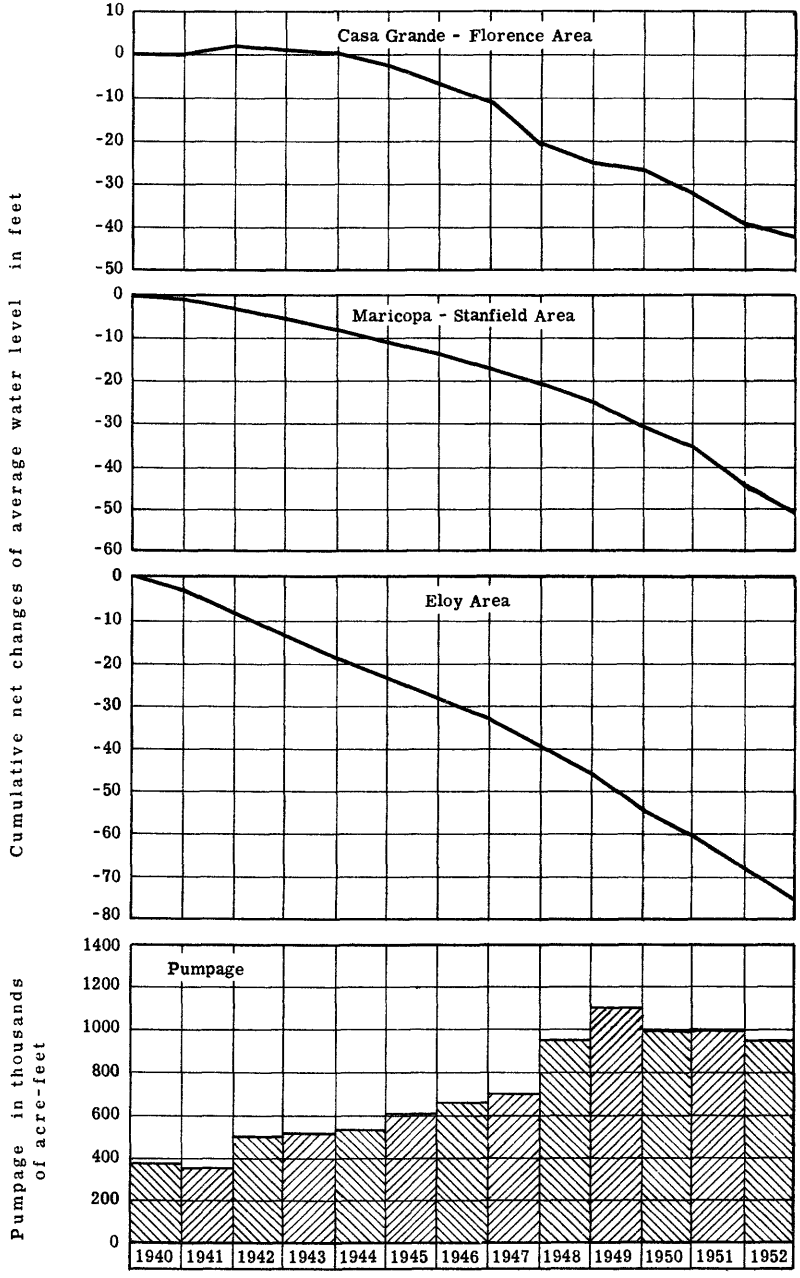


Figure 23. --Cumulative net changes of average water level and pumpage in portions of Santa Cruz Basin within Pinal County, Ariz., 1940-52.

In the Eloy area, two major depressions indicate that between Eloy and the Florence-Casa Grande canal there was a maximum decline of 18 feet and an average decline of 14 feet, and that south of Eloy there was a maximum of 16 feet and an average of 10 feet. These declines are greatly in excess of the average decline of $7\frac{1}{2}$ feet for 1951 for the entire Eloy area. Net declines in ground-water levels between Picacho Peak and the Silver Reef Mountains averaged about $5\frac{1}{2}$ feet in 1952, or about 1 foot greater than in 1951.

A large depression in the water table in the Maricopa-Stanfield area, south of State Highway 84, indicated a maximum decline of 16 feet and an average of about 12 feet. In the part of the Maricopa-Stanfield area between State Highway 84 and the southern boundary of the Maricopa Indian Reservation the declines ranged from 8 to 34 feet and averaged about 15 feet. The decline ranged from about 4 feet to about 8 feet in the vicinity of the town of Maricopa. Net declines of 10 to 15 feet were common in wells along the western side of the Maricopa-Stanfield area.

In the Casa Grande-Florence area there were both declines and rises in 1952. Between Casa Grande and Coolidge the declines ranged from 5 to 20 feet and averaged about 9 feet. Between Coolidge and Florence the declines ranged from 1 to 7 feet, and averaged about 3 feet. Between Florence and Ashurst-Hayden Dam the general water-level trend was upward, with net rises of 1 to 15 feet. These rises are attributed to increased recharge resulting from an increase in the amount of surface water in the Gila River and the Florence-Casa Grande Canal, and from water applied for irrigation. Water-level fluctuations in wells in the vicinity of Sacaton ranged from a rise of 1 foot to a decline of about 4 feet. The rises were in the eastern part of the area and the declines were in the western part of the area.

The depths to water in irrigation wells at the end of 1952 in the Lower Santa Cruz area were by areas: Eloy area, 90-250 feet; Maricopa-Stanfield area, 40-340 feet; Case Grande-Florence area, 25-160 feet; and Sacaton area, 40-90 feet. There is a wide range in the rate of discharge from irrigation wells in the Lower Santa Cruz area of Pinal County. The discharge from 85 wells measured in the Eloy area averaged 1,160 gallons per minute; from 74 wells in the Maricopa-Stanfield area, 1,490 gallons per minute; and from 30 wells in the Casa Grande-Florence-Sacaton area, 880 gallons per minute. The range in discharge was from 300 to 3,000 gallons per minute. Approximately 1,550 irrigation wells were in use in Pinal County in 1952. The quantity of ground water pumped in the Lower Santa Cruz area of Pinal County in 1952 was 950,000 acre-feet, a decrease of about 8 percent from 1951. The decrease may be due to greater difficulty in withdrawing water, owing to the accumulated decline of the water table that has occurred in the past several years.

Precipitation at Casa Grande, approximately at the center of the cultivated part of Pinal County, was 10.74 inches in 1952, almost 3 inches above normal. The excess precipitation may have slightly reduced the demand on the ground-water supply.

Santa Cruz County.--Ground-water levels in the Santa Cruz River valley of Santa Cruz County declined in 1952. The year ended with net declines averaging 0.5 foot between the International Boundary and Calabasas; 1.0 foot between Calabasas and Tubac; and 1.1 feet between Tubac and the Santa Cruz-Pima County line. Water levels shown graphically in figure 24 for wells (D-22-13)35dcd and (D-23-14)27baa are representative of changes in water levels in irrigation wells in the Calabasas-Tubac and International Boundary-Calabasas areas, respectively. The large decline in well (D-22-13)35dcd, indicated by a measurement in September, is a local anomaly resulting from pumping the well prior to the measurement. Water levels in wells along Sonoita Creek declined generally less than half a foot in 1952.

Pumpage in Santa Cruz County in 1952 was 27,000 acre-feet, about 10 percent less than in 1951. The decrease is attributed partly to a more uniform storm pattern than usual, so that a greater portion of the summer rains increased soil moisture and less became flood runoff. Precipitation at Nogales in 1952 was 14.92 inches, about an inch below normal.

Yavapai County.--Water levels in observation wells in Yavapai County fluctuated widely in 1952, and ranged from a decline of about 6 feet in a well near Yava to a rise of over 17 feet in a well in Peeples Valley. Precipitation at Prescott was 19.57 inches in 1952, about half an inch below normal.

Yuma County.--Water levels in wells in the Ranegras Plain area of northern Yuma County showed an average net decline of 0.5 foot in 1952. The hydrograph of water levels in well (B-5-16)10ddd shows little fluctuation since 1946, due to the fact that the well is approximately 2 miles from the nearest irrigation wells, and the cone of depression caused by pumping has not yet spread far enough to affect water levels at that distance. There are insufficient data to enable an estimate of the pumpage in Ranegras Plain. In the Wellton-Mohawk area of the Gila River Valley, in southern Yuma County, water levels showed a net decline of 1.3 feet in 1952, compared with a decline of half a foot the previous year. The introduction of surface water for irrigation of this area will probably reverse the downward trend within another year. Fluctuations in a typical well, (C-7-16)33aaa, are graphed in figure 25. Pumpage in the Wellton-Mohawk area amounted to about 40,000 acre-feet during the year. In the South Gila Valley and the Yuma-Mesa area, water levels continued the rise shown in previous years. This rise is attributable to

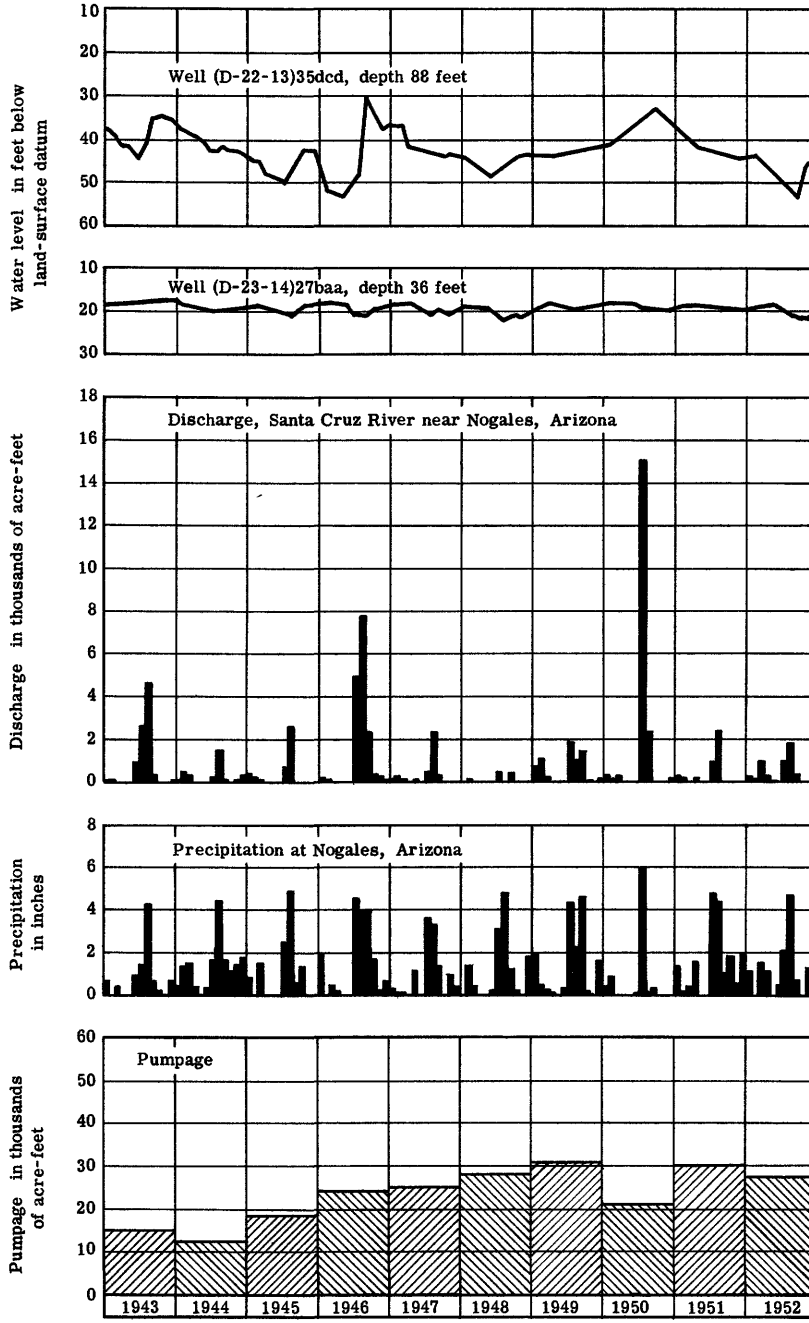


Figure 24.--Water levels in wells in the Santa Cruz Valley, discharge of Santa Cruz River near Nogales, precipitation at Nogales, and pumpage in Santa Cruz County, Ariz., 1943-52.

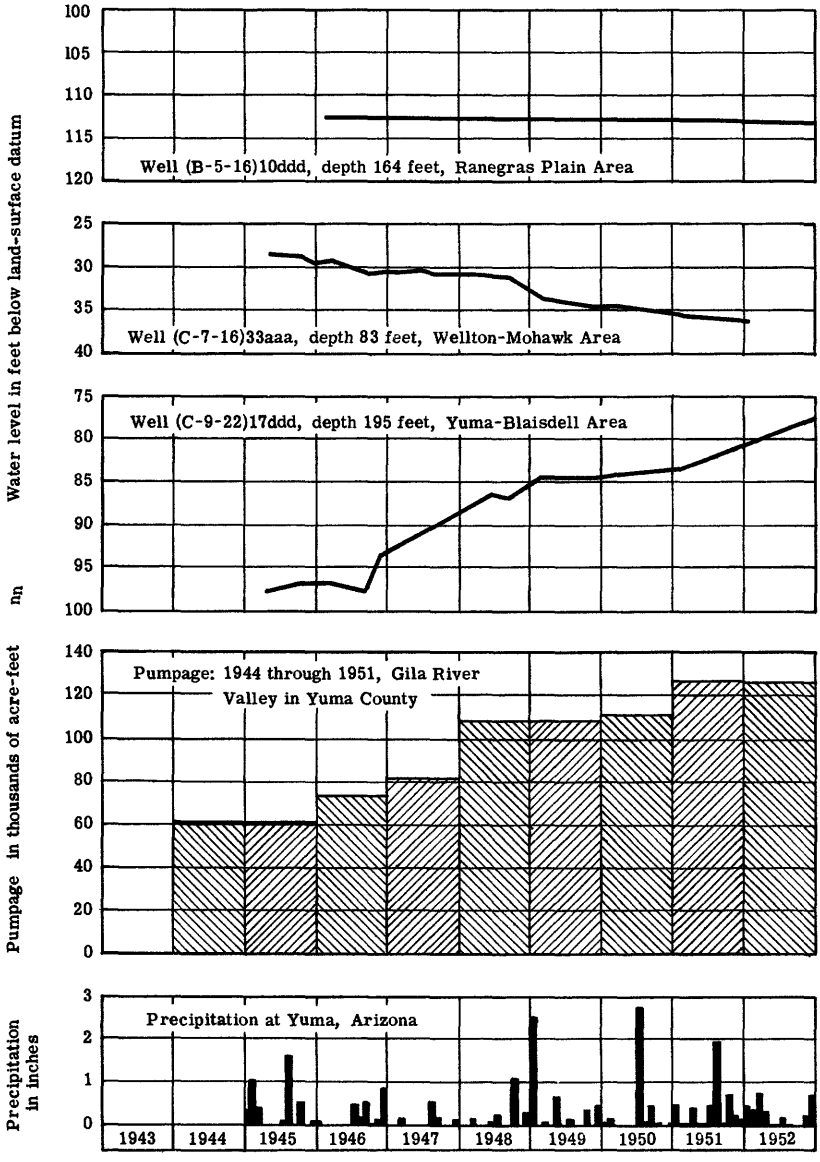


Figure 25. --Water levels in wells in Ranegras Plain, Wellton-Mohawk, and Yuma-Blaisdell areas, pumpage in Lower Gila Valley, and precipitation at Yuma, Yuma County, Ariz.

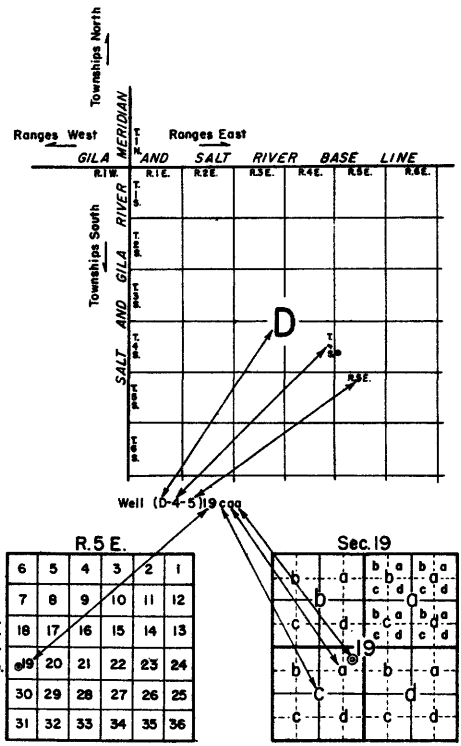


Figure 26.--Sketch showing well-numbering system of Arizona, 1952.

recharge from water used for irrigation, and the net average rise in the area was about 0.9 foot. Fluctuations of the water level in well (C-9-22)17ddd are typical for the area (fig. 25). Pumpage from wells in the South Gila Valley amounted to about 60,000 acre-feet in 1952. Precipitation at Yuma during the year was 3.79 inches, about 5 percent above normal. Total pumpage of ground water in the county, not including Ranegras Plain, was 126,000 acre-feet in 1952.

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 the figures for pumpage were based: Arizona Public Service Company; Buckeye Irrigation District; Bu-Gas Distributors; Citizens Utility Company; City of Douglas; City of Nogales; City of Tucson; Cortaro Farms; Duncan Utilities Company; Eloy Light and Power Company; Gila Water Commissioner; Goodyear Farms; Maricopa County Municipal Water Conservation District; Mohawk Municipal Water Conservation District; Natural Gas Service Company; 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 Company; 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--following 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. When 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. (See fig. 26.) 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: 1944-52. July 2, 17.60.

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 30.13 below lsd, Oct. 14, 1952. Records available: 1941-42, 1944, 1946-47, 1949-52. May 6, 28.80; Oct. 14, 30.13.

(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 63.81 below lsd, Oct. 14, 1952. Records available: 1940-42, 1944, 1946-52. May 20, 63.27; Oct. 14, 63.81.

(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, 1944-52. Jan. 28, 41.01; Apr. 23, 40.69; June 2, 40.98; July 29, 41.77; Oct. 17, 41.70.

(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 16.55 below lsd, July 29, 1952. Records available: 1942, 1944-52. Jan. 28, 16.30; Apr. 23, 16.27; June 2, 16.36; July 29, 16.55; Oct. 17, 16.49.

(D-14-31)3ddd. Formerly 4606. A. G. Pierce. Drilled unused artesian well in sand and clay, diameter 8 inches, reported depth 400 feet. Highest water level 17.20 below lsd, Apr. 24, 1942; lowest 39.75 below lsd, Oct. 15, 1952. Records available: 1941-42, 1946-52. Mar. 8, 1951, 27.16; May 26, 32.17; Aug. 28, 34.05; Oct. 17, 34.68; Jan. 15, 1952, 28.18; May 20, 33.19; Oct. 15, 39.75.

(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 82.81 below lsd, Apr. 16, 1952. Records available: 1941-42, 1944-52. Apr. 16, 82.81; Sept. 9, 82.49; Nov. 18, 81.91.

(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 38.30 below lsd, Aug. 30, 1948. Records available: 1942, 1944-52. Jan. 29, 36.87; Apr. 23, 36.85; June 3, 36.62; Aug. 4, 38.20; Oct. 22, 38.06.

(D-17-20)10ccc. City of Benson. Drilled unused artesian well in sand and gravel, diameter 4 inches, reported depth 700 feet. Highest water level 6.06 below lsd, Jan. 20, 1952; lowest 19.75 below lsd, June 18, 1950. Records available: 1944-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.67	6.69	6.94	9.48	9.99	13.47	16.05	11.94	13.01	.....	11.76	9.62
2	6.61	6.59	6.29	9.71	10.32	11.42	15.62	13.25	13.36	.....	12.15	9.56
3	6.55	6.64	6.52	9.46	10.80	10.39	15.84	14.11	12.86	.....	12.47	9.35
4	6.62	6.80	6.65	9.88	10.66	10.27	16.17	13.59	13.70	.....	12.30	9.58
5	6.43	7.07	6.52	10.43	10.90	10.04	15.44	12.65	14.94	.....	11.92	9.22
6	6.37	6.89	6.52	10.05	10.42	10.78	15.22	13.35	15.39	.....	11.60	9.38
7	6.57	6.73	6.73	9.74	.....	11.97	14.34	13.42	14.75	.....	11.33	9.84
8	6.65	6.56	7.95	9.59	11.40	12.57	14.00	12.81	15.09	.....	12.05	9.96
9	6.77	7.14	8.28	9.91	.....	12.10	14.67	12.80	15.50	.....	11.86	9.79
10	6.63	6.76	7.82	9.53	11.53	13.07	15.21	12.41	14.86	.....	11.11	9.88
11	6.58	6.41	7.68	9.02	11.00	13.67	15.59	12.15	14.47	.....	10.43	9.90
12	6.57	6.66	7.51	9.18	11.08	14.45	14.74	11.75	14.23	.....	10.48	10.63
13	6.30	6.53	7.40	9.63	.....	14.68	15.20	11.28	14.16	.....	10.36	10.30
14	6.56	6.37	7.27	9.41	11.49	14.88	15.38	11.19	14.75	.....	10.15	10.23
15	6.52	6.41	7.12	10.23	.....	14.96	15.63	11.80	13.90	.....	10.71	10.21
16	6.49	6.34	7.32	9.71	.....	14.97	16.20	11.42	13.71	.....	9.92	10.25
17	6.19	6.80	7.28	10.36	11.49	15.16	16.88	10.98	14.72	.....	9.89	10.08
18	6.23	6.88	7.17	10.01	10.87	15.25	.....	10.50	14.46	.....	9.77	9.60
19	6.31	6.71	7.15	9.38	11.00	15.44	.....	10.58	15.16	.....	9.67	9.76
20	6.06	6.60	7.52	8.82	10.64	15.49	.....	.....	14.51	11.99	9.50	9.74
21	6.24	6.86	7.47	8.76	.....	15.66	.....	.....	12.78	12.20	9.27	9.59
22	6.14	6.84	7.44	8.56	11.79	15.71	15.58	.....	12.92	12.04	9.60	9.86
23	6.19	6.88	7.27	8.53	.....	15.67	14.88	.....	12.18	12.46	9.49	9.37
24	6.25	6.91	8.13	9.15	12.76	15.87	14.03	.....	12.11	12.64	9.59	9.50
25	6.30	7.42	7.80	8.75	13.02	15.70	13.41	12.30	12.15	12.78	9.65	9.52
26	6.29	7.29	7.76	8.83	12.72	15.82	13.08	12.19	11.85	12.50	9.26	9.94
27	6.84	7.10	8.37	8.68	12.48	16.09	12.40	11.87	.....	12.48	8.77	9.58
28	6.55	6.97	8.58	8.55	13.54	16.06	12.14	12.24	.....	12.50	8.89	9.50
29	6.71	7.12	9.24	9.07	13.25	15.20	11.70	12.39	.....	11.90	9.48	9.63
30	6.65		8.89	10.44	13.88	15.14	11.17	12.93	.....	12.10	9.56	9.66
31	6.74		8.79		13.21		11.48	12.71		12.40		9.56

(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: 1944-52. Jan. 31, 18.90; May 14, 19.40, pumping; Sept. 15, 20.52, pumping; Dec. 2, 19.23.

(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 32.77 below lsd, Jan. 31, 1952. Records available: 1944-52. Jan. 31, 32.77; May 14, 31.74; Sept. 15, 35.53, pumping; Dec. 2, 34.25, pumped recently.

(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 73.50 below lsd, Oct. 22, 1952. Records available: 1946-52. Jan. 13, 73.85, pumping; Jan. 18, 79.64, pumping; Apr. 22, 73.02; June 9, 73.03; July 29, 73.44; Oct. 22, 73.50.

(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 91.99 below lsd, Dec. 19, 1950. Records available: 1941-43, 1945-52. Jan. 31, 91.48; May 14, 91.07; Sept. 15, 91.88; Dec. 2, 91.51.

(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 46.25 below lsd, July 29, 1952. Records available: 1942, 1944-52. Apr. 9, 43.17, nearby well being pumped; Apr. 22, 42.84; June 9, 43.84; July 29, 46.25; Oct. 15, 45.64.

(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 26.85 below lsd, Jan. 31, 1952; lowest 30.69 below lsd, Apr. 9, 1941. Records available: 1941, 1944-52. Jan. 31, 26.85; May 14, 27.14; Sept. 15, 27.41; Dec. 2, 27.46, nearby well being pumped.

(D-21-26)24baa. McNeal Cemetery. Drilled domestic water-table well in sand and gravel, diameter 8 inches, depth 136 feet. Land-surface datum is 4,195.8 feet above msl. Highest water level 112.00 below lsd, Jan. 31, 1946; lowest 121.44 below lsd, Oct. 17, 1952. Records available: 1946-52. Jan. 14, 121.43; Apr. 22, 121.24; June 9, 119.95; July 29, 120.54; Oct. 17, 121.44.

(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 35.55 below lsd, Oct. 15, 1951. Records available: 1946-47, 1949-51. No measurement made in 1952.

(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 60.48 below lsd, Oct. 11, 1949. Records available: 1942, 1944-52. Apr. 21, 58.37; June 9, 58.92; July 29, 59.20.

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. No measurement made in 1952.

(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: 1944-52. July 5, 131.13.

Gila County

(A-1-15)9aad. Kenneth Hoopes. Drilled unused 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: 1945-52. Jan. 14, 76.14; Apr. 9, 39.25; June 25, 42.15; Oct. 27, 62.58.

(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: 1946-52. Apr. 9, 4.17; June 25, 6.45; Oct. 27, 19.48.

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 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. Jan. 28, 20.20; Mar. 3, 18.49; Mar. 31, 18.45; Apr. 28, 20.70; Sept. 29, 21.50.

(D-4-22)35ddd. Pat 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, 1946-52. Jan. 22, 31.78; Aug. 26, 33.12, pumped recently; Dec. 3, 33.62.

(D-4-23)29adc. Silas Jarvis. Formerly Ben Montierth. 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, May 18, 1941; lowest 63.23 below lsd, Feb. 15, 1948. Records available: 1940-52.

(D-4-23)29adc--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Apr. 28	55.20	July 28	57.07	Sept. 29	57.61	Dec. 3	54.98
May 8	54.48	Aug. 26	57.12	Dec. 1	54.56	29	53.80
June 2	53.55						

(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: 1940-52.

Jan. 28	50.30	Apr. 27	46.01	Sept. 29	46.90	Dec. 1	46.17
Mar. 3	48.32	June 2	45.20	Oct. 27	46.28	29	45.92
31	47.31						

(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, 1942-52.

Jan. 22	45.79	June 2	38.78	Sept. 29	38.30	Dec. 1	39.12
Apr. 28	42.90	July 28	37.72	Oct. 27	38.80	3	39.17
May 8	41.80	Aug. 26	37.84				

(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 18.27 below lsd, Oct. 11, 1950. Records available: 1939-46, 1948-50, 1952.

Jan. 22	17.74	June 30	15.55	Oct. 27	17.60	Dec. 3	17.06
May 7	14.72	Sept. 1	17.65	Dec. 1	17.12	29	16.88
June 2	16.40	29	17.06				

(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 34.56 below lsd, Oct. 27, 1952. Records available: 1940-52.

Jan. 22	33.82	June 2	26.24	Aug. 25	31.79	Oct. 27	34.56
Apr. 28	25.20	30	26.68	Sept. 1	31.13	Dec. 1	34.07
May 7	24.34	July 28	28.43	29	34.00	29	33.57

(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 51.02 below lsd, Apr. 28, 1948. Records available: 1940-52.

Jan. 24	41.22	June 2	31.00	Sept. 29	33.02	Dec. 1	27.30
Apr. 28	29.08	Aug. 25	36.03	Oct. 27	29.03	29	26.08

(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 58.23 below lsd, Apr. 28, 1948. Records available: 1940-52.

Jan. 24	46.64	June 3	41.39	Sept. 1	43.70	Dec. 1	38.18
Apr. 25	41.60	30	43.71	29	43.85	29	36.35
May 7	40.41	Aug. 25	43.44	Oct. 27	41.75		

(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 29.74 below lsd, July 22, 1947. Records available: 1940-50, 1952.

Jan. 22	25.17	June 2	13.16	Sept. 1	28.04	Dec. 1	22.11
Apr. 28	14.58	Aug. 25	26.52	29	27.68	29	20.75
May 7	14.13						

Greenlee County

(D-3-31)7bdd. Warner Foote. Driven observation water-table well in sand and gravel, diameter 1 inch, depth 15 feet. Land-surface datum is 3,452.2 feet above msl. Highest water level 4.78 below lsd, Mar. 1, 1949; lowest 9.03 below lsd, July 23, 1947. Records available: 1941-52. Jan. 23, 5.65; May 6, 5.94. Measurement discontinued.

(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 33.31 below lsd, Dec. 28, 1950. Records available: 1939-43, 1945-52. Jan. 23, 33.16; Aug. 27, 32.14; Dec. 2, 29.47.

(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 feet above msl. Highest water level 22.68 below lsd, Mar. 15, 1945; lowest 38.56 below lsd, Aug. 27, 1951. Records available: 1939-52. Jan. 23, 34.29; May 6, 32.91; Aug. 27, 34.85; Dec. 2, 33.86.

(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 22.28 below lsd, Aug. 27, 1952. Records available: 1939-43, 1945-52. Jan. 23, 20.00; May 6, 7.48; Aug. 27, 22.28; Dec. 2, 15.05.

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. Jan. 24, 91.54.

(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 76.30 below lsd, Oct. 29, 1952. Records available: 1946-52. Jan. 21, 66.59; Oct. 29, 76.30.

(A-1-6)23daa. Logan Stillwell. Drilled domestic water-table well in sand and gravel, diameter 10 inches, depth 408 feet, perforations 308-328. Land-surface datum is 1,375.7 feet above msl. Highest water level 229.20 below lsd, Mar. 19, 1946; lowest 316.64 below lsd, Nov. 12, 1952. Records available: 1946, 1948-52. Jan. 17, 298.30; Apr. 16, 300.68; Nov. 12, 316.64.

(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 111.03 below lsd, Oct. 23, 1952. Records available: 1946-52. Jan. 23, 94.89; Oct. 23, 111.03.

(A-3-2)12caa. John M. Jacobs. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 417 feet, perforations 179-390. Land-surface datum is 1,309.7 feet above msl. Highest water level 253.96 below lsd, Feb. 21, 1949; lowest 312.73 below lsd, Oct. 23, 1952. Records available: 1948-52. Jan. 23, 296.01; Oct. 23, 312.73.

(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: 1946-52. Jan. 25, 171.05; Oct. 21, 171.46.

(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, 1947-52. Jan. 30, 63.52; Nov. 3, 68.55.

(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: 1928-52. Jan. 30, 63.11; Nov. 3, 76.32.

(B-2-1)13cba. R. E. McMurchy. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 143 feet. Highest water level 58.56 below lsd, June 27, 1946; lowest 108.22 below lsd, Dec. 21, 1950. Records available: 1946-52. Jan. 29, 100.75. 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 239.39 below lsd, Nov. 20, 1952. Records available: 1940-42, 1946-52. Jan. 29, 230.44; Nov. 20, 239.39.

(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 228.00 below lsd, Jan. 28, 1952. Records available: 1938, 1940-42, 1944, 1946-52. Jan. 28, 228.00; Nov. 19, 227.70.

(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 79.94 below lsd, Nov. 6, 1952. Records available: 1946-52. Jan. 30, 72.67; Nov. 6, 79.94.

(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 182.45 below lsd, Dec. 11, 1952. Records available: 1949-52. Feb. 5, 180.74, Dec. 11, 182.45.

(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, Feb. 18, 1946; lowest 142.60 below lsd, Oct. 28, 1952. Records available: 1945-52. Jan. 21, 133.55; Oct. 28, 142.60.

(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 138.46 below lsd, Nov. 13, 1952. Records available: 1939-52. Jan. 17, 133.69; Nov. 13, 138.46.

(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 feet above msl. Highest water level 40.2 below lsd, Mar. 23, 1945; lowest 98.95 below lsd, Oct. 29, 1952. Records available: 1945-52. Jan. 21, 83.14; Oct. 29, 98.95.

(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 231.71 below lsd, Nov. 14, 1952. Records available: 1948-52. Jan. 15, 212.96; Nov. 14, 231.71.

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 13.76 below lsd, Oct. 1, 1945; lowest 18.50 below lsd, Aug. 3, 1951. Records available: 1945-52. Apr. 11, 15.36; Sept. 29, 16.93.

(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: 1944-52. Feb. 15, 111.10; Sept. 19, 112.49.

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, 1946; lowest 44.13 below lsd, July 2, 1952. Records available: 1944-52. July 2, 44.13.

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. Highest water level 140.66 below lsd, Feb. 28, 1940; lowest 180.22 below lsd, Aug. 13, 1952. Records available: 1940, 1942, 1945-48, 1950-52. Aug. 13, 180.22; Dec. 8, 168.51.

(D-12-10)20ddc. B. Wong. Drilled domestic water-table well in sand and gravel, diameter 7 inches, depth 222 feet. Highest water level 184.79 below lsd, Apr. 15, 1940; lowest 205.02 below lsd, Sept. 10, 1952. Records available: 1940, 1942, 1944-52. Feb. 20, 191.51; Sept. 10, 205.02, nearby well being pumped; Dec. 9, 197.17.

(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 208.70 below lsd, Sept. 10, 1952. Records available: 1940-42, 1944-47, 1949-52. Feb. 20, 201.78; May 14, 205.44; Sept. 10, 208.70; Dec. 9, 208.24.

(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: 1939-52. Feb. 20, 99.45; May 23, 107.24; Aug. 13, 115.49; Dec. 9, 116.34.

(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 215.18 below lsd, Dec. 8, 1952. Records available: 1940-42, 1944, 1946-52. Feb. 19, 214.88; May 13, 214.76; Sept. 9, 214.94; Dec. 8, 215.18.

(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 61.65 below lsd, Oct. 27, 1952. Records available: 1942-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	55.24	Apr. 28	54.68	July 25	61.18	Oct. 27	61.65
Feb. 26	54.88	May 23	55.50	Aug. 22	58.75	Nov. 25	60.09
Mar. 24	54.43	June 26	59.21	Sept. 23	60.31	Dec. 23	58.48

(D-17-14)18cab. Arizona State Highway Department. Dug unused water-table well in sand and gravel, diameter 36 inches, depth 74 feet. Highest water level 52.16 below lsd, Jan. 2, 1940; lowest 72.05 below lsd, Sept. 4, 1952. Records available: 1939-52.

Feb. 19	65.06	July 10	71.52	Sept. 25	70.49	Nov. 13	68.67
Apr. 4	(f)	Aug. 7	71.80	Oct. 2	69.99	20	68.41
May 1	68.31	12	71.89	6	69.79	Dec. 15	68.13
8	67.53	21	71.95	16	69.48	22	68.06
19	67.30	Sept. 4	72.05	23	69.36	29	68.19
July 3	71.18	11	71.91	Nov. 6	68.97		

f Dry.

(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 79.83 below lsd, Feb. 19, 1952. Records available: 1939-52.

Feb. 19	79.83	Oct. 16	70.11	Nov. 13	68.61	Dec. 22	67.54
Sept. 25	70.07	23	69.55	20	68.14	29	66.84
Oct. 6	73.65	Nov. 6	69.78	Dec. 15	67.77		

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: 1939-52. Jan. 15, 401.39; Nov. 12, 402.04.

(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. Jan. 15, 253.23; Nov. 12, 268.30.

(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 191.30 below lsd, Jan. 15, 1952. Records available: 1941-52. Jan. 15, 191.30.

(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: 1942-52. Feb. 14, 35.84; July 9, 23.04; Dec. 1, 20.42.

(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 149.07 below lsd, July 7, 1952. Records available: 1942-52. Feb. 13, 134.42; July 7, 149.07.

(D-5-9)29ada. Bureau of Indian Affairs well 76. Drilled unused water-table well, diameter 16 inches, reported depth 616 feet, perforations 134-440. Land-surface datum is 1,520 feet above msl. Highest water level 114.24 below lsd, Feb. 6, 1944; lowest 167.35 below lsd, July 8, 1952. Records available: 1942-52. Jan. 2, 156.59; Feb. 14, 156.37; July 8, 167.35; Dec. 1, 156.92.

(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 85.22 below lsd, Sept. 14, 1951. Records available: 1940-52. Jan. 2, 84.89; Feb. 19, 83.00.

(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. Feb. 14, 85.37.

(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 164.07 below lsd, July 27, 1949. Records available: 1942-52. Jan. 2, 154.55; Feb. 19, 151.96; Dec. 2, 163.10.

(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 108.70 below lsd, July 9, 1952. Records available: 1941-52. Feb. 14, 94.20; July 9, 108.70.

(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 227.20 below lsd, Dec. 3, 1952. Records available: 1940-52. Jan. 3, 202.30; Dec. 3, 227.20.

(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. Feb. 21, 170.28.

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 53.27 below lsd, Sept. 18, 1952. Records available: 1939-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 19	43.70	July 3	a56.0	Oct. 6	46.67	Nov. 13	45.07
Apr. 4	a51.9	Aug. 7	a57.8	Nov. 6	45.20	Dec. 29	45.48
May 19	a54.8	Sept. 18	53.27				

a Pumping.

(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: 1939-52.

Feb. 19	18.91	July 3	20.24	Sept. 3	20.21	Nov. 6	20.95
Apr. 4	18.38	Aug. 7	20.95	18	20.51	13	20.91
May 19	18.04	12	20.87	Oct. 6	20.80	Dec. 29	19.86

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, 1951-52. July 16, 23.60.

(B-13-6)9dd. J. S. Reagan. Dug irrigation water-table well in sand and gravel, diameter 6 feet, depth 22 feet. Highest water level 13.98 below lsd, Jan. 17, 1945; lowest 17.97 below lsd, Aug. 4, 1951. Records available: 1945-49, 1951-52. July 17, 24.02, pumping.

(B-14-4)33ab. Mr. Sine. Drilled unused water-table well in sand and gravel, diameter 16 inches, depth 73 feet. Highest water level 11.03 below lsd, Apr. 14, 1945; lowest 17.64 below lsd, Aug. 4, 1951. Records available: 1944-49, 1951-52. July 17, 15.24.

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 113.11 below lsd, July 16, 1952. Records available: 1946, 1948-52. July 16, 113.11.

(C-7-16)33aaa. Mohawk Municipal Water Conservation District. Drilled unused water-table well in sand and gravel, diameter 20 inches, depth 83 feet. Highest water level 28.30 below lsd, May 3, 1945; lowest 36.25 below lsd, Jan. 29, 1952. Records available: 1945-52. Jan. 29, 36.25.

(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 80.53 below lsd, Jan. 28, 1952; lowest 97.63 below lsd, Sept. 5, 1946. Records available: 1945-52. Jan. 28, 80.53.

CALIFORNIA

By L. C. Dutcher, E. F. LeRoux, M. B. Scott,
R. M. Waller, and H. D. Wilson, Jr.

Scope of Water-Level Program

This report shows the progress made in 1952 in the measurement of water levels in California by the Geological Survey 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 and the scope of water-level measurements covered by this report, arranged by counties in alphabetical sequence. As the table shows, the report covers water-level measurements during 1952 in 493 observation wells distributed in 8 of the 58 counties in the State. One of these eight counties, San Joaquin, is in the central part; the other seven are in the southern part of the State south of the Tehachapi Mountains. For two of the eight, San Diego and Santa Barbara Counties, the water-level measurements in this report cover all the prinicpal ground-water areas; for the other six counties only scattered basins or areas are covered.

Distribution of observation wells in California in 1952
(for which water-level records are given in this report)

County	Number of observation wells			Number of wells with recording gages
	Established during 1952[a]	Discontinued in 1952	At year end	
Kern County:				
Antelope Valley, part	0	0	2	0
Los Angeles:				
Antelope Valley, part	6	3	106	0
San Gabriel River basin	0	0	1	1
Coastal plain	0	0	8	0
Orange County:				
Coastal plain	5	0	21	0
Riverside County:				
San Jacinto Valley	0	0	8	0
San Bernardino County:				
Mojave River basin	7	2	83	0
Santa Ana River basin	2	0	9	0
San Diego County:				
San Luis Rey River basin	0	0	14	0
San Dieguito River basin	0	0	5	0
San Diego River basin	1	1	2	0
Sweetwater River basin	0	0	1	0
Otay River basin	0	0	1	0
Tia Juana River basin	0	0	4	0
San Joaquin County:				
Mokelumne River basin	2	2	24	0
Santa Barbara County:				
Carpinteria Basin	0	2	18	0
Goleta Basin	3	0	24	1
Santa Ynez Valley	5	4	81	5
San Antonio Valley	0	0	4	0
Santa Maria Valley area	7	1	46	0
Cuyama Valley	1	0	11	0
Total	39	15	493	7

a Includes wells established prior to 1952 but for which water-level records are renewed or are given for the first time in this report.

In addition to this program in which the Geological Survey participated, systematic measurements of water level were made by numerous agencies in widely scattered and extensive parts of California. The following programs were continued in the southern part of the State. The Division of Water Resources in the Department of Public Works, State of California, measured water levels in about 150 wells in the Temecula area, about 50 wells in the Elsinore area, and about 110 wells in the Raymond Basin. That agency continued to assemble from various agencies records of water levels in wells in the South Coastal Basin and in Antelope and San Jacinto Valleys. These assembled records for 1948 have been published in the Division's Bulletin 39-Q which continues the series beginning with Bulletin 39, published in 1932. These programs of water-level measurement by the several agencies are listed in the following tables.

Number of wells measured by local agencies in the South Coastal Basin in 1952

Area and agency	Frequency of measurements			
	Semi-annually	Quarterly	Monthly	Frequently
Coastal plain, Los Angeles County:				
San Gabriel Valley Protective Association			67	
City of Long Beach			23	38
Los Angeles County Flood Control District	a583		28	
California Division of Water Resources (West Coastal Basin)	200			
Coastal plain, Orange County:				
Orange County Flood Control District		49	379	51
San Fernando Valley:				
Los Angeles Division of Water and Power	161		104	29
Los Angeles County Flood Control District	50		57	
Soil Conservation Service (Western part of valley)			35	
San Gabriel Valley:				
Los Angeles County Flood Control District	176		66	
San Gabriel Valley Protective Association			74	
Upper Santa Ana Valley:				
Chino Basin				
San Bernardino County Flood Control District	179		22	78
San Bernardino Valley				
San Bernardino Valley Water Conservation District		c98	61	
San Bernardino Water Department		154	25	
San Jacinto Valley:				
Riverside Flood Control and Conservation District			42	
California Division of Water Resources[b]				

a Includes 83 shallow test holes.
b Includes measurements once annually on 150 wells.
c Bimonthly.

Number of wells measured by local agencies in the southern California desert area in 1952

Area and agency	Frequency of measurements			
	Semi-annually	Quarterly	Monthly	Frequently
Tehachapi Valley, Kern County				
Soil Conservation Service			45	
Mojave River basin, San Bernardino County				
San Bernardino County Flood Control District	29		55	
Morongo Valley, San Bernardino County				
San Bernardino County Flood Control District	8			
Yucca-Twentynine Palms area, San Bernardino County				
San Bernardino County Flood Control District	99			
Lucerne Valley, San Bernardino County				
San Bernardino County Flood Control District	8			
Coachella Valley, Riverside County				
Coachella Valley County Water District		49		

Precipitation

A summary of precipitation in California for the calendar year 1952 is quoted from the annual report of climatological data issued by the Weather Bureau:

> "In 1952 heavy precipitation characterized the month of January. Heavy snowfalls in the Sierra Nevada in January contributed to depths of snow on the ground which were greater than any previously recorded at many stations in the Sierra Nevada during the months of January, February, and March. Much below-normal temperatures in the Central Valley were notable during June. Temperatures during September and October generally averaged above normal throughout the State. Much above-normal temperatures occurred generally during the last week of September and the first week of October.
>
> Well below-normal temperatures in the Central Valley in June retarded the development of fruits and field crops. High relative humidities accompanying the low temperatures favored the development of mildew in orchards. The much-above-normal temperatures during the last week of September and the first week of October favored rapid maturing and ripening of crops and drying of raisins, prunes, and figs but increased irrigation water requirements. The lack of precipitation or sufficient dew restricted cotton defoliation with the use of calcium cyanimide and other chemicals requiring moisture to be effective."

Where there is a marked seasonal range in precipitation, such as prevails throughout California and the remainder of the Pacific Coast region, ground-water storage generally is greatest and natural ground-water levels are highest during or somewhat after the height of the wet season, but 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 mid-autumn. For this treatment of climatic conditions and for the following summary treatment of runoff the water year is taken as ending September 30, the most practicable average date 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 56-year period ending with 1952. The very marked seasonal range in precipitation is apparent. Of the 23.99 inches total for the 12 months, about 80 percent falls during the 5 months November-March, less than 4% falls during the 4 summer months June-September.

State-wide average monthly and yearly precipitation, 1897-1952

Month	Inches	Percentage of yearly total	Month	Inches	Percentage of yearly total
October	1.31	5.5	April	1.69	7.0
November	2.47	10.3	May	.93	3.9
December	3.95	16.5	June	.33	1.4
January	4.68	19.5	July	.08	.3
February	4.35	18.1	August	.10	.4
March	3.69	15.4	September	.41	1.7
Total	20.45	85.3		3.54	14.7
The year				23.99	100.0

The following table shows the precipitation during the water year ending September 30, 1952, 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 143 percent of the 60-year average, and the median of the group was 141 percent of the 60-year average; at all the stations the total for the year was greater than average. The regional distribution of the rainfall over the State is well illustrated by this table. That is, for the northern coast ranges and the Sierra Nevada the rainfall was 20 to 55 percent above average, whereas for the southern part of the State the rainfall was as much as 80 percent above average. For this southern area, 1952 was the first year since 1946 in which rainfall was above average, with 1944 and 1945 being only slightly above average.

Precipitation in the year ending September 30, 1952, and percent of 60-year average at 15 representative stations

Province	Station and County	Precipitation, 1951-1952	
		Inches	Percent of 60-year average[a]
Northern Coast Ranges	Eureka, Humboldt	47.28	123
Coast Ranges of central and southern California	San Francisco, San Francisco	32.05	158
	San Luis Obispo, San Luis Obispo	29.26	138
	Santa Barbara, Santa Barbara	31.25	175
	Los Angeles, Los Angeles	26.19	181
	San Bernardino, San Bernardino	24.20	145
	San Diego, San Diego	17.27	171
	Cuyamaca, San Diego	54.03	140
Great Valley (California Trough)	Red Bluff, Tehama	25.37	110
	Stockton, San Joaquin	19.64	141
	Fresno, Fresno	14.04	149
Sierra Nevada	Nevada City, Nevada	77.04	156
	West Point, Calaveras	50.10	127
Great Basin (Southwestern Bolson province)	Indio, Riverside	3.43	102
	Needles, San Bernardino	6.14	136

a Average for years ending September 30, 1891 to 1950.

Runoff

The runoff in the northern and central California streams during the water year ending September 30, 1952, was above 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 210 percent of normal; and for the combined flow of Sacramento and San Joaquin Rivers and tributaries, 154 percent; and for Kings River at Piedra in the southern Sierra drainage, 185 percent. The records from the following three gaging stations in southern California show that the runoff was above normal throughout that part of the State during 1952. These gaging stations are: Santa Ana River, near Mentone; Santa Ysabel Creek, near Mesa Grande; and the Arroyo Seco, near Pasadena. For the water year 1951-52, the runoff as recorded at these three stations

was 109 percent, 170 percent, and 240 percent, respectively, of normal, The runoff measured at the gaging station on the Santa Ana River is affected by regulation at Big Bear Lake.

Interpretation of Water-Level Fluctuations

San Diego County. --During 1952 water levels were observed in 47 wells in San Diego County, in 7 of which the ground-water table dropped below the bottom of the well in late fall. However, in 30 other wells there was an average rise of 3.4 feet, with only 3 of these wells showing a decline during the year. The flow in Santa Ysabel Creek, with discharges into the San Dieguito River, has been measured at a gaging station near Mesa Grande since 1912. This stream with one of the longest records in San Diego County is used as an index of runoff from the coastal slope in the county. The average annual runoff for the period 1937-52 was 14,100 acre-feet, while the runoff for the 1951-52 water year was 20,800 acre-feet, an increase of 20,000 acre-feet over the 1950-51 runoff of 807 acre-feet. In the San Luis Rey River basin water levels in 12 wells rose an average of 2.6 feet during the year. Well 10/3W-1, which was dry in November 1952, was excluded from the average. The greatest rise during the year was 6.1 feet, in well 10/3W-1A, and the water level declined in only one of the 12 wells. Five wells in the San Pasqual Valley in the San Dieguito River basin were measured in 1952. Four of them were measured late in the year of both 1951 and 1952, and the average change in water level during 1952 in these four wells was a rise of 3.6 feet. Of the 22 wells reported in 1951 in the San Diego River basin, 5 were dry throughout 1952 and 1 well, 15/1W-13R5, was not measured. Measurements were made at 10 of the wells late in both 1951 and 1952, and the average rise of water levels during 1952 at these 10 wells was 4.1 feet. The greatest rise was 11.90 feet, in well 14/1W-36R1; none of the water levels in the wells measured declined during the year. Records for four wells in the Tia Juana River basin, all within about 4 miles of the coast, are tabulated in this report. Of the four, two were dry late in 1951, and the two other wells with measurements made late in 1951 and 1952 showed an average local rise in water level of about 3.0 feet during the year.

Coastal plain in Los Angeles and Orange Counties. --In the coastal plain in Los Angeles and Orange Counties for 1952 no program of water-level measurement was undertaken by the Geological Survey. However, the extensive programs for periodic measurements of observation wells are being continued by several local agencies -- in Orange County chiefly by the Orange County Flood Control District and in Los Angeles County chiefly 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. For the observation wells tabulated in this report the water-level measurements in addition to those made by the Geological Survey have been furnished by one or more of these agencies. In 1952 the Geological Survey completed the fourth and last of a series of annual reports concerning the status and effect of saline contamination along the Orange County coast. As in prior years of the investigation, field work consisted primarily of the collection of water samples from wells to determine chloride content, hardness, and specific conductance. The summary report for 1952 concludes the research which had been carried on since July 1948 by the Geological Survey in cooperation with the Orange County Flood Control District and the Orange County Water District. In this report, records are included for 25 wells in the main coastal basin in Los Angeles and Orange Counties and for 4 wells in the so-called West Basin in Los Angeles County southwest of the Newport-Inglewood uplift. Records for 24 of these wells have been furnished by local agencies. Records are included for 5 wells measured by the Geological Survey in Orange County, which were not reported in 1951. These are wells 5S/11-18N1, 5S/11-18P1, 5S/11-29E1, 5S/11-29E2, and 5S/12-12P1. Records published by the United States Weather Bureau for three rainfall stations in 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 -- suggest that rainfall on this area in the calendar year 1952 was 168 percent of normal. In the water year ending September 30, 1952, rainfall was 164 percent of normal. The above-normal precipitation for these periods of record resulted chiefly from a series of storms in December 1951, and January, March, November, and December 1952, which brought the rainfall for both the water year and calendar year considerably above normal. 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 table summarizes rainfall records not only for the 1951-52 water year but for the 1952 calendar year as well.

Average rainfall, in inches, for three stations on the coastal plain of Los Angeles and Orange Counties

Month and year	Normal	Current	Departure	Current, in percent of normal
October 1951	0.64	0.44	-0.20	69
November	.97	.91	-.06	94
December	2.82	5.02	+2.20	178
January 1952	2.52	9.07	+6.55	360
February	3.20	.54	-2.66	17
March	2.43	5.72	+3.29	235
April	1.00	1.47	+.47	147
May	.36	0	-.36	0
June	.06	0	-.06	0
July	.01	0	-.01	0
August	.04	0	-.04	0
September	.21	.18	-.03	86
The water year 1951-52	14.26	23.35	+9.09	164
October	.64	0	-.64	0
November	.97	3.60	+2.63	371
December	2.82	3.35	+.53	119
The calendar year 1952	14.26	23.93	+9.67	168

Above-normal precipitation during December 1951 and January and March 1952, resulted in the reduction of preirrigation for certain types of crops, and in the main coastal basin water levels in wells were nearly the same or considerably higher in the spring of 1952 than in the previous year. On the other hand, the West Basin is somewhat less advantageously situated with respect to sources of recharge and is highly industrialized. As a result the increase in precipitation during the spring months did not cause a substantial decrease in pumping for the preirrigation of crops as occurred in the main coastal basin. Accordingly, in the West Basin the spring water levels in 1952 were generally lower than in 1951 and followed a downward trend that has continued for several years.

The following table summarizes water-level fluctuations in 24 selected observation wells in the coastal plain in Los Angeles and Orange Counties. In this table, water levels at year-end are compared to the year-end levels of 1951 and to those of the 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 Basin in Los Angeles County. Within the main coastal basin water levels in 14 index wells in Orange County show a net rise of 5.0 feet in the year 1952 and a net drop of 12.5 feet since 1936, and 4 index wells in Los Angeles County show a net rise of 9.4 feet in 1952 and a net drop of 17.8 feet since 1936. Within the West Basin 2 index wells show a net drop of 5.2 feet in 1952 and a net drop of 47.4 feet since 1936.

Summary of water-level fluctuations in observation wells in the coastal plain in Los Angeles and Orange Counties

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	1951	1952	1936-52	1951-52
Wells in the main coastal basin -- Orange County					
3S/11-36Q2	+18.2	-1.6	+1.4	-16.8	+3.0
4S/10-22L2	+10.2	-6.3	-0.9	-11.1	+5.4
4S/11-19K1	+10.9	-8.1	-3.2	-14.1	+4.9
5S/10-9D1	+10.0	-8.9	-7.5	-17.5	+1.4
5S/10-28B1[b]	....	-7.2	-4.8	....	+2.4
5S/11-2E1	+4.4	-14.5	-5.9	-10.3	+8.6
5S/11-16D2	+2.0	-13.5	-8.0	-10.0	+5.5
5S/11-25P1	+3.5	-13.0	-9.5	-13.0	+3.5
5S/11-28A1	+.6	-30.2	-21.1	-21.7	+9.1
5S/11-29C4[b]	....	-11.7	-9.7	....	+2.0
5S/12-12P1	+.9	-13.3	-10.1	-11.0	+3.2
6S/10-1E1	+.2	-21.9	-14.1	-14.3	+7.8
6S/10-1L2	+17.1	+8.6	+9.3	-7.8	+.7
6S/10-5C1	+3.5	-11.9	-8.7	-12.2	+3.2
6S/11-13G2	+.8	-4.6	-4.6	-5.4	0.0
I-9F1	-1.8	-26.0	-11.8	-10.0	+14.2
Averages	+5.7	-11.8	-6.8	-12.5	+5.0

Summary of water-level fluctuations in observation wells in the coastal plain in Los Angeles and Orange Counties -- Continued

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	1951	1952	1936-52	1951-52
	Wells in the main coastal basin -- Los Angeles County				
2S/12-13A1	+133.5	+103.8	+124.4	-9.1	+20.6
3S/12-8L3	+62.6	+44.9	+43.0	-19.6	-1.9
4S/11-5D1	+14.5	+7.5	+7.3	-7.2	-.2
4S/12-8P1	-14.2	-68.6	-49.3	-35.1	+19.3
Averages	+49.1	+21.9	+31.3	-17.8	+9.4
Wells in the West (coastal) Basin, tapping deposits of Pleistocene age (the Silverado water-bearing zone or its equivalent)					
3S/14-3K1[b]	....	-78	-71	....	+7
3S/14-21B1	-11	-50	-53	-42	-3
4S/13-14L1[c]	+.3	-6.8	-6.9	-7.2	-.1
4S/13-23G2	-34.3	-79.8	-87.2	-52.9	-7.4
Averages	-22.6	-64.9	-70.1	-47.4	-5.2

a Chiefly interpolated.
b Excluded from averages.
c Taps Gaspur water-bearing zone of Recent age; excluded from averages.

San Gabriel River basin. --A recording gage was in operation throughout 1952 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 1952 the water level ranged from a low of 247.54 feet above sea level on January 1 to a high of 275.93 feet above sea level on April 27. The high level on April 27 was 55.9 feet below the highest observed level, which was on May 19, 1916, and the low of January 1 was1.4 feet above the previous low, which was on November 20, 1951. The basin-wide lowering of the water table in recent years has had a very marked effect on the surface outflow from the basin as shown by the flow in Mission Creek near Montebello. 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 stream bed within about one mile above Whittier Narrows and it reflects the changes in the elevation of the ground-water table in the basin above. 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 1951-52 was only 6,090 acre-feet.

San Bernardino area. --All eight of the wells previously reported for the San Bernardino area were measured in 1952. Well 1S/3W-17C1 was measured weekly by the Gage Canal Co., well 1S/3-20B1 was measured monthly by the Geological Survey, and the other five were measured less frequently by either the city of San Bernardino or the San Bernardino Valley Water Conservation District. The March high level for the year at well 1S/3W-17C1, which reflects the recharge to the ground-water body from flow in the Santa Ana River, was about 0.8 foot below that of last year. The low level for the year, disregarding January when the water level had not yet recovered from a low the previous year, occurred late in November. It was 6.3 feet above the previous year's low but still more than 14 feet below the low water of 1936, and about 70 feet below the levels of 1892-93. The average rise in water level since last year in 4 of the wells that were measured late in the year was about 2.9 feet. All of the 8 wells measured are in the Bunker Hill basin which is separated from the Rialto-Colton Basin by the Bunker Hill dike. This dike, or structural zone, acts as a reasonably complete hydraulic barrier, resulting in pressure levels substantially above land surface in deeper wells upstream from or northeast of the dike. That the overlying clays and silty clays are not entirely impervious is indicated to a degree by the existence of perennial flow in the Santa Ana River. The total average flow in these streams plus that in the Meeks and Daley Canal, measured at stations near the Bunker Hill dike, for the five-month period of June through October is 15,600 acre-feet for the years 1939-52. Except for the effluent into Warm Creek from the city of San Bernardino sewage plant and the discharge into the creek of ground water from some wells that are allowed to flow through a part of each year, the normal flow for this five-month period is made up of natural ground-water seepage. Although the sewage effluent has been deducted from the five-month average, it was not feasible to evaluate the magnitude of stream gain due to discharging wells. The peak flow of record for the five-month period was about 20,200 acre-feet in 1945. In 1952 the flow for this same period was 6,030 acre-feet which was less than a third of the corresponding flow in 1945.

San Jacinto Valley. --Measurements in the San Jacinto Valley by both the Geological Survey and the Riverside County Flood Control and Conservation District are tabulated for eight wells. Well 4/2W-7J1 in the Lakeview area was dry from June through December; in 1951 it was dry only in November and December. In the Perris area the water level at well 4/3W-32E1 declined about 1.0 foot during the year and, as suggested by measurements on well no. 72 prior to 1920

(WSP 468, p. 75), levels here have dropped about 39 feet since the seasonal low in 1905. Of the eight wells tabulated in this report water levels in two declined about 1.0 foot during the year, well 6/3W-4A2 showed a rise of 8.8 feet, and the other five were either pumping or dry late in the year and could not be used to compute change during the year. A large portion of the recharge to the basin is from the San Jacinto River and its tributaries. The surface inflow into the basin at the mouth of the canyon has been measured since 1922. Although the mean runoff for the 31 year period ending in 1952 was 16,600 acre-feet per year, the aggregate runoff for the 6-year period 1946-52 was only 32,300 acre-feet including a runoff of 24,800 acre-feet in the water year 1951-52. Since 1916 the outflow from the basin has been measured at the gaging station on the San Jacinto River at a point about 1 mile above its mouth at Lake Elsinore. The mean flow at this station for the 31-year period 1922-52 was 12,700 acre-feet per year. Since 1946 the total outflow from the basin was 17,200 acre-feet including a runoff of 16,600 acre-feet in 1951-52.

Mojave River basin. --A program of water-level observations in the Mojave River basin was inaugurated in 1930 by the Division of Water Resources, California Department of Public Works. Since 1931 the program has been continued by the Geological Survey; the wells are measured in May or June and in November or December each year. As in the preceding water-supply papers the tabulations of water-level measurements in the Mojave River basin are here segregated into three subareas. In all, records are published for 25 wells, 23 wells, and 35 wells, in the upper, middle, and lower basins, respectively. Records for wells not tabulated in 1951 are included, as follows: 9/1E-18L1, 9/1E-20N1, 9/2E-20Q1, 9/3E-10D1, 9/3E-32A1, 9/4E-20L1, and 10/2W-30R1. The precipitation on the valley floor of the Mojave basins is very little, therefore, the principal recharge to the area is runoff from the San Bernardino Mountains. The Mojave River originating in the San Bernardino Mountains flows northward discharging onto the great alluvial plain. As the river emerges from the mountains much of the surface runoff is quickly absorbed into the alluvium, with long reaches of the river channel being dry during parts of most years. About 15 miles to the north are the Granite Mountains through which the river has cut a deep narrow channel at Victorville, and which form the northern boundary of the upper subbasin. The average annual runoff in the Mojave River into the upper basin during the period of record, 1931-52 was about 65,300 acre-feet, while the outflow measured at the lower narrows near Victorville for the period 1932-52 averaged 59,500 acre-feet. The residual of 5,800 acre-feet represents the average net amount of water retained in the upper basin and, in the absence of any change in storage this would be the average amount of water consumed. During the year 1951-52 the river discharged 103,000 acre-feet into the upper basin, and 66,800 acre-feet from this basin at the lower narrows, for a net stream depletion of 36,200 acre-feet. A diversion of 3,490 acre-feet from Deep Creek for irrigation in the upper basin was made during the current year, but probably little or none of this flow reached the ground-water table for recharge. All of the 5 wells reported dry in 1951 contained water in May of 1952, but 3 of the wells were again dry in November. Based on records taken late in the year for 11 wells in the upstream part of this sub-basin, the average rise in water level in that area during the year was 2.6 feet. The middle sub-basin is a long irregular narrow river valley extending from the Victorville Narrows to Daggett, which widens to about 6 miles in the vicinity of Hinkley Valley. During the period 1932-52 the average annual surface inflow to this sub-basin amounted to 59,500 acre-feet at Victorville Narrows, and the average surface outflow measured at Barstow several miles upstream from Daggett amounted to 25,300 acre-feet. During the current water year 1950-52 some 66,800 acre-feet entered the middle basin, and 12,500 acre-feet left the basin. All wells in the middle sub-basin that were reported last year are included in this report, and in addition, well 10/2W-30R1 has been included to supplement well 10/2W-30N1 which was dry in May and was not measured in November. The average change of water level in the year at 9 wells measured in November of both 1951 and 1952 in the reach from Bryman to Hodge was a drop of 0.8 foot. In the middle part of the basin, however, the average change in water level at 6 wells was a rise of 5.6 feet. In the area between Barstow and Daggett water-level measurements in 2 wells rose an average of more than 5 feet, while the water level in a third well rose 28.1 feet during the year. At Daggett the river discharges onto a broad triangular shaped flood plain extending toward Newberry. North across the valley from Newberry the river enters a narrow confining canyon. The Geological Survey reestablished a gaging station in this canyon near Afton. During the period 1931-52, the annual surface inflow into the lower basin measured at Barstow amount to 25,300 acre-feet, while the average annual outflow at Afton is estimated to have been about 6,000 acre-feet. During the current year of 19 1951-52 there was 12,500 acre-feet inflow into the basin and probably very little outflow from the basin. For the lower basin 35 wells are tabulated in this report, 20 of which were measured in November of both 1951 and 1952. As reflected by these 20 wells, the average change in water level during 1952 was a drop of 0.8 foot. Only 3 of the 20 wells showed any rise in water level.

Antelope Valley. --For Antelope Valley as a whole the average change in water levels in 81 wells that were measured late in the year in both 1951 and 1952 was a decline of about 2.7 feet. The greatest observed decline was in the area northeast of Fairmont, where water levels in seven wells late in 1952 averaged 6.0 feet below those measured late in 1951. North and east of Pearblossom water levels in 13 wells rose an average of 0.7 foot during 1952; with the exception of this area, water level rises were recorded in only eight other wells throughout the valley. The principal recharge to Antelope Valley is from precipitation on the valley floor and surface runoff from the San Gabriel Mountains. The two primary sources of surface runoff to the valley area are Rock Creek and Little Rock Creek, both of which have been measured continously since 1931. The combined average annual runoff from these two streams for the period 1931-52 was

about 28,200 acre-feet. During the water year 1951-52 the total flow from these two streams was 40,520 acre-feet.

Santa Barbara County.--The investigation of the ground-water resources of Santa Barbara County was continued during 1952 in cooperation with the Santa Barbara County Water Agency. Monthly water-level measurements were made in 184 wells. Recording gages were operated on six wells. Water-level measurements made by the city of Santa Maria and the Santa Maria Valley Water Conservation District, in addition to those made by the Geological Survey, are included in this report. 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 were published as Water-Supply Papers 1107, 1108, 1000, and 1110-B, respectively. In October 1952, "Reports on stream runoff and ground-water storage capacity, Santa Ynez River, Santa Barbara County, Calif.," prepared, respectively, by Messrs. H. C. Troxell of the Surface Water Branch and Harry D. Wilson, Jr. of the Ground Water Branch, U. S. Geological Survey, were released. Replenishment of the ground-water reservoirs is dependent almost entirely on a few months of winter precipitation. From 1945 to 1951 precipitation was below normal and, as a result, replenishment of most of the basins of the county was insufficient to meet requirements. Ground-water levels were drawn down substantially between 1945 and 1951, but the above-average rainfall of 1951-52 has caused a cessation of the downward trend. Whether this is a temporary reversal or the beginning of a series of wet years remains to be seen. Figures 34 and 35 show precipitation at 3 stations, water-level fluctuations in 10 wells, and a curve showing accumulated departure of rainfall from average at Santa Maria. These graphs illustrate the relationship of ground-water level to precipitation. During "wet" years the rise in water levels indicates ground-water replenishment in excess of current draft. Declining water levels coincident with periods of below-normal rainfall indicate depletion of ground-water storage. Beginning about 1945 water levels throughout Santa Barbara County steadily declined as a result of increased usage and below-normal precipitation. Ground-water depletions during the years 1945-51 were more serious in some basins than in others, depending upon the magnitude of the unbalance between withdrawals and replenishment. In the winter of 1951-52 above-normal precipitation wholly replenished or nearly replenished those basins in which the overdraft was small, whereas, in the basins of large overdraft only a small part of the depleted storage was restored. The ensuing discussion of water-level fluctuations is by ground-water basins, each a separate hydrologic unit. Figures 27-33 show location of observation wells in Santa Barbara County.

Water levels in the Carpinteria Basin recovered during 1952; well 4/25-34F2 was the only well of the 18 under observation that showed a year-end decline and it amounted to only 0.3 foot. Recovery of water levels in the remainder of the wells ranged from 5.3 feet to 42.9 feet; the average recovery at year-end was 19.6 feet and the median was 17.4 feet. The maximum water-level recovery (42.90 feet) was observed in a well along Rincon Creek in the recharge area. Two wells in the recharge area of Moses Mesa also showed a large recovery, averaging about 33 feet. In most wells the highest water levels during the year occurred in May. This was about a month later than usual, because the start of the irrigation season was delayed by the heavy winter rains. As a result of the late peak levels, the declines during the 1952 pumping season were not as great as they had been in prior years of low rainfall. The year-end recoveries, after cessation of pumping, reached the approximate year-end levels of 1949 but were still considerably below the highest levels of 1945. The hydrograph of well 4/25-27Q2 (fig. 34) is representative of the ground-water fluctuation near the eastern terminus of the confined-water area. The program for the collection of water samples to test for chloride contamination near the coast was expanded in 1952 because the water level in many parts of the Carpinteria Basin is below mean sea level -- as much as 28 feet in one well. The expanded program indicated high chloride content of water from wells in the western part of the basin, but no significant increase was noted. A water-level recovery during 1951-52 that averaged 6 feet in this western area decreased the chances of sea-water intrusion -- water levels in 2 wells rose above mean sea level for the first time since 1947, and the water levels in 3 other wells rose to an average of 6 feet below mean sea level. East of Carpinteria 4 wells had water levels averaging 24 feet below mean sea level, but they have not shown a high chloride content or any indication of an increase. Apparently they are protected from sea-water intrusion by a fault which passes between the wells and the coastline. Figure 27 shows location of observation wells in Carpinteria Basin, Santa Barbara County.

Water levels in 24 wells (fig. 28) in the Goleta Basin rose several feet but failed to reach the high levels of 1945. In the confined-water area that underlies nearly all the central alluvial plain the year-end water levels ranged from 0.88 foot to 9.55 feet above year-end levels of 1951, the average rise in 9 wells being 4.69 feet. Within the recharge area along the base of the foothills recoveries were somewhat greater than in the confined-water area. The 1952 year-end water levels ranged from 1.72 feet below to as much as 24.96 feet above the year-end levels of 1951, the average change being a rise of 10.2 feet. The greatest recoveries were observed in wells in the alluvial deposits adjacent to the stream systems that traverse the recharge area. The hydrographs of wells 4/28-17H11 and 4/28-9A3 (fig. 34) show water-level fluctuations in the area of confined water and recharge area, respectively. In the Goleta Basin, as in the Carpinteria Basin, periodic sampling in selected wells along the coast revealed no increase in concentration of chloride. However, despite the recoveries observed during 1952, water levels in 11 of the 24 wells under observation were still below sea level at the close of the year. Water levels in some of these wells were as much as 40 feet below mean sea level, the average being about 23 feet.

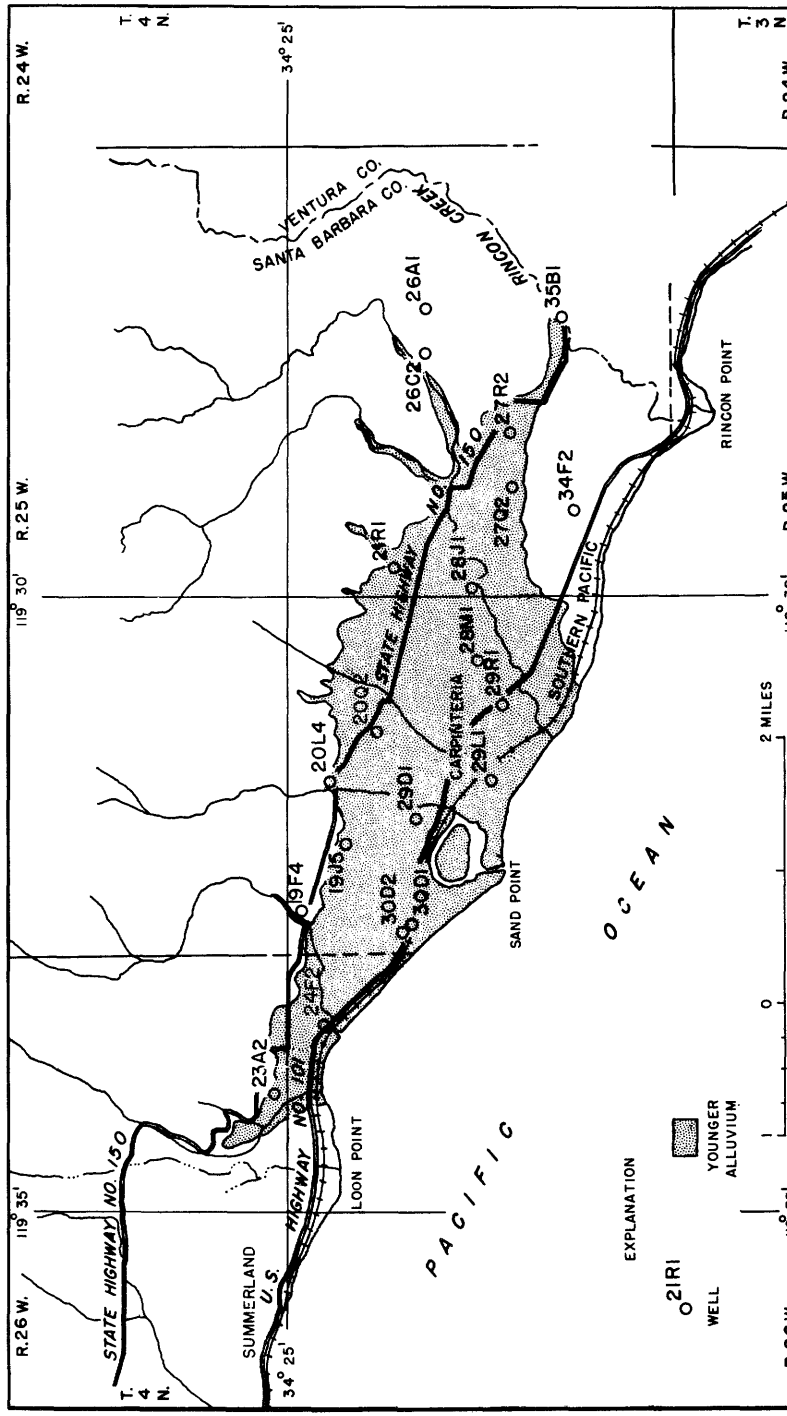


Figure 27.--Location of observation wells in Carpinteria Basin, Santa Barbara County, Calif., 1952.

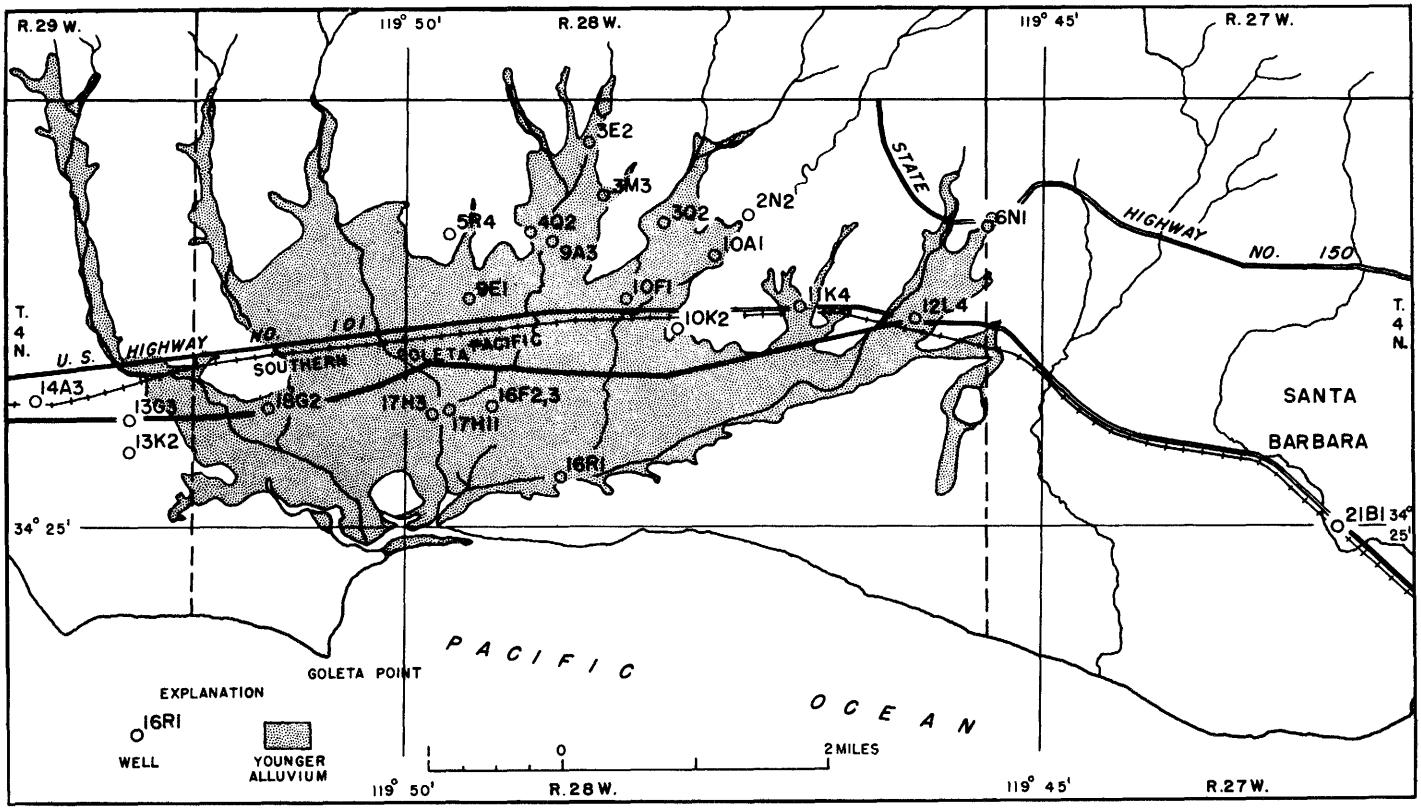


Figure 28. --Location of observation wells in Goleta Basin, Santa Barbara County, Calif., 1952.

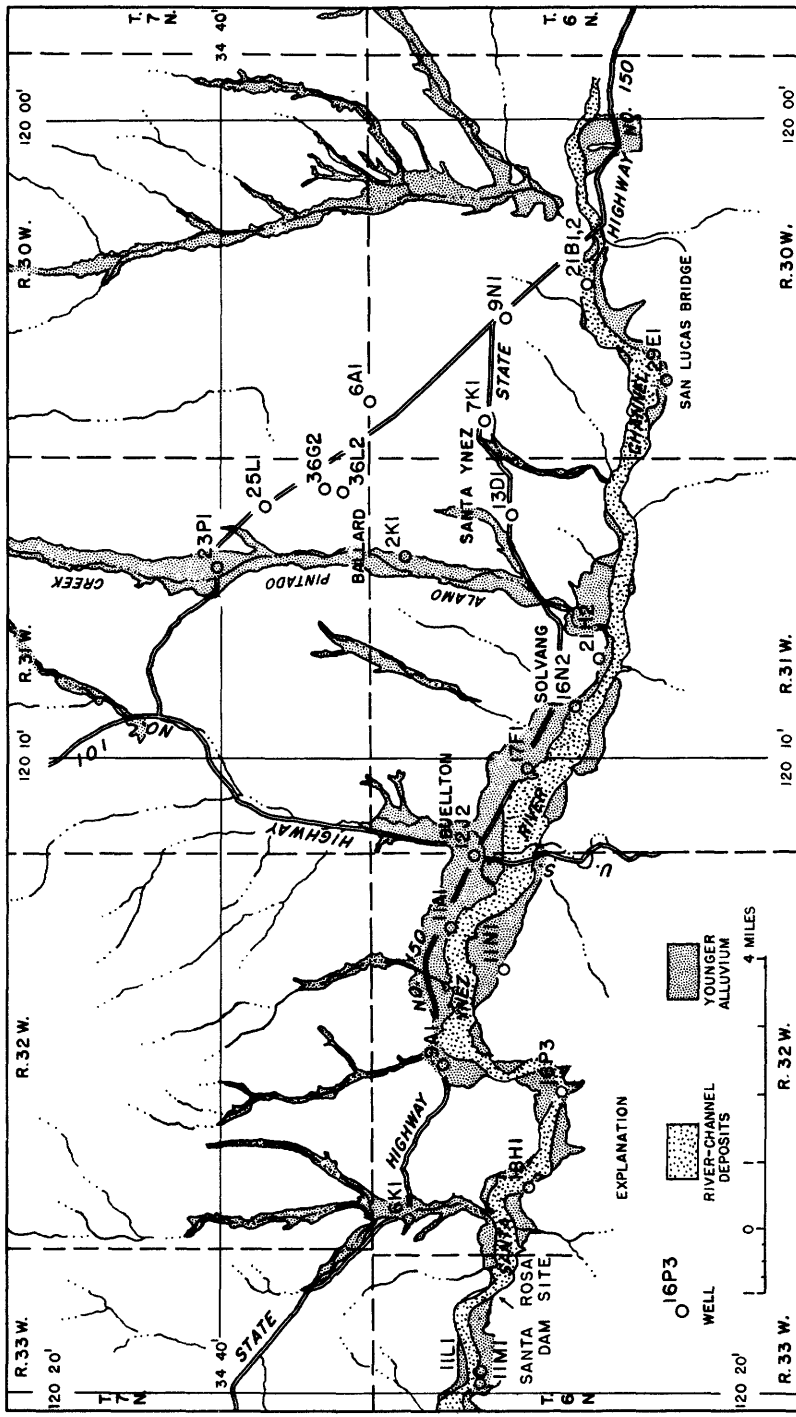


Figure 29.--Location of observation wells in Santa Ynez River Valley, Santa Barbara County, Calif., 1952.

The Santa Ynez River valley has several distinct hydrologic units, and well locations in the Sant Ynez River valley are presented on two maps: One includes the Santa Ynez upland and the alluvial deposits adjacent to the river between San Lucas Bridge and the Santa Rosa dam site; the other comprises the Lompoc plain and a short reach of the alluvial deposits upstream from Robinson Bridge. Year-end measurements of water levels in the 9 observation wells on the Santa Ynez upland (fig. 29) show recoveries in all but 2 wells. The greatest recoveries were in the long narrow valley of Alamo Pintado Creek. In this little valley, near the rock barrier that separates the upland from the Santa Ynez River one well showed a recovery of about 9 feet and, in the northern part of the valley a well recovered more than 29 feet. This was the maximum water-level recovery observed in the upland, and also the highest recorded water level for this well since 1947. Elsewhere on the upland the average recovery was about 2.5 feet. Well 6/30-6A1, whose hydrograph appears on fig. 34 , is considered to be representative for the upland; it showed a recovery of about 3 feet. Owing to above-average rainfall during the winter the Santa Ynez River flowed almost continuously throughout the year. However, for about 3 miles below San Lucas Bridge and along a short reach in section 17, T. 6 N., R. 31 W., zero flow was observed during September and October. As a result of river recharge to the adjacent alluvial deposits and a shorter irrigation season, the year-end water levels in 17 wells near the river between San Lucas and Robinson Bridges (figs. 29 and 30) averaged 6.2 feet higher than at the end of 1951. Recoveries in the 17 wells ranged from 0.6 foot to about 11 feet, the greatest recoveries occurring in the upper reaches of the river. Only 1 well in this area, 6/32-9A1, showed a year-end decline--about 1 foot. Above-average rainfall and continuous flow in the Santa Ynez River replenished the depleted ground-water bodies beneath the Lompoc plain (fig. 30) and, water levels in most of the wells measured monthly were recovering at the end of 1952. Hydrographs of wells 7/35-26J3 and 7/35-26J4 (fig. 34) show representative water-level fluctuations in the main water-bearing zone in the area of confined water and the hydrograph of well 7/34-27L1 is representative of water-level fluctuations in the main water-bearing zone in the water-table area. In the area of confined water, water levels in 15 deep wells had an average recovery of 5.9 feet; in comparison, the recovery in 13 companion shallow wells tapping sediments above the confining layer averaged 5.4 feet. The water-table area (recharge area) at the east end of the plain and along the southern fringe of the plain, had a recovery averaging about 6.4 feet in 20 wells. The greatest recoveries, averaging 16 feet, occurred in 4 wells within a mile below Robinson Bridge. Two wells, 7/33-30C1 and 7/34-12E1, in small valleys northeast of the plain (fig. 30) declined less than 1 foot, continuing the water-level decline which began in 1945.

Figure 31 shows the four wells measured in the San Antonio Valley. Water levels in two of the wells, 8/32-30K2 and 8/34-23B1, recovered more than 1.5 feet from the end of 1951. The other two, 8/33-20K1 (351 feet deep) and 8/33-20R1 (75 feet deep) adjacent wells near the middle of the valley, however, showed a net decline of almost 1 foot during the year.

The Santa Maria Valley area (fig. 32) 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. Considerable runoff during the early months of 1952 in the Cuyama and Sisquoc Rivers provided some replenishment to the ground-water reservoir, but year-end water levels were still considerably below those of 1945. The largest recoveries were observed in the Sisquoc area and in the eastern part of the alluvial plain of the Santa Maria River. In the Sisquoc area 3 observation wells had an average year-end recovery of 32.6 feet. The hydrograph of well 9/33-2A1 (fig. 35) is representative of water-level fluctuations in this area. In a narrow area close to the river and about 6 miles long below Fuglers Point, 7 wells had an average year-end water-level recovery of more than 39 feet. The maximum recovery (62.6 feet) was noted in a well near the river channel about 2 miles west of Fuglers Point. These recoveries were in the upstream part of the area of unconfined water which covers roughly the eastern two-thirds of the plain. Recoveries elsewhere in the unconfined-water area were not as great as those observed close to the river channel; the average recovery in 15 wells was 4.6 feet. A long-term hydrograph of well 10/34-14E3 (fig. 35) near the city of Santa Maria is representative of water-level fluctuations in the water-table area. The effect of recharge resulting from the unusually wet year is reflected in the reversal of the downward trend of water levels that began in 1945. In the confined-water area at the western end of the plain, the average water-level rise at year-end was slightly less than 3 feet and, in the Oso Flaco area north of the river the recovery in 8 wells averaged 3.3 feet. This water-level rise was a reflection of the increase in head in the recharge area to the east. The full effect of recharge probably has not been transmitted throughout the confined area as yet, as evidenced by the westward decrease in magnitude of water-level recoveries. The hydrograph of well 10/35-7F1 (fig. 35) is typical of the wells in the confined-water area. In the entire Santa Maria Valley area only two wells, both in the western part of the Orcutt upland, continued to show a year-end decline of water levels. A decline of more than 11 feet was noted in one of these wells.

Lack of electric power lines in the Cuyama Valley (fig. 33) tended to restrict intensive irrigation prior to 1946. Consequently, water levels in the principal agricultural area near the west end of the valley remained fairly static until heavy withdrawals began in 1946. The hydrograph for well 10/25-30F1 (fig. 35) indicates the start of the decline and its continuation in subsequent years, due to increased irrigation demands and subnormal precipitation. Although there was above-normal precipitation in 1952 and at times flow in the Cuyama River throughout

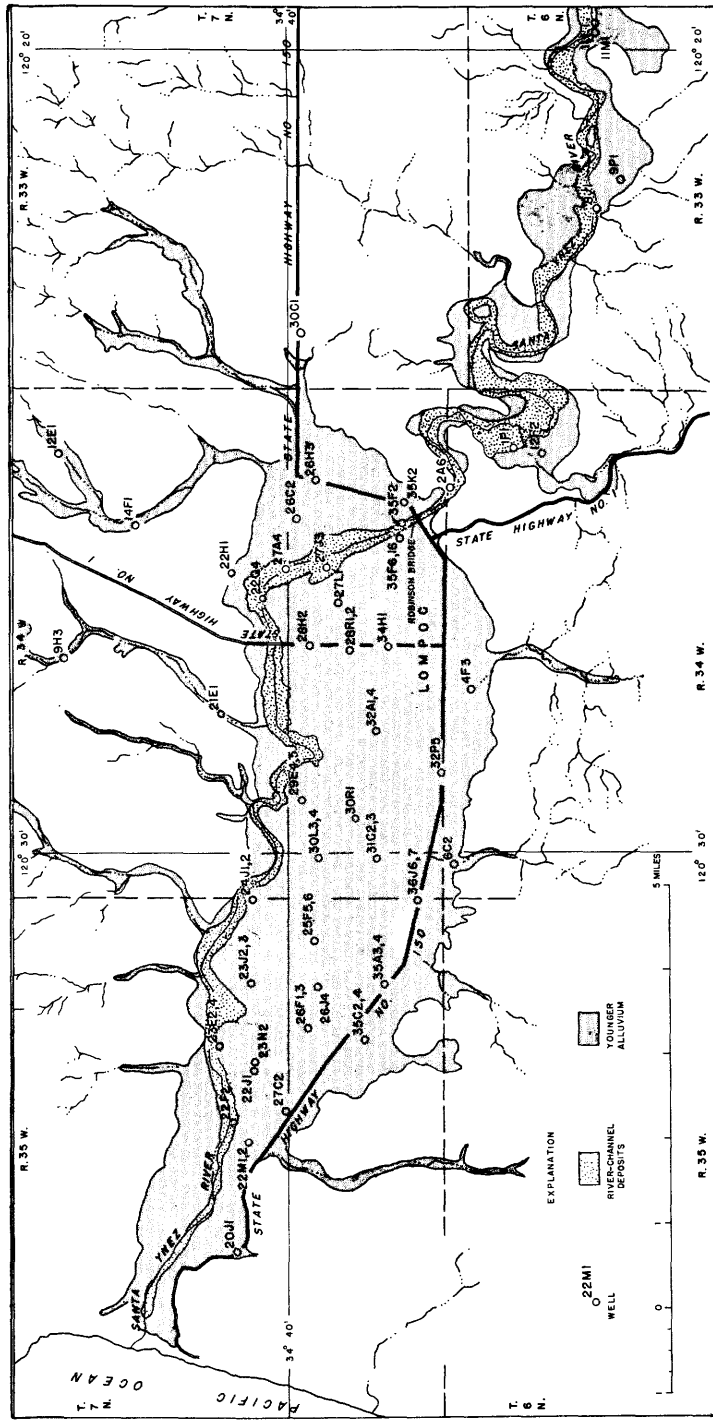


Figure 30. --Location of observation wells in Lompoc Plain, Santa Barbara County, Calif., 1952.

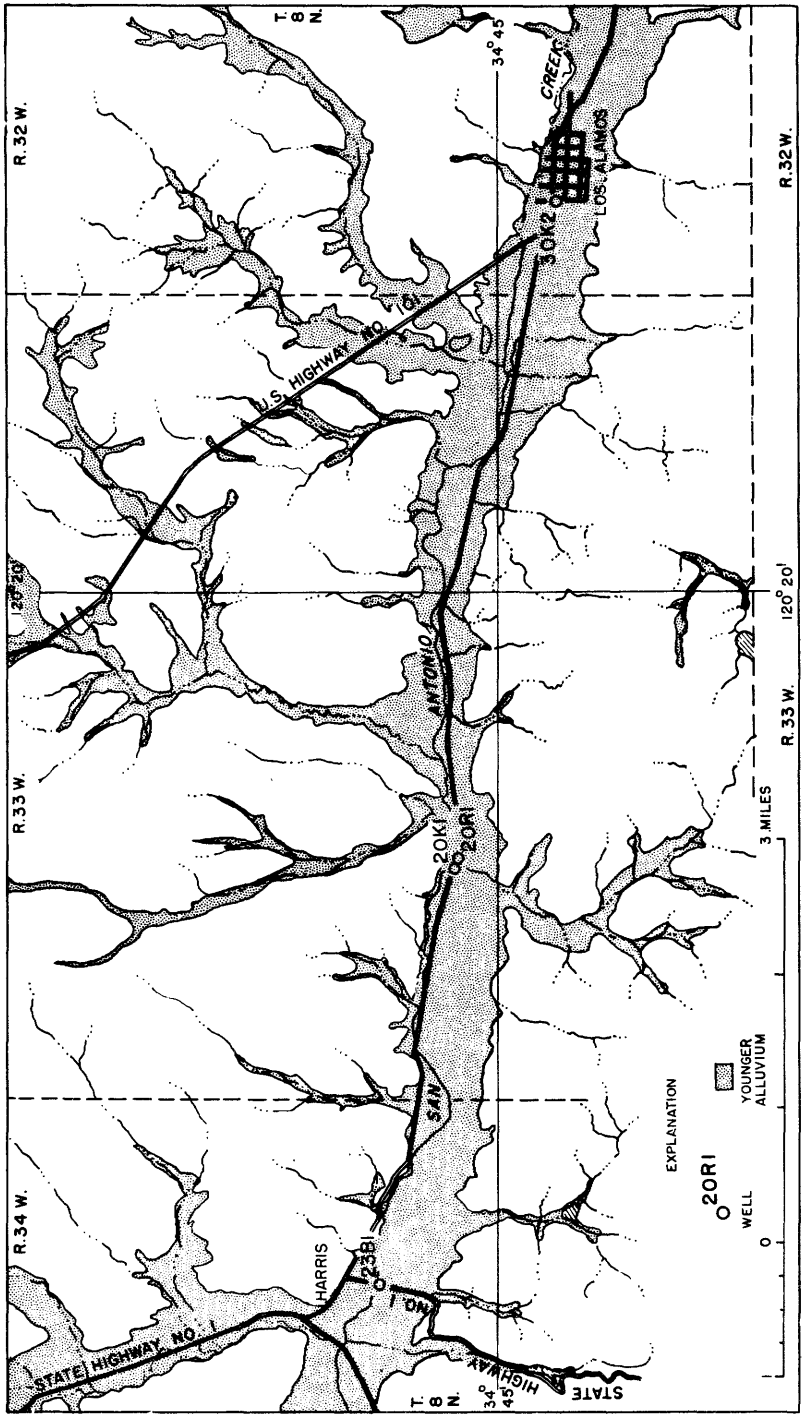


Figure 31.--Location of observation wells in San Antonio Valley, Santa Barbara County, Calif., 1952.

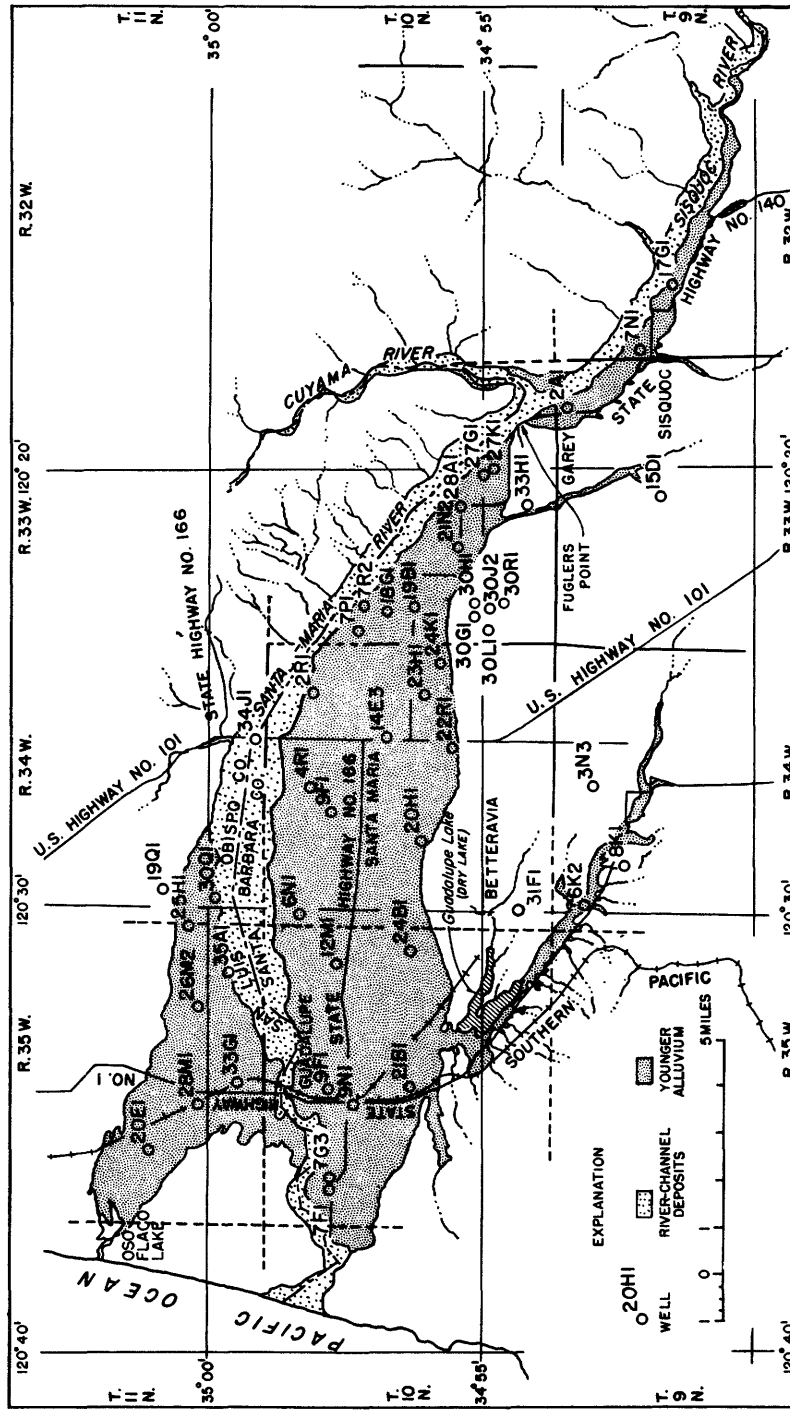


Figure 32.--Location of observation wells in Santa Maria Valley, Santa Barbara County, Calif., 1952.

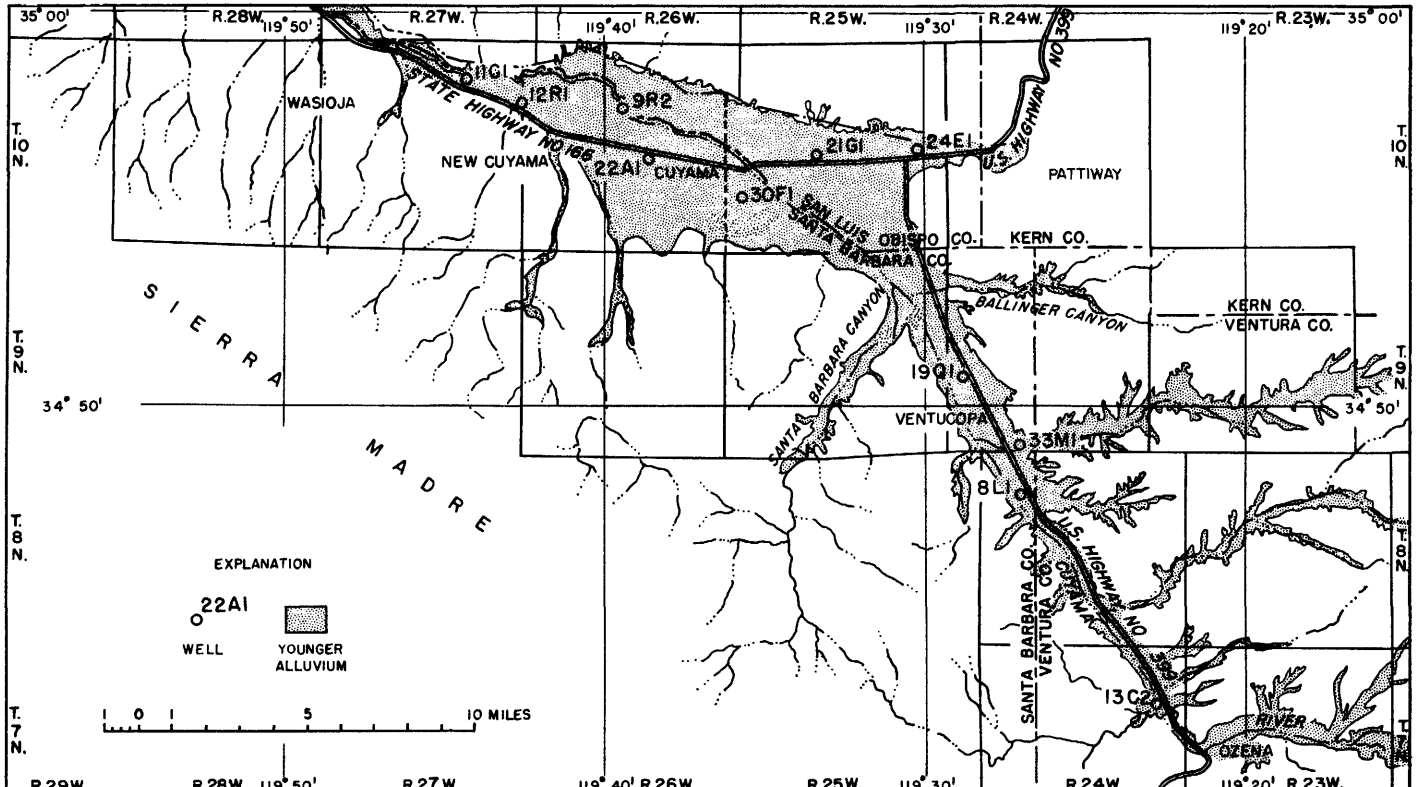


Figure 33. --Location of observation wells in Cuyama Valley, Santa Barbara County, Calif., 1952.

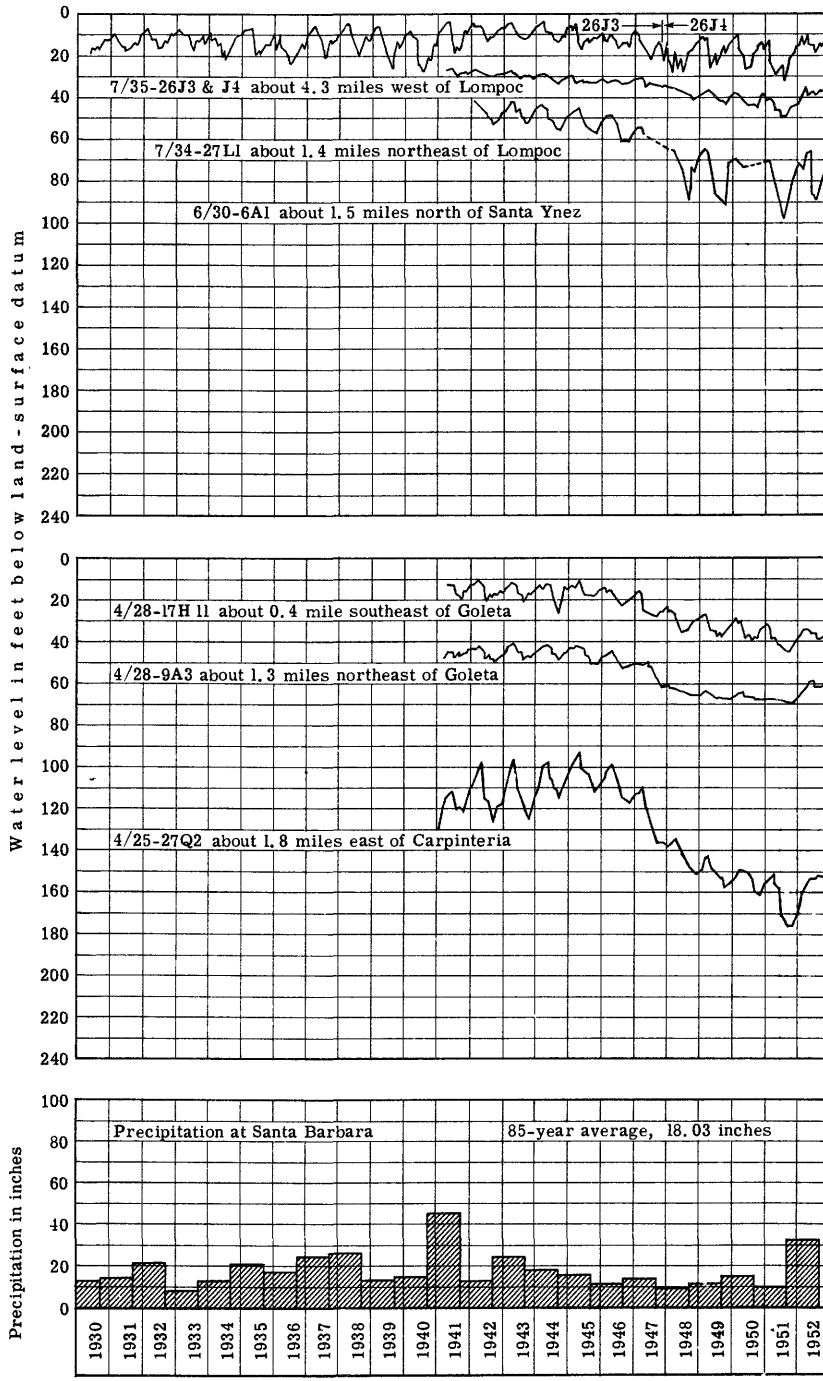


Figure 34. --Water-level fluctuations in 6 wells in Santa Barbara County and precipitation by water years at Santa Barbara, Calif.

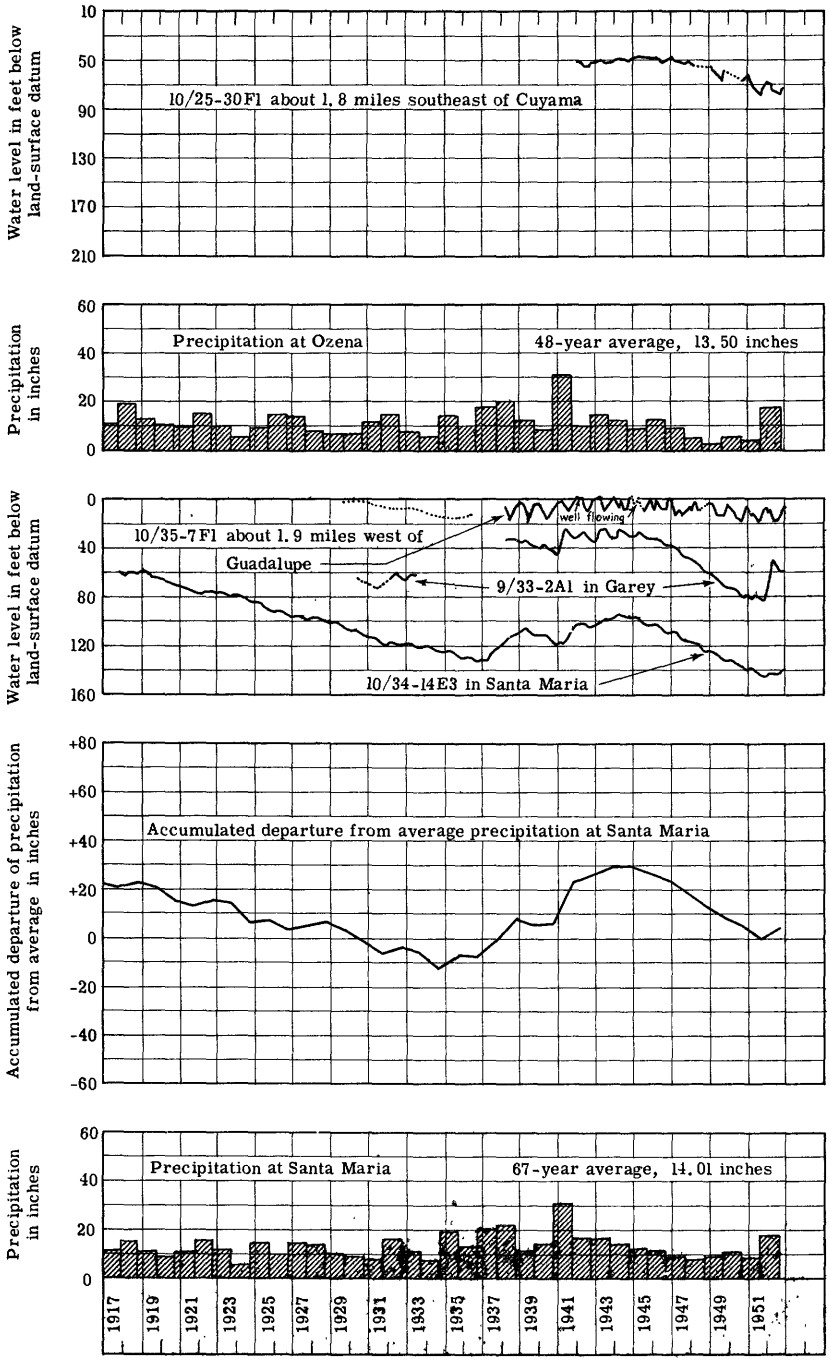


Figure 35.--Water-level fluctuations in 4 wells in Santa Barbara County and precipitation by water years at Santa Maria and Ozena, Calif.

the valley reach, water levels in most wells continued to show year-end declines that ranged from 0.5 foot to almost 5 feet. However, well 10/26-9R2, in an area of numerous springs and near the Cuyama River which was reported to have a continuous flow in 1952 at this point, had a year-end recovery of 3 feet. In the narrow upper part of the valley above the mouths of the Santa Barbara and Ballinger Canyons, the depleted ground-water body received some replenishment by seepage from the Cuyama River. The recovery of year-end water levels ranged from 23.47 feet at well 9/24-13C2 below Ozena to less than 1 foot at well 9/24-19Q1 about 14 miles downstream. The extent of ground-water recovery was limited, because this area has been greatly depleted in recent years by increased irrigation use and insufficient recharge to meet withdrawals.

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 1948. 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 three stations in 1952 was 118 percent of the 40-year average, a moderate increase from that of 1951 which was 107 percent of average.

Average yearly rise or decline of water levels in observation wells, and yearly rainfall in the Mokelumne area, 1948-52

Year	Number of wells	Water level		Rainfall[a]	
		Yearly rise (+) or decline (-) (feet)	Accumulated rise (+) or decline (-)[b] (feet)	Excess (+) or deficiency (-) (inches)	Accumulated excess (+) or deficiency (-)[b] (inches)
1948	21	-.78	-5.31	-.89	+7.67
1949	20	-.85	-6.16	-10.39	-2.72
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

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 1952 during the periods of increasing and of diminishing withdrawals for irrigation, respectively. This table shows the recharge early in 1952 was more than sufficient to offset the withdrawals for irrigation, as indicated by the average rise of about 0.6 foot. During the last half of the year this rise continued so that the average net change for the year was a rise of 1.1 feet.

Seasonal changes in water level, in feet, in 20 observation wells in the Mokelumne area, 1952

Period	Greatest rise	Greatest recession	Average change
Jan. 1 to May 31 (increasing withdrawal for irrigation)	+7.41	-4.46	+0.58
June 1 to Dec. 31 (diminishing withdrawal)	+7.05	-8.01	+.53
The Year	+3.02	-1.38	+1.11

Other Investigations by the Geological Survey

The cooperative investigation with the California Division of Water Resources, which began in 1948, continued during 1952. It is concerned chiefly with the surface and subsurface geologic features of the ground-water basins of the State. Field work in the valleys immediately north of San Francisco Bay was completed in 1952; a report was drafted on the Napa and Sonoma Valleys, and a report was in preparation on the Santa Rosa and Petaluma Valleys. A mimeographed reconnaissance report entitled, "Ground water in the Lower Lake-Middletown area, Lake County, California," was released in November. A reconnaissance investigation was begun in the Eureka area, in Humboldt County, along the north coast. A progress report was prepared covering that

part of the west side of the San Joaquin Valley in Fresno and Kings Counties, and periodic water-level measurements were continued in that area. Collection of basic data in a reconnaissance investigation of the balance of the San Joaquin Valley was well advanced and work was begun on analysis of the data. In cooperation with the San Bernardino County Flood Control District, the investigation of the ground-water movement across the San Jacinto fault, west of San Bernardino, was continued. In the Solano County investigation, which was financed wholly with Federal funds, work was continued on the analysis of basic data and the preparation of a comprehensive report on the geology and ground-water resources with special reference to usable ground-water storage capacity.

Well-Numbering System

The well-numbering system shows the locations 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 preceding 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 block within the section as shown by the accompanying 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 whose location is known only approximately, the symbol is shortened to the designation of township, range, and section only. Two or more such wells in a single section would be differentiated by the use of a lower-case letter following the section number -- for example, wells 10/3W-1 and 10/3W-1a in the San Luis Rey River basin in San Diego County. 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

Measurements supplied by the Los Angeles County Flood Control District.

9/13-20H1. Harry White. Near Rosamond-Willow Springs road. Irrigation well, diameter 12 inches, depth 350 feet. Records available: 1921-52. May 1, 102.4.

9/15-25D1. H. W. Hunter. Drilled well, diameter 8 inches, reported depth 334 feet. Records available: 1948-52. May 1, 229.7; Aug. 6, 229.95; Aug. 19, 230.3; Nov. 20, 230.1.

Los Angeles County

Antelope Valley
Measurements supplied by the Los Angeles County Flood Control District for wells marked with asterisk.

5/9-6B1. Owner unknown. Diameter 12 inches. Records available: 1940-52. Nov. 24, 50.04.

5/9-20J1. L. M. Nixon. Near Dano store. Domestic well, diameter 10 inches, depth 280 feet. Records available: 1942-43, 1945, 1947-49, 1952. Nov. 9, 262.36.

5/10-6N1.* Little Rock Irrigation District. Records available: 1938, 1940-52. May 1, 113.65; June 4, 113.45; July 10, 114.05; Aug. 6, 112.98; Sept. 8, 113.30; Nov. 14, 111.40.

5/10-7E1.* Calavalley. Unused irrigation well, diameter 16 inches. Records available: 1938, 1940-52. Nov. 14, 143.7.

5/10-12B1. Ed Sanner. Dug domestic well, depth 70 feet. Lowest water level dry, May 23, 1950, Nov. 24, 1952. Records available: 1940-41, 1943-52. Nov. 24, dry.

5/10-26B1. R. J. Darling. Unused well, diameter 10 inches, depth 87 feet. Records available: 1940-42, 1945-52. Nov. 24, 41.69.

5/11-4E1.* Sam Yellen. Records available: 1948-52. Nov. 17, 172.8.

5/11-9Q1.* Unused well, diameter 10 inches. Records available: 1940-46, 1948-52. Nov. 17, 54.8.

5/11-10R1.* Owner unknown. Near bridge over Little Rock Creek. Unused well, diameter 16 inches. Land-surface datum is about 2,835 feet above msl. Records available: 1927-28, 1930, 1932, 1937-52. July 10, 107.2; Aug. 6, 107.3; Sept. 8, 107.8; Nov. 14, 108.45.

5/11-12Q1.* Wheelock. Irrigation well, diameter 16 inches, depth 392 feet. Records available: 1940-52. Nov. 156.4.

6/8-10N2. Dug domestic well, diameter 36 inches, depth 35 feet. Records available: 1947-48, 1950-52. Dec. 3, 24.72.

6/8-18D1. Huff. Domestic and stock well, diameter 9 inches, depth 210 feet. Records available: 1939-41, 1944-52. Dec. 3, 161.99.

6/8-32P1. M. B. Scofield. Domestic well. Records available: 1940-45, 1948, 1950-52. Dec. 3, 186.93.

6/9-4H2. Wilsona School. Diameter 10 inches, depth 336 feet. Records available: 1949-52. Nov. 26, 126.50.

6/9-11N1. Highest water level 137.28 below lsd, Dec. 27, 1951; lowest 140.85 below lsd, Mar. 28, 1952. Records available: 1951-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 27, 1951	137.28	Apr. 24, 1952	137.60	July 31, 1952	137.86	Oct. 30, 1952	138.09
Jan. 30, 1952	137.32	May 27	137.67	Aug. 28	138.00	Nov. 26	138.27
Feb. 28	139.00	June 27	137.78	Sept. 30	138.04	Dec. 31	138.56
Mar. 28	140.85						

6/9-31R1. Barlow. Near Big Rock Creek. Diameter 16 inches. Land-surface datum is 2,833 feet above msl. Records available: 1940-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	43.05	Apr. 24	44.58	July 31	38.97	Oct. 30	40.95
Feb. 28	42.50	May 27	42.28	Aug. 28	37.58	Nov. 24	41.03
Mar. 28	43.40	June 27	41.20	Sept. 30	38.43	Dec. 31	40.93

6/10-9E1. Irrigation and domestic well. Land-surface datum is 2,576 feet above msl. Records available: 1940-43, 1945-46, 1948-52. Nov. 24, 194.99.

6/10-9Q1. Rhodes-Cogburn. Formerly N. C. & O. C. Riley. Irrigation and domestic well. Land-surface datum is 2,596 feet above msl. Records available: 1940-48, 1950-52. Nov. 24, 153.41.

6/10-10Q1. Unused well, depth 169 feet. Records available: 1943-52. Nov. 24, 76.92.

6/10-20P1. Mrs. Johnson. Unused well, diameter 10 inches. Records available: 1940-52. Jan. 30, 209.09; Feb. 28, 208.06; Mar. 28, 206.95. Sept. 30, 218.68; Oct. 30, 218.47; Nov. 24, 215.62; Dec. 31, 210.05.

6/10-27B1. Owner unknown. Irrigation well. Records available: 1940-41, 1943-52. Nov. 24, 157.12.

6/11-4C1. Lyons Bros. Irrigation well. Records available: 1942-43, 1945-46, 1948-49, 1951-52. Nov. 25, 216.25.

6/11-8E1. Palmdale Irrigation District. Unused well, diameter 16 inches, reported depth 400 feet. Land-surface datum is 2,512 feet above msl. Records available: 1942-44, 1946-52. Nov. 15, 219.52.

6/11-8R1. Owner unknown. Near Ave. O and 40th St. East. Irrigation well. Records available: 1940-49. No measurement made in 1952.

6/11-9F1. Elmer Benson. Irrigation well. Records available: 1940-43, 1945-47, 1949-52. Nov. 25, 223.84.

6/11-12M1. E. J. Ball. Irrigation well. Land-surface datum is 2,540 feet above msl. Records available: 1941-43, 1945-52. Nov. 25, 232.70.

6/11-12Q1. E. J. Ball. Unused well, diameter 18 inches. Records available: 1941-52. Nov. 25, 226.30

6/11-18P1. Elmer Richardson. Drilled irrigation and domestic well, diameter 12 inches, depth 506 feet. Records available: 1940-41, 1947-52. Nov. 25, 255.17.

6/11-19E1. Palmdale Irrigation District. Domestic and irrigation well. Land-surface datum is 2,583 feet above msl. Records available: 1930, 1937-50. No measurement made in 1952.

6/11-20R2. Formerly Albert Coon. Irrigation well, diameter 12 inches. Records available: 1946-50, 1952. Nov. 25, 259.40.

6/11-26J1. L. A. Hudson. Domestic well, diameter 8 inches, reported depth 200 feet. Records available: 1947, 1949-52. Nov. 25, 150.22.

6/12-24C1. Palmdale Irrigation District. Records available: 1950-52. May 1, 275.1; June 4, 255.85; July 8, 278.2; Aug. 6, 280.35; Sept. 8, 282.95; Nov. 7, 283.3.

6/13-12J1.* Glick. Records available: 1940-52. Nov. 21, 254.7.

7/9-17N1. Ernest Koch. Drilled irrigation well, diameter 14 inches. Records available: 1945-48, 1950-52. Dec. 3, 175.18.

7/9-28M1.* Tygeson. Domestic well, diameter 12 inches, depth 138 feet. Records available: 1948-52. Dec. 3, 153.22.

7/10-5N3. Ella E. Cunningham. Drilled irrigation well, depth 980 feet. Records available: 1945-47, 1949-52 Nov. 26, 151.68.

7/10-6R1. Mrs. Jessie Hollingsworth. Irrigation and domestic well, diameter 7 inches, reported depth 1,500 feet. Records available: 1945-51. No measurement made in 1952.

7/10-12H1. McCavern. Domestic well. Records available: 1944-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	150.20	Apr. 24	151.0	July 31	153.33	Oct. 30	(f)
Feb. 28	150.34	May 27	151.67	Aug. 28	154.39	Nov. 26	(f)
Mar. 28	150.30	June 27	152.43	Sept. 30	158.33	Dec. 31	(f)

7/10-21A1. Owner unknown. Unused well, diameter 12 inches. Records available: 1943-52. Nov. 25, 188.10.

7/10-30G1. E. J. Ball. Irrigation well, diameter 14 inches, depth 450 feet. Records available: 1940-43, 1946-47, 1949-52. Nov. 25, 221.70.

7/10-31N1. H. O. Bakken. Irrigation well, diameter 12 inches, depth 365 feet. Records available: 1940-41, 1943, 1945-48, 1950-52. Nov. 25, 232.02.

7/11-8P1. Mae Avery. Unused irrigation well, diameter 10 inches, reported depth 300 feet. Records available: 1933-52. Dec. 2, 81.79.

7/11-16B1. Domestic well. Records available: 1943-52. Dec. 2, 118.62.

7/11-19N1. Irrigation well. Records available: 1943, 1945-52. Nov. 25, 170.28.

7/11-23L1. Mrs. Barnes. Domestic well. Records available: 1940-43, 1945-52. Nov. 25, 162.10.

7/11-24C1. Stevenson. Records available: 1932-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	167.23	Apr. 24	168.24	July 31	178.03	Oct. 30	179.73
Feb. 28	167.20	May 27	170.80	Aug. 28	181.78	Nov. 25	176.40
Mar. 28	168.18	June 27	173.62	Sept. 30	182.10	Dec. 31	173.69

7/11-27F1. James N. Provonyance. Drilled irrigation well. Records available: 1940-41, 1943, 1947-48, 1950-52. Nov. 25, 193.79.

7/11-28E1. The Alamo Ranch. Formerly Leshin. Irrigation well. Records available: 1943, 1945-52. Nov. 25, 192.30.

7/11-28L1. Unused irrigation well, diameter 12 inches, reported depth 200 feet. Records available: 1937-52. Nov. 25, 161.66.

7/12-4P2.* Unused well, diameter 3 inches. Records available: 1940-52. May 1, 6.9; Aug. 19, 9.7; Nov. 12, dry.

7/12-15F1. Agnes H. Powell. Ninth and Elm Sts., Lancastar. Records available: 1942-52. May 2, 73.95; June 4, 74.85; Aug. 1, 77.25; Oct. 1, 80.15; Nov. 12, 78.98.

7/12-15F2.* Los Angeles County W. D. 4. Tenth and Date Sts., Lancaster. Unused well, diameter 16 to 12 inches, depth 372 feet. Records available: 1943-45, 1947-52. Nov. 18, 76.2.

7/12-22J1.* F. LaHorgue. Domestic well, diameter 8 inches, depth 255 feet. Records available: 1942-52. Oct. 2, 140.0; Nov. 12, 138.2.

7/12-29P1.* Old Community well. Irrigation well. Records available: 1939-43, 1945-47, 1949-52. Nov. 18, 168.1.

7/12-34E1.* George Lane. Irrigation well, diameter 16 to 12 inches, depth 555 feet. Records available: 1941, 1944, 1947-52. Nov. 18, 230.5.

7/13-3D1.* Felix Gorrindo. Records available: 1945-52. Oct. 29, 129.5; Nov. 13, 115.0, nearby well being pumped.

7/13-3D2.* Felix Gorrindo. Unused well, diameter 14 inches. Records available: 1945-52. Nov. 13, 64.5.

7/13-9N1.* Edward Dunham. Records available: 1950-52. Nov. 21, 122.5.

7/13-11D1.* Records available: 1942-52. Nov. 13, 7.05.

7/13-17D1.* G. Faro. Records available: 1937, 1939-45, 1947-48, 1950-52. Nov. 20, 147.3.

7/13-21J2.* L. H. Benson. Unused well, diameter 10 inches, depth 250 feet. Records available: 1942-45, 1947-52. Nov. 21, 126.1.

7/13-27N1.* A. F. Godde. Irrigation well. Records available: 1941-43, 1945-52. Nov. 24, 180.6.

7/13-35E1.* George Lane. Diameter 12 inches. Records available: 1937-52. Dec. 24, 229.9.

7/14-10F1.* F. A. Ullman. Diameter 10 inches, depth 250 feet. Records available: 1942-43, 1945-52. Apr. 30, 214.98.

8/9-4N2. U. S. Army Reservation. Chas. W. Green. Diameter 6 inches, depth 245 feet. Records available: 1941-52. Dec. 2, 17.57.

8/9-4P1. U. S. Army Reservation. Records available: 1941-43, 1945-52. Dec. 2, 27.76.

8/9 6N1. U. S. Army Reservation. Diameter 5 inches. Records available: 1941-52. Dec. 2, 13.87.

8/10-2P1. U. S. Army Reservation. Depth 75 feet. Records available: 1941-52. Dec. 2, 29.48.

8/10-8R3. J. G. Walsh. Records available: 1947-52. Jan. 30, 36.34; Feb. 28, 37.51; Mar. 28, 37.60; Apr. 24, 41.80; Oct. 30, 42.17; Nov. 26, 39.88; Dec. 31,39.08.

8/10-9M1. J. M. Hamilton. Records available: 1921-52. Jan. 30, dry.

8/10-9N1. Drilled well, diameter 12 inches, Land-surface datum is 2,311 feet above msl. Records available: 1951-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	35.01	Apr. 24	35.77	July 31	37.21	Oct. 30	37.73
Feb. 28	34.92	May 27	36.17	Aug. 28	37.65	Nov. 26	37.55
Mar. 28	34.90	June 27	36.68	Sept. 30	37.86	Dec. 31	37.36

8/10-19Q1. Union Trust and Savings Bank. Irrigation well, diameter 12 inches, reported depth 750 feet. Records available: 1939-48, 1950-52. Nov. 26, 116.43.

8/10-32N1. John Demuth. Domestic well, diameter 8 inches, depth 97 feet. Records available: 1948-52.

Jan. 30	84.98	Apr. 24	85.11	July 31	88.09	Oct. 30	89.98
Feb. 28	84.33	May 27	86.08	Aug. 28	88.77	Nov. 26	89.60
Mar. 28	83.08	June 27	87.10	Sept. 30	89.50	Dec. 31	89.02

8/11-8P1. Records available: 1945-52. Dec. 2, dry.

8/11-10N1. E. R. Siple. Records available: 1945-52. Dec. 2, 44.45.

8/11-20L1.* Records available: 1943-47, 1949-52. Nov. 14, dry.

8/11-22N3. Lewis Protho. Records available: 1937-52. Dec. 2, 94.60.

8/11-30R1. Records available: 1941, 1943-49, 1951-52. Dec. 2, 40.83.

8/12-4K1.* Records available: 1943-47, 1949-52. Nov. 12, 27.4.

8/12-20B1.* Records available: 1941-52. Nov. 12, 36.02.

8/12-22D1.* Old Railroad well. Records available: 1940-52. Apr. 18, 9.1; May 19, 9.75, June 11, 13.9, July 8, dry.

8/12-22M1.* Records available: 1943-52. Nov. 12, 25.2.

8/12-22M2.* Records available: 1943-52. Nov. 12, 26.15.

8/12-22R1.* I. B. Wibigler. Diameter 6 inches, reported depth 400 feet. Records available: 1941-45, 1947-52. Nov. 13, 43.85.

8/12-24R1. Records available: 1941-52. Dec. 2, 20.80.

8/13-7H1.* Lone Butte Ranch. Records available: 1940-44, 1946-52. Nov. 20, 151.6.

8/13-20M1.* O. T. Kelly and Son. Diameter 16 inches, depth 600 feet. Records available: 1945-52. Nov. 20, 156.30.

8/13-22K1.* A. G. Andrews. Irrigation well, reported depth 475 feet. Records available: 1942-43, 1945-52. Nov. 19, 100.2.

8/13-23M1.* A. G. Andrews. Records available: 1942-43, 1945-48, 1950-52. Nov. 13, 102.4.

8/13-32N1.* Pedro Lizarraga. Diameter 16 inches, depth 570 feet. Records available: 1945-52. Nov. 20, 148.4.

8/14-2R1.* Diameter 14 inches. Records available: 1942-43, 1945-52. Nov. 24, 188.3.

8/14-12A1.* H. G. Ranch No. 1. Reported depth 500 feet. Records available: 1940-52. Nov. 20, 168.55.

8/14-12D1.* H. G. Ranch No. 1. Records available: 1939-40, 1942-52. Nov. 24, 177.0.

8/14-14R1.* Records available: 1943-52. Nov. 24, 183.8.

8/14-17Q1.* Marl Cravan, Tibola. Domestic well, diameter 8 inches, depth 200 feet. Records available: 1946-52. Nov. 20, 165.8.

8/14-25C2.* Records available: 1945, 1947-52. Nov. 24, 169.8.

8/14-25D1.* Records available: 1946, 1948-52. Nov. 24, 180.2.

8/15-10P1.* Scott. Records available: 1945-48, 1950. No measurement made in 1952.

8/14-17R1.* Canfield. Records available: 1946-52. Apr. 18, 115.8; May 19, 115.92; June 11, 116.0; Aug. 6, 118.0; Aug. 20, 118.3; Oct. 1, 118.45; Nov. 19, dry.

8/15-24B2.* W. L. Larson. Domestic well, diameter 10 inches, depth 250 feet. Records available: 1946-52. Aug. 20, 149.55; Nov. 19, 150.15.

8/15-27R1.* I. T. Brandt. Records available: 1945-52. Apr. 30, 145.9; Aug. 20, 146.2; Nov. 19, 146.6.

8/15-33G1.* Correll. Records available: 1946-52. Nov. 21, 219.7.

8/15-36M1.* Fairmont School. Records available: 1943-45, 1947, 1949-52. Nov. 19, 88.7.

8/16-5N1.* Carpy (International Harvester Co.). Records available: 1942-52. Apr. 30, 198.25; Aug. 20, 198.45; Nov. 19, 198.1.

8/16-14L1.* Snyder. Records available: 1945-47, 1949-50, 1952. Nov. 21, 12.13.

9/12-16N1.* Chevron Gas Station. Records available: 1950-52. Apr. 18, 67.25; May 19, 67.1; June 11, 69.45; Aug. 6, 75.95; Aug. 19, 76.5; Nov. 12, 73.45.

San Gabriel River Basin

1S/10-18. Baldwin Park. Drilled water-table observation well in alluvial deposits, diameter 16 inches, depth 200 feet, perforations 74-174. Land-surface datum is 387.1 feet above msl. Highest water level 56.0 below lsd, May 19, 1916; lowest 141.62 below lsd, Nov. 20, 1951. Records available: 1903-52.

Daily mean water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	140.26	130.02	122.95	116.87	111.92	114.36	117.27	120.42	123.34	125.43	125.43	112.48
2	140.24	129.26	123.05	116.40	111.92	114.46	117.40	120.51	123.44	125.47	125.28	112.33
3	140.20	127.56	123.12	115.95	112.04	114.58	117.50	120.61	123.56	125.53	125.10	112.26
4	140.16	127.92	123.12	115.57	112.10	114.68	117.58	120.70	123.67	125.56	124.87	112.20
5	140.12	126.33	123.15	115.22	112.12	114.77	117.65	120.82	123.76	125.61	124.60	112.11
6	140.08	126.77	123.15	114.88	112.16	114.84	117.75	120.92	123.86	125.67	124.30	112.10
7	140.07	126.22	123.14	114.51	112.25	114.94	117.85	121.01	123.95	125.73	124.00	112.13
8	140.04	124.75	123.15	114.18	112.31	115.03	117.95	121.12	124.04	125.76	123.66	112.16
9	140.00	125.29	123.20	113.83	112.35	115.12	118.04	121.22	124.12	125.82	123.24	112.19
10	139.96	124.90	123.18	113.50	112.38	115.20	118.14	121.30	124.21	125.91	122.80	112.20

1S/10-18--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	139.92	124.53	123.23	113.25	112.45	115.31	118.24	121.37	124.28	125.97	122.34	112.23
12	139.90	124.20	123.26	113.00	112.54	115.40	118.37	121.44	124.34	126.02	121.89	112.30
13	139.88	123.90	123.24	112.77	112.62	115.52	118.46	121.54	124.40	126.04	121.39	112.31
14	139.86	123.67	123.25	112.57	112.67	115.63	118.56	121.64	124.48	126.07	120.87	112.33
15	139.82	123.49	123.17	112.38	112.73	115.74	118.64	121.73	124.56	126.11	120.33	112.39
16	139.77	123.32	123.15	112.24	112.82	115.83	118.76	121.82	124.62	126.13	119.83	112.41
17	139.73	123.19	123.15	112.13	112.91	115.97	118.86	121.90	124.70	126.19	119.35	112.43
18	139.69	123.13	123.12	112.08	113.01	116.09	118.96	121.99	124.80	126.24	118.83	112.55
19	139.63	123.06	122.99	111.97	113.09	116.20	119.05	122.07	124.87	126.24	118.24	112.63
20	139.54	122.99	122.85	111.94	113.16	116.31	119.16	122.17	124.92	126.25	117.61	112.65
21	139.38	122.95	122.66	111.93	113.27	116.43	119.25	122.27	124.97	126.25	117.01	112.76
22	139.12	122.93	122.36	111.92	113.36	116.54	119.35	122.36	125.03	126.22	116.39	112.75
23	138.60	122.92	121.94	111.89	113.47	116.63	119.45	122.46	125.11	126.18	115.76	112.80
24	137.90	122.91	121.38	111.90	113.60	116.70	119.56	122.56	125.18	126.11	115.17	112.86
25	137.04	122.93	120.82	111.90	113.69	116.78	119.67	122.65	125.26	126.06	114.63	112.88
26	136.04	122.92	120.19	111.88	113.77	116.87	119.78	122.75	125.30	126.02	114.08	112.92
27	134.96	122.96	119.58	111.87	113.89	116.95	119.91	122.83	125.34	125.93	113.59	112.95
28	133.87	123.02	118.97	111.93	114.00	117.05	120.00	122.92	125.37	125.85	113.25	112.98
29	132.71	123.06	118.41	111.96	114.06	117.13	120.10	123.01	125.40	125.77	112.92	113.02
30	131.54		117.89	111.96	114.16	117.18	120.20	123.10	125.41	125.68	112.69	113.06
31	130.36		117.39		114.28		120.30	123.20		125.58		113.08

Coastal plain

2S/12-13A1. Lycan Bros. Near Montebello. Drilled unused water-table well in Gaspur water-bearing zone of Recent age, diameter 8 inches, depth 85 feet. Land-surface datum is 181 feet above msl. Records furnished by San Gabriel Valley Protective Association. Highest water level 17.51 below lsd, Aug. 4, 1941; lowest 79.67 below lsd, Nov. 28, 1951. Records available: 1928-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	76.72	Apr. 2	52.83	July 9	55.11	Oct. 8	69.69
9	75.11	9	52.33	16	55.98	15	70.53
16	73.58	16	51.83	23	56.88	22	70.84
24	70.21	23	51.38	30	57.95	29	70.30
30	66.58	30	50.96	Aug. 6	59.05	Nov. 5	68.04
Feb. 6	63.17	May 7	50.72	13	60.14	12	64.48
13	61.00	14	50.84	20	61.29	19	62.36
20	59.60	28	51.47	27	62.51	26	60.68
27	58.54	June 4	51.97	Sept. 3	63.93	Dec. 3	59.49
Mar. 5	57.86	11	52.48	10	65.40	10	58.83
12	56.90	18	53.11	17	66.67	17	57.74
19	55.51	25	53.81	24	67.80	24	57.27
26	53.88	July 2	54.45	Oct. 1	68.80	31	56.64

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 92 feet above msl. Records furnished by San Gabriel Valley Protective Association. Highest water level 14.13 below lsd, Mar. 13, 1930; lowest 56.42 below lsd, July 28, 1952. Records available: 1930-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 7	46.68	Apr. 7	46.98	July 7	54.28	Oct. 6	54.35
14	46.40	14	45.70	14	54.93	13	54.16
21	46.02	21	45.56	21	54.13	20	53.43
28	45.79	28	45.43	28	56.42	27	53.33
Feb. 4	45.87	May 5	48.73	Aug. 4	54.98	Nov. 3	53.32
11	46.08	12	49.87	11	54.88	10	52.79
18	46.28	19	51.65	18	54.86	17	51.53
25	47.30	26	51.95	25	55.74	24	50.58
Mar. 3	46.50	June 2	51.88	Sept. 1	55.83	Dec. 1	49.92
10	45.21	9	51.85	8	55.33	8	49.54
17	44.96	16	53.33	15	55.09	15	49.63
24	45.25	23	53.58	22	54.36	22	49.81
31	45.86	30	53.49	29	54.36	29	49.00

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 74 feet above msl. Records furnished by Southern California Water Co. Highest water level 97 below lsd, Feb. 1, 1942; lowest 168 below lsd, Sept. 14, 1950. Records available: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 7	155	Apr. 7	142	July 7	150	Oct. 7	150
14	150	14	141	14	150	14	150
21	145	21	140	21	150	21	150
28	146	28	141	28	150	28	150
Feb. 7	143	May 7	140	Aug. 7	150	Nov. 7	150
14	140	14	142	14	150	14	150
21	140	21	142	21	150	21	150
28	141	28	142	28	150	28	150
Mar. 7	140	June 7	142	Sept. 7	150	Dec. 7	150
14	139	14	143	14	150	14	150
21	139	21	144	21	150	21	151
28	140	28	154	28	150	28	151

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 63 feet above msl. Records furnished by Southern California Water Co. Highest water level 66 below lsd, May 1, 1931; lowest 125 below lsd, July 28, Aug. 7, 14, 21, 28, 1951. Records available: 1931-37, 1939-52.

Jan. 7	112	Apr. 7	114	July 7	123	Oct. 7	122
14	112	14	115	14	123	14	122
21	113	21	115	21	123	21	121
28	112	28	116	28	123	28	120
Feb. 7	112	May 7	120	Aug. 7	123	Nov. 7	120
14	113	14	122	14	122	14	120
21	114	21	123	21	123	21	118
28	116	28	123	28	124	28	117
Mar. 7	115	June 7	123	Sept. 7	124	Dec. 7	116
14	115	14	123	14	124	14	116
21	114	21	124	21	124	21	116
28	114	28	123	28	124	28	116

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. Records furnished by Orange County Flood Control District. Highest water level 3.41 below lsd, Mar. 17, 1933; lowest 74.68 below lsd, July 24, 1951. Records available: 1930-52.

Jan. 31	32.61	Apr. 22	32.61	July 22	66.54	Oct. 28	60.25
Feb. 26	32.42	May 27	52.03	Aug. 21	72.10	Nov. 25	48.85
Mar. 21	31.22	June 20	64.35	Sept. 26	71.33	Dec. 30	37.43

4S/12-8P1. Montana Land Co. Near Signal Hill. Drilled unused artesian well in gravel in lowermost part of Silverado water-bearing zone of Pleistocene age, diameter 14 inches, depth 714 feet, perforations 698-714. Land-surface datum is 68.28 feet above msl. Records furnished by city of Long Beach. Highest water level 0.2 above lsd, July 30, 1903; lowest 145.40 below lsd, Aug. 13, 1951. Records available: 1903, 1914-19, 1923-52.

Jan. 7	126.71	Apr. 7	120.86	July 7	129.76	Oct. 6	142.75
14	126.19	14	118.95	14	134.26	13	142.70
21	124.85	21	117.92	21	136.06	20	142.17
28	123.75	28	116.81	28	138.31	27	142.41
Feb. 4	121.36	May 5	116.86	Aug. 4	138.43	Nov. 3	140.09
11	123.10	12	118.34	11	139.47	10	138.27
18	124.40	19	119.56	18	139.78	17	135.08
25	124.83	26	120.62	25	141.22	24	132.18
Mar. 3	124.43	June 2	120.45	Sept. 1	142.25	Dec. 1	129.42
10	124.06	9	121.00	8	143.54	8	125.13
17	122.60	16	122.64	15	143.77	15	122.22
24	121.00	23	125.27	22	143.65	22	121.08
31	121.84	30	127.72	29	143.59	29	117.57

4S/13-14L1. Southern California Edison Co., Ltd. Drilled unused artesian well in Gaspur water-bearing zone of Recent age, diameter 10 inches, depth 114 feet, perforations 90-116. Land-surface datum is 28.55 feet above msl. Records furnished by city of Long Beach. Highest water level 20.62 below lsd, Apr. 5, 1941; lowest 36.04 below lsd, Nov. 3, 1952. Records available: 1930-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 7	35.28	Apr. 7	34.32	July 7	35.47	Oct. 6	35.87
14	35.17	14	34.12	14	35.49	13	35.87
21	34.86	21	34.10	21	35.62	20	35.88
28	34.69	28	33.98	28	35.90	27	35.88
Feb. 4	34.60	May 5	34.24	Aug. 4	35.87	Nov. 3	36.04
11	34.59	12	34.26	11	35.74	10	35.99
18	34.54	19	34.49	18	35.64	17	35.83
25	34.50	26	34.76	25	35.68	24	35.77
Mar. 3	34.54	June 2	34.71	Sept. 1	35.79	Dec. 1	35.73
10	34.34	9	34.74	8	35.94	8	35.64
17	34.21	16	34.79	15	35.87	15	35.61
24	34.07	23	35.04	22	35.79	22	35.53
31	34.12	30	35.27	29	35.80	29	35.49

4S/13-23G2. City of 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. Records furnished by city of Long Beach. Highest water level 52.93 below lsd, Feb. 6, 1939; lowest 125.89 below lsd, Sept. 10, 1952. Records available: 1932-52.

Jan. 2	104.20	Apr. 8	104.66	July 8	116.92	Oct. 7	121.35
8	103.19	15	104.32	15	116.85	14	121.81
15	102.62	22	103.98	22	118.50	21	119.82
22	102.80	29	102.12	29	121.60	28	119.74
29	103.20	May 6	106.55	Aug. 5	120.50	Nov. 3	119.23
Feb. 6	103.68	13	109.56	12	120.30	10	120.09
13	101.37	20	111.95	19	120.99	17	116.20
19	103.80	27	112.57	25	122.62	24	114.10
26	105.00	June 4	113.09	Sept. 2	124.07	Dec. 2	112.82
Mar. 4	104.64	10	113.70	10	125.89	9	112.86
11	102.79	17	116.39	16	124.35	16	113.21
18	101.25	24	117.47	23	123.85	23	112.73
25	102.28	July 1	117.23	30	123.52	30	110.93
Apr. 1	103.55						

Orange County

Coastal plain
Measurements supplied by Orange County Flood Control District
unless otherwise indicated

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 102.74 below lsd, July 30, 1951. Records available: 1930-52.

Jan. 7	92.04	Mar. 17	88.76	May 19	101.02	Oct. 20	107.47
14	92.30	24	88.69	June 23	109.24	27	106.00
28	91.31	31	88.89	30	112.98	Nov. 17	98.99
Feb. 4	90.55	Apr. 7	89.35	Aug. 4	118.59	Dec. 1	93.55
11	90.07	14	89.08	Sept. 8	118.36	8	92.56
18	92.28	21	88.57	22	113.99	15	92.23
25	90.43	28	88.02	Oct. 6	111.40	22	90.86
Mar. 3	90.48	May 5	91.61	14	110.50	29	90.16
10	90.39	12	97.99				

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 110-158, 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: 1928-52.

Jan. 10	141.76	Apr. 8	135.97	June 12	141.01	Nov. 7	144.62
Feb. 14	139.28	May 6	g135.30	Sept. 12	149.12	Dec. 5	138.67
Mar. 13	138.30	9	135.28	Oct. 9	146.95		

g By Geological Survey.

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. Measurements by city of Long Beach. Highest water level flowing, 1901; lowest 63.66 below lsd, July 30, 1951. Records available: 1901, 1903, 1929-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 7	36.02	Apr. 7	28.03	July 7	52.22	Oct. 6	50.72
14	40.40	14	27.80	14	59.16	13	48.06
21	34.38	21	28.18	21	58.75	20	45.58
28	32.44	28	29.76	28	56.01	27	43.53
Feb. 4	31.50	May 5	30.71	Aug. 4	58.70	Nov. 3	41.52
11	31.07	12	33.95	11	58.32	10	41.04
18	30.95	19	37.03	18	56.03	17	39.11
25	31.44	26	42.94	25	54.12	24	36.74
Mar. 3	31.56	June 2	45.67	Sept. 1	57.18	Dec. 1	35.19
10	30.67	9	48.51	8	55.56	8	33.39
17	28.86	16	47.74	15	54.74	15	32.82
24	27.78	23	48.93	22	55.39	22	32.31
31	27.66	30	51.85	29	52.78	29	31.72

5S/10-9D1. Julio Martinez. Near Garden Grove. Drilled public-supply artesian well in Gaspur water-bearing zone of Recent age and possibly in underlying Pleistocene deposits, 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 88.05 below lsd, Aug. 10, 1951. Records available: 1922 1924-25, 1927-28, 1930-52.

Feb. 14	79.63	May 9	79.41	July 8	85.91	Nov. 7	86.93
Mar. 13	80.10	June 12	82.65	Aug. 12	86.64	Dec. 5	83.74
Apr. 8	78.75						

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 72.59 below lsd, July 10, 1952. Records available: 1935-52.

Jan. 11	51.08	Apr. 11	47.44	July 10	72.59	Nov. 13	59.23
Feb. 15	49.35	May 13	52.30	Aug. 12	65.62	Dec. 9	51.33
Mar. 14	50.54	June 12	56.80	Sept. 12	69.20		

5S/1102E1. Western Trust & Savings Bank. Near Westminster. Drilled irrigation artesia 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 85.16 below lsd, Aug. 7, 1952. Records available: 1929-52.

Jan. 10	61.46	Apr. 3	57.26	Aug. 7	85.16	Nov. 6	68.12
Feb. 8	56.98	June 10	74.38	Sept. 11	84.21	Dec. 4	56.57
Mar. 11	57.38	July 3	82.12	Oct. 7	74.93		

5S/11-16D2. Anaheim Sugar Co. Near Seal Beach. Drilled unused artesian well in deposit 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. 7, 1930; lowest 46.05 below lsd, Aug. 8, 1951. Records available: 1929-52.

Jan. 2	29.07	Apr. 9	23.40	July 9	37.90	Oct. 8	39.21
9	31.29	16	22.80	16	39.36	15	38.06
16	32.46	23	23.12	23	39.89	22	35.93
23	29.64	30	23.00	30	41.63	29	33.50
30	28.92	May 7	24.25	Aug. 6	41.41	Nov. 5	33.35
Feb. 6	28.83	14	25.91	13	41.67	12	32.78
13	30.13	21	28.50	20	40.40	19	30.23
20	29.65	28	32.43	27	40.42	26	28.54
27	31.59	June 4	32.57	Sept. 2	41.32	Dec. 3	27.32
Mar. 5	31.84	11	33.42	10	42.62	10	26.42
12	27.75	18	33.72	17	39.92	17	25.78
19	25.23	25	34.54	24	40.12	24	25.27
26	23.90	July 2	35.98	Oct. 1	39.56	31	24.60
Apr. 2	23.44						

5S/11-18N1. U. S. Naval Depot. Drilled unused 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. Record available: 1941-48, 1951-52. May 16, 4.49; Dec. 31, 3.57.

5S/11-18P1. U. S. Naval Depot. Drilled unused 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 2.26 below lsd, Dec. 31, 1951. Records available: 1941-48, 1951-52. May 16, 2.17; Dec. 31, 2.07.

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 69.58 below lsd, Feb. 15, 1951. Records available: 1930-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 11	60.85	Apr. 11	56.51	July 10	61.94	Oct. 10	64.09
Feb. 15	61.13	May 13	56.79	Aug. 12	64.10	Nov. 13	61.05
Mar. 14	60.62	June 12	59.68	Sept. 12	67.12	Dec. 9	57.92

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 50.60 below lsd, Feb. 15, 1951. Records available: 1930-52.

Mar. 14	36.27	June 12	29.08	Sept. 12	40.32	Nov. 13	35.46
Apr. 10	29.65	July 10	34.17	Oct. 10	39.14	Dec. 9	31.08
May 13	25.78	Aug. 12	38.34				

5S/11-29C4. Sunset Land & Water Co. Near Sunset Beach. Drilled unused artesian well in deposits of Pleistocene age, diameter 7 inches, depth 157 feet. Land-surface datum is 7.90 feet above msl. Highest water level 1.96 above lsd, Feb. 2, 1942; lowest 29.50 below lsd, Aug. 14, 1951. Records available: 1941-52.

Jan. 11	21.18	Apr. 10	15.70	July 10	23.97	Oct. 10	27.95
Feb. 15	20.03	May 13	16.03	Aug. 12	26.35	Nov. 13	23.21
Mar. 14	18.66	June 12	20.54	Sept. 11	27.63	Dec. 9	19.58

5S/11-29E1. U. S. Government. Near Sunset Beach. Drilled unused 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, 1951-52. May 16, 7.36; Dec. 31, 6.45.

5S/11-29E2. U. S. Government. Near Sunset Beach. Drilled unused observation well in water-bearing deposits of Pleistocene age, diameter 6 inches, depth 120 feet. Land-surface datum is 6.57 above msl. Highest water level 4.06 below lsd, Dec. 20, 1941; lowest 5.93 below lsd, May 16, 1952. Records available: 1941-48, 1951-52. May 16, 5.93; Dec. 31, 5.01.

5S/12-12P1. U. S. Government Naval Depot. 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. Records furnished by city of Long Beach. Highest water level 6.26 below lsd, Mar. 13, 1933; lowest 34.66 below lsd, Aug. 23, 1951. Records available: 1930-52.

Jan. 10	28.71	Mar. 28	23.88	July 11	29.56	Oct. 31	30.18
Feb. 1	26.77	Apr. 16	23.38	Aug. 8	32.22	Nov. 21	27.97
20	26.28	May 2	22.63	29	32.20	Dec. 12	26.02
Mar. 7	26.84	June 13	27.37	Oct. 10	32.26		

5S/12-13D1. U. S. Navy Depot. Near Seal Beach. Drilled unused 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, 1951-52. May 16, 23.99; Dec. 31, 23.82.

6S/10-1E1. Frank Ey. Near Costa Mesa. Drilled irrigation artesian well in deposits of Pleistocene age, depth 300 feet. Land-surface datum is 34.17 feet above msl. Highest water level 14.54 below lsd, Jan. 17, 1942; lowest 84.00 below lsd, July 16, 1951. Records available: 1930-52.

Jan. 7	54.46	Apr. 14	47.74	July 14	65.46	Oct. 14	57.95
14	51.30	21	47.74	21	66.46	20	57.53
28	52.71	28	47.46	28	68.00	27	56.76
Feb. 4	51.27	May 5	48.18	Aug. 4	67.60	Nov. 3	55.98
11	50.98	12	48.94	11	62.82	10	55.79
18	51.05	19	50.35	18	61.91	17	55.54
25	59.87	26	51.67	25	61.51	24	52.41
Mar. 3	62.57	June 2	51.74	Sept. 8	61.45	Dec. 1	51.72
10	56.72	9	51.97	15	61.36	8	50.90
17	55.98	16	52.11	22	59.85	15	49.86
24	54.07	23	54.87	29	60.37	22	48.39
31	52.24	30	57.12	Oct. 6	60.14	29	48.25
Apr. 7	50.09	July 7	60.93				

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, 1921-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 15	29.57	Apr. 17	29.89	July 15	36.00	Oct. 16	30.41
Feb. 19	30.53	May 15	31.58	Aug. 14	30.55	Nov. 13	30.34
Mar. 14	29.28	June 17	30.46	Sept. 16	31.45	Dec. 11	30.26

6S/10-5C1. Robert Gisler. Near Huntington Beach. Drilled irrigation artesian well in 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 48.00 below lsd, Feb. 13, 1951. Records available: 1931-52.

Jan. 7	30.43	Mar. 31	27.97	July 14	34.55	Oct. 27	32.97
14	31.58	Apr. 7	28.36	Aug. 4	36.88	Nov. 3	32.30
28	29.31	14	28.71	18	37.47	10	32.22
Feb. 4	28.85	21	26.82	25	36.84	17	31.09
11	29.41	May 5	27.00	Sept. 8	37.71	24	30.06
18	32.04	12	27.45	15	37.40	Dec. 1	29.46
25	33.61	19	28.55	22	35.53	8	29.02
Mar. 3	34.73	June 2	30.70	29	34.69	15	28.77
10	32.32	9	30.42	Oct. 6	34.18	22	28.41
17	30.38	16	30.77	14	33.84	29	27.97
24	28.51	23	31.68	20	33.25		

6S/11-13G2. Surf Land & Water Co. Drilled unused artesian well in 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: 1930-52.

Jan. 2	7.37	Apr. 9	6.44	July 9	8.39	Oct. 8	8.71
9	7.60	16	6.39	16	9.18	15	8.51
17	8.20	23	6.46	23	8.95	22	8.40
23	6.40	30	6.47	30	9.41	29	8.24
30	5.19	May 7	6.62	Aug. 6	9.59	Nov. 5	8.24
Feb. 6	5.89	14	6.64	13	9.30	12	8.31
13	6.86	21	7.20	20	9.65	19	7.81
20	8.47	28	7.37	25	9.51	26	7.50
27	9.48	June 4	7.68	Sept. 3	9.36	Dec. 3	7.28
Mar. 5	9.88	11	8.09	10	9.65	10	7.55
12	6.65	18	8.01	17	9.02	17	7.37
19	5.40	25	8.12	24	9.03	24	7.47
26	5.79	July 2	8.44	Oct. 1	8.85	31	7.47
Apr. 2	6.19						

I-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: 1932-52.

Jan. 9	74.05	May 7	63.77	Aug. 6	84.67	Oct. 15	75.71
30	69.58	21	69.40	13	83.67	22	75.69
Feb. 6	68.42	28	68.72	20	80.78	29	74.66
13	67.38	June 11	72.72	Sept. 8	79.84	Nov. 5	73.97
20	67.00	18	74.05	10	78.48	12	72.82
27	67.90	July 2	78.71	17	77.86	19	69.59
Mar. 26	65.82	9	84.28	24	78.43	26	69.73
Apr. 2	64.51	16	88.89	Oct. 1	78.42	Dec. 10	67.64
9	63.49	30	84.21	8	76.72	17	64.94
16	62.41						

Riverside County

Santa Ana River Basin, San Jacinto Valley
Measurements furnished by Riverside County Flood Control and Conservation District are marked with an asterisk.

3/2W-35Q1. I. E. Facemire. Records available: 1921-52. Jan. 8, 48.10; June 2, 48.65.

4/2W-7J1. Records available: 1921-44, 1946-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8	99.83	Apr. 25	96.48	July 30	(f)	Oct. 31	(f)
Feb. 29	98.32	June 2	99.09	Aug. 19	(f)	Nov. 28	(f)
Mar. 25	93.32	30	(f)	Sept. 2	(f)	Dec. 24	(f)

f Dry.

4/3W-32E1. James Malcolm. Records available: 1929-52. June 2, 66.90; Aug. 19, 67.08; Nov. 28, 67.28.

4/4W-1L1. B. H. LeCont. Records available: 1914-52. June 2, 44.50; Aug. 19, 45.35.

5/1W-2N1. J. A. Barger. Land-surface datum is 1,584 feet above msl. Records available: 1905-52. Jan. 8, dry; June 2, dry; Aug. 19, dry; Nov. 28, dry.

5/2W-24A1. L. Wilhelm. Land-surface datum is 1,499 feet above msl. Records available: 1914-50, 1952. Jan. 8, 44.84; June 2, 48.62; Aug. 19, 51.65; Nov. 28, 43.37.

5/2W-27E2. Fred Harvey. Records available: 1930-52. June 2, 42.53; Aug. 19, 43.42; Nov. 28, 43.88.

6/3W-4A2. Menifee School. Records available: 1925-34, 1936, 1938-52. June 2, 66.55; Nov. 28, 62.20.

San Bernardino County

Mojave River Basin

3/3W-6E1. Mike Spranger. Drilled well, diameter 12 inches. Records available: 1929-32, 1935-52. May 28, 4.69; Nov. 24, dry.

3/3W-6E2. Diameter 12 inches, depth 61 feet. Records available: 1948-52. May 28, 4.49; Nov. 24, 32.05.

3/4W-12J1. Records available: 1929-32, 1935-52. May 28, 5.09; Nov. 24, dry.

3/4W-13B1. Olive. Records available: 1922-23, 1929-33, 1935-52. Nov. 24, 79.39.

4/3W-1M1. E. D. S. Pope. Depth 730 feet. Records available: 1930-33, 1935-43, 1945-52. May 28, 209.17; Dec. 4, 208.47.

4/3W-6B1. A. J. Lintner. Records available: 1931-32, 1934-52. Nov. 24, 59.47.

4/3W-6D1. Warren Smithson. Formerly A. W. Phillips. Records available: 1917, 1930-52. Nov. 24, 59.67.

4/3W-17M1. Arrowhead Reservoir & Power Co. Diameter 2 inches, depth 26 feet. Records available: 1905, 1916, 1922-23, 1930-52. May 28, 23.39; Nov. 24, dry.

4/3W-18E1. C. O. Evans. Records available: 1930-32, 1935, 1938-52. May 28, 23.10; Nov. 24, dry.

4/3-19R1. Arrowhead Reservoir & Power Co. Records available: 1905, 1907, 1930-52. May 28, 18.57; Nov. 24, 32.39.

4/3W-20L1. J. M. Allison. Records available: 1923, 1930-52. May 28, 30.91; Nov. 24, 36.98.

4/3W-30E1. A. W. Cole. Records available: 1917, 1930-32, 1934-52. May 28, 41.53.

5/3W-3D1. Dick Lewis. Domestic and irrigation well, diameter 12 inches. Records available: 1948-49, 1951-52. May 29, 75.02; Nov. 24, 76.48.

5/3W-13D1. Eva V. Case. Records available: 1948-52. May 29, 89.93; Nov. 24, 89.95.

5/3W-18F1. J. D. Humiston. Records available: 1917, 1923, 1930-33, 1935, 1937-52. Dec. 4, 112.97.

5/3W-22A1. Jack Rothwell. Records available: 1948-52. May 29, 92.09; Nov. 24, 91.87.

5/3W-24N1. Douglas. Records available: 1948-52. May 29, 92.24; Nov. 24, 92.16.

5/4W-10M1. Dug domestic well. Records available: 1930-32, 1935, 1937-52. May 29, 45.26; Nov. 25, 45.47.

5/4W-11P1. Mr. Pratt. Records available: 1931-32, 1935, 1937-52. May 29, 55.54; Nov. 25, 56.00.

5/4W-11P2. Lee Saul. Records available: 1935-52, 1935-45, 1947-52. May 29, 47.96; Dec. 4, 46.91.

5/4W-35A1. A. Sorensen. Records available: 1917, 1930-31, 1945, 1948-52. May 28, 6.77; Nov. 24, flowing.

5/4W-36N1. On Verde Ranch. Records available: 1917, 1930-45, 1947-50. No measurement made in 1952.

6/3W-28R1. Irene McCarthy. Drilled domestic and irrigation well. Records available: 1948-52. Dec. 4, 130.47.

Middle sub-basin

7/4W-30C1. Drilled irrigation well. Records available: 1930-32, 1935-52. May 29, 59.49; Nov. 25, 58.69.

8/3W-4M1. Everett Swing. Dug unused well, diameter 6 feet. Records available: 1930-33, 1939-52. May 29, 13.67; Nov. 25, 14.61.

8/4W-2Q1. Dug unused well. Records available: 1930-32, 1934-52. Nov. 25, dry.

8/4W-12Q1. Holcomb Bros. Irrigation well. Records available: 1931-32, 1935-37, 1939-41, 1943-52. Nov. 25, 11.04.

8/4W-20N1. Lord. Dug irrigation and domestic well. Records available: 1930-32, 1934-47, 1951-52. Nov. 25, 18.74.

8/4W-31D1. F. H. Merrell. Dug irrigation and domestic well, diameter 8 feet, depth 68 feet. Records available: 1930-32, 1939-52. May 29, 47.74; Nov. 25, 48.94.

8/4W-31R1. Dug and drilled irrigation well, diameter 14 inches. Records available: 1930-32, 1934-48, 1950-52. May 29, 17.86; Nov. 25, 18.12.

9/1W-10D2. R. E. Hettick. Irrigation well, diameter 12 inches, depth 132 feet. Records available: 1945-52. June 3, 8.00; Nov. 20, 10.25.

9/1W-10M1. Greystone Auto Camp. Drilled domestic well. Records available: 1930, 1932, 1935, 1938-47, 1949-52. June 3, 51.29; Nov. 20, 55.38.

9/1W-13B1. F. Ryerse. Dug and drilled irrigation well. Records available: 1925-28, 1930-32, 1935, 1938-52. June 3, 13.50; Nov. 20, 19.26.

9/2W-19B1. Sweeten. Domestic well. Records available: 1930-32, 1935, 1937-52. June 3, 69.33; Nov. 25, 69.02.

9/3W-10P1. Drilled unused irrigation well. Records available: 1930-32, 1934-52. May 30, 91.57; Nov. 26, 91.71.

9/3W-10R1. Osborn. Records available: 1930-32, 1935-49, 1951-52. May 30, 18.59; Nov. 26, 19.31.

9/3W-14D1. Bullock. Dug and Drilled irrigation well. Records available: 1930-32, 1934-52. May 30, 17.46; Nov. 26, 20.52.

9/3W-28A1. J. Slagill. Records available: 1930-36, 1938-52. May 30, 6.38; Nov. 26, 17.37.

9/3W-34R1. Nellie Storey. Dug unused well. Records available: 1930-33, 1935-36, 1938-42, 1944-45, 1947-51. No measurement made in 1952.

10/1W-31C1. Nelson. Records available: 1930-32, 1935, 1938-52. May 30, 50.61.

10/2W-19P1. Loftus. Drilled domestic well. Records available: 1930-33, 1935, 1937-45, 1947-52. May 30, 71.10; Nov. 26, 71.69.

10/2W-30N1. J. D. Rich. Records available: 1930-50, 1952. May 30, dry.

10/2W-30R1. Records available: 1952. May 30, 24.10; Nov. 26, 23.83.

10/3W-32C1. Records available: 1931-32, 1934, 1936-52. May 30, 58.90; Nov. 26, 59.16.

11/3W-28R1. S. F. Edwards. Dug irrigation well. Records available: 1930-32, 1935-40, 1944-52. May 30, 27.98; Nov. 26, 28.93.

11/3W-34F1. Dug unused irrigation well. Records available: 1930-32, 1934-52. May 30, 35.25; Nov. 26, 35.76.

8/3E-3E1. C. W. Beaverstock. Drilled well, diameter 9 inches. Records available: 1930-32, 1935-52. June 4, 6.54; Nov. 21, 9.72.

8/3E-3F1. Drilled domestic well. Records available: 1930-32, 1935-52. June 14, 22.28; Nov. 21, 23.23.

8/3E-4B1. Lyle Graham. Drilled irrigation well. Records available: 1930-32, 1935-52. June 4, 3.82; Nov. 21, 4.65.

8/3E-4B2. Lyle Graham. Dug and drilled irrigation well. Records available: 1922, 1930-32, 1935-36, 1938-51. No measurement made in 1952.

8/4E-7E1. Bodine. Irrigation well. Records available: 1919, 1922, 1930-32, 1938-48, 1950, 1952. June 2, 23.33; Nov. 21, 23.89.

8/4E-9C1. Records available: 1947-52. June 4, dry, Nov. 21, 0.85.

8/4E-12L1. Mojave Camp Service Station. Records available: 1930, 1932, 1935-45, 1947-52. June 4, 30.83; Nov. 21, 30.63.

9/1E-12D1. Records available: 1930, 1932, 1934-35, 1937-45, 1947-52. June 3, 50.40; Nov. 20, .51.55.

9/1E-13E1. Records available: 1925-28, 1930-52. June 5, 72.03; Nov. 26, 72.84.

9/1E-13E2. Records available: 1925-27, 1930-33, 1935-52. June 5, 73.00; Nov. 26, 73.70.

9/1E-18E1. Borland. Records available: 1925-28, 1930-32, 1934-50, 1952. June 3, 17.50.

9/1E-18L1. Records available: 1952. Nov. 20, 20.71.

9/1E-20N1. B. Lamantain. Records available: 1952. Nov. 20, 82.40.

9/1E-24D1. Records available: 1930, 1932-52. June 5, 77.02. Measurement discontinued.

9/2E-3A1. Bruce McCormick. Records available: 1919, 1922, 1930-35, 1937-52. June 3, dry; Nov. 20, dry.

9/2E-3A2. Bruce McCormick. Records available: 1931-35, 1937-49, 1951-52. June 3, 25.00; Nov. 20, 27.53.

9/2E-4D1. Records available: 1930-32, 1934-35, 1937-52. June 3, 25.30; Nov. 20, 26.08.

9/2E-8J1. Annie Escholtz. Records available: 1919, 1925, 1928, 1930-33, 1935-45, 1947-52. June 5, 45.01; Nov. 21, 46.00.

9/2E-12N1. Hunter. Records available: 1919, 1924-27, 1930-35, 1937-52. June 4, 3.68; Nov. 21, 10.16.

9/2E-14N1. Scobel & Haimut. Records available: 1919, 1922, 1930, 1932-33, 1935, 1938-48. No measurement made in 1952.

9/2E-14N2. Scobel and Haimut. Records available: 1925, 1927-28, 1930-35, 1937-52. June 4, 23.20; Nov. 21, 23.39.

9/2E-14N3. Records available: 1924-28, 1930-33, 1935, 1937-52. June 4, 21.76; Nov. 21, 22.49.

9/2E-18F1. Records available: 1924-28, 1930-40, 1942-43, 1945-52. June 5, 61.11; Nov. 21, 61.73.

9/2E-20Q1. Daggett Air Port. Records available: 1945-48, 1952. June 5, 52.03.

9/3E-3D1. Records available: 1919, 1926, 1930-35, 1937-52. June 3, 44.68; Nov. 20, 41.62.

9/3E-10D1. Bozarth. Records available: 1945-49, 1952. June 3, 38.27; Nov. 20, 38.44.

9/3E-12E1. B. Nicholas. Records available: 1922, 1930-33, 1935, 1937-44, 1946-52. June 3, 29.29; Nov. 20, 29.85.

9/3E-19E1. Records available: 1919, 1922, 1930-32, 1935, 1938-48, 1950, 1952. June 4, 8.05; Nov. 21, 8.83.

9/3E-19P1. Frey. Records available: 1930-43, 1951-52. June 4, 2.97; Nov. 21, 3.17.

9/3E-32A1. Records available: 1952. June 4, 5.25; Nov. 21, 6.74.

9/3E-34D1. Clinkenbeard. Records available: 1919, 1922, 1930-32, 1934-43, 1945, 1947-52. June 4, 31.38; Nov. 21, 31.80.

9/4E-20L1. Fred L. Shepherd. Records available: 1952. June 3, 9.49; Nov. 20, 9.67.

9/4E-31K1. A. M. Monroe. Records available: 1930-32, 1935-52. June 4, 13.75; Nov. 21, 13.99.

10/2E-32P1. Yermo Mutual Water Co. Records available: 1919-20, 1922, 1924, 1929-52. June 3, 33.61.

10/3E-34E2. G. M. Bond. Records available: 1947-52. June 3, 9.60; Nov. 20, dry.

Santa Ana River Basin, San Bernardino Area

1N4W-36F1. George M. Cooley Estate. Records available: 1900, 1904, 1906, 1914-52. June 10, 79.03; Aug. 20, dry; Nov. 28, dry.

1S/3W-3N1. R. C. Gerber. Records available: 1920-52. June 10, 139.45; Aug. 20, 143.19; Nov. 28, 149.05.

1S/3W-16L1. S. Ronzone. Records available: 1921-33, 1940-50, 1952. June 10, dry; Aug. 20, dry; Nov. 28, dry.

1S/3W-17C1. Williams. Records available: 1892-94, 1896, 1898-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	72.33	Apr. 5	56.92	July 5	46.58	Oct. 4	63.33
12	71.58	12	54.83	12	48.67	11	64.25
19	70.42	19	51.50	19	50.33	18	65.92
26	68.00	26	45.92	26	52.67	25	66.16
Feb. 2	64.83	May 3	38.83	Aug. 2	54.16	Nov. 8	66.50
9	62.50	10	34.83	9	55.33	15	67.00
16	60.75	17	34.08	16	56.42	22	67.16
23	60.08	24	36.00	23	57.50	29	66.92
Mar. 1	59.50	31	36.42	30	58.83	Dec. 6	66.58
8	59.66	June 7	38.42	Sept. 6	60.00	13	66.25
15	59.75	14	40.42	13	60.92	20	65.68
22	59.25	21	42.33	20	61.83	27	65.25
29	58.25	28	44.50	27	62.58		

1S/3W-20B1. Emmet Martin. Records available: 1900, 1904, 1906-07, 1909, 1912, 1914-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	74.95	Apr. 24	73.19	Aug. 20	75.02	Oct. 31	76.15
Feb. 1	72.84	June 10	73.41	Sept. 2	75.28	Nov. 28	74.98
29	73.96	30	73.70	Oct. 1	75.71	Dec. 31	75.77
Mar. 25	73.55						

1S/3W-28E1. George Hinkley. Records available: 1900, 1904, 1906, 1909, 1912, 1914-48, 1950-52. June 10, dry; Aug. 20, dry; Nov. 28, 74.98.

1S/3W-32C1. William H. Martin. Records available: 1900, 1906, 1909, 1912, 1914-52. June 10, 81.91; Aug. 20, 83.91; Nov. 28, 83.67.

1S/4W-4J1. W. J. Walsh. Records available: 1915-52. Aug. 20, dry; Nov. 28, dry.

San Diego County

San Luis Rey River Basin

10/3W-1. San Luis Rey Ranch. Records available: 1923-34, 1937-52. Jan. 11, 13.31; Apr. 21, 6.19; Nov. 17, dry.

10/3W-1a. San Luis Rey Ranch. Records available: 1937-52. Jan. 11, 8.63; Apr. 21, 7.98; Nov. 17, 7.69.

10/3W-1b. San Luis Rey Ranch. Records available: 1937-52. Jan. 11, 7.50; Apr. 21, 6.84; Nov. 17, 7.69.

10/3W-1c. Fallbrook Public Utility District. Records available: 1939-52. Jan. 11, 18.90; Apr. 21, 7.20; Nov. 17, 16.32.

10/3W-15. Gird Ranch. Records available: 1923-34, 1937-52. Jan. 11, dry; Apr. 21, 8.02; Nov. 17, 15.9.

10/3W-20P3. Bonsall School. Records available: 1920-24, 1937-52. Jan. 11, 13.79; Apr. 21, 8.89; Nov. 17, 12.99.

10/3W-29C2. F. M. Sickler. Domestic well, diameter 12 inches, depth 48 feet. Records available: 1948-52. Jan. 11, 12.83; Apr. 21, 7.97; Nov. 17, 11.81.

10/3W-30. Fallbrook Public Utility District. Records available: 1939-52. Jan. 11, 18.02; Apr. 21, 11.81; Nov. 17, 14.58.

11-4W-9F1. City of Oceanside. On Williams Ranch. Records available: 1940-52.

Jan. 21	46.02	Apr. 7	39.35	July 7	41.02	Oct. 6	44.85
Feb. 11	45.43	May 5	49.10	Aug. 11	43.35	Nov. 17	45.43
Mar. 10	45.27	June 18	40.27	Sept. 9	44.35	Dec. 8	44.85

11/4W-18. Carlsbad Mutual Water Co. Records available: 1939-52. Jan. 7, 38.99; Apr. 7, 37.20; July 7, 55.05; Oct. 6, 52.19.

11/5W-13a. Records available: 1937-52.

Jan. 25	27.37	Apr. 7	22.00	July 7	31.42	Oct. 6	31.29
Feb. 11	26.87	May 5	24.58	Aug. 11	35.58	Nov. 17	28.58
Mar. 10	25.64	June 18	32.77	Sept. 8	36.65	Dec. 8	28.92

11/5W-13b. Records available: 1937-52.

Jan. 25	27.92	Apr. 7	24.00	July 7	30.08	Oct. 6	32.42
Feb. 11	26.92	May 5	22.83	Aug. 11	33.21	Nov. 17	31.79
Mar. 10	26.92	June 18	28.29	Sept. 9	34.04	Dec. 8	29.50

11/5W-13c. Records available: 1937-52.

Jan. 21	24.08	Apr. 7	18.33	July 7	25.75	Oct. 6	26.92
Feb. 11	24.29	May 5	19.33	Aug. 11	28.67	Nov. 17	25.92
Mar. 10	23.25	June 18	25.33	Sept. 9	29.58	Dec. 8	25.50

11/5W-15. Records available: 1939-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 21	18.92	Apr. 7	12.17	July 7	18.25	Oct. 6	19.33
Feb. 11	18.35	May 5	13.00	Aug. 11	20.67	Nov. 17	18.66
Mar. 10	17.25	June 18	18.08	Sept. 9	21.25	Dec. 8	18.21

San Dieguito River Basin

12/1W-31H2. City of San Diego. Records available: 1929-52. Jan. 7, 12.37; Mar. 27, 6.65; Nov. 2, 10.59.

12/1W-33. H. G. Fenton. Records available: 1926-52. Jan. 7, 18.16; Mar. 27, 14.46; Nov. 2, 16.49.

12/1W-33a. F. B. Gierman. Records available: 1943-52. Jan. 7, 4.68; Mar. 27, 2.54; Nov. 2, 6.43.

12/1W-35K1. San Pasqual Academy. Diameter 8 inches, depth 36 feet. Records available: 1945-52. Jan. 7, 23.74; Mar. 27, 9.55.

12/1W-36D1. Jorgensen. Diameter 16 inches, depth 53 feet. Records available: 1945-52. Jan. 7, 17.99; Mar. 7, 6.94; Nov. 2, 17.49.

San Diego River Basin

14/1W-36R1. City of San Diego. Records available: 1948-52. Jan. 8, 41.58; Apr. 14, 29.67; Nov. 26, 29.20.

15/1E-2R2. San Diego County. Records available: 1949-52. Jan. 8, dry; Apr. 14, 41.73; Nov. 26, 53.72.

15/1E-7. San Diego Products Co. Records available: 1932-52. Jan. 8, dry; Apr. 14, dry; Nov. 26, dry.

15/1E-10. Foster Dairy. Records available: 1948-52. Jan. 8, 38.99; Apr. 14, 37.37; Nov. 26, 36.28.

15/1E-16C1. Pratt test well. Records available: 1937-52. Jan. 8, dry; Apr. 14, dry; Nov. 26, dry.

15/1E-17a. On Dr. Irey Ranch. Records available: 1927-33, 1935, 1937-52. Jan. 8, dry; Apr. 14, dry; Nov. 26, dry.

15/1E-17b. In County Yard. Records available: 1937-52. Jan. 8, dry; Apr. 14, dry; Nov. 26, dry.

15/1E-17B1. On Truttman Ranch. Records available: 1937-52. Jan. 8, 39.85; Apr. 14, 38.22; Nov. 26, 36.99.

19/1E-17H6. Irrigation District Well No. 6. Records available: 1929-32, 1934-52. Jan. 8, 40.18; Apr. 14, 39.36; Nov. 26, 37.45.

15/1E-19D1. Davidson & Brown. Records available: 1937-52. Jan. 8, dry; Apr. 14, dry; Nov. 25, dry.

15/1E-20B1. De Matteo. Records available: 1948-52. Jan. 8, 37.55; Apr. 14, 17.88.

15/1W-13N2. Riverview well No. 3. Records available: 1930, 1934-52. Jan. 8, dry; Apr. 14, 19.74; Nov. 25, dry.

15/1W-13R5. Mr. Levi. Records available: 1927-51, No measurement made in 1952.

15/1W-23H3. City of San Diego. Records available: 1946-52. Jan. 8, dry; Apr. 14, 16.56.

15/1W-24a. E. G. Squires. Domestic well, diameter 6 inches, depth 23 feet. Records available: 1945-50. No measurement made in 1952.

15/1W-24b. E. G. Squires. Depth 46 feet. Records available: 1950-52. Jan. 8, 33.66; Apr. 14, 26.79; Nov. 25, 33.49.

15/1W-24D7. Riverview well 2. Riverview. Records available: 1937-52. Jan. 8, 27.55; Apr. 14, 17.58; Nov. 25, 28.50.

15/1W-27. San Diego County Farm. Records available: 1927-52. Jan. 8, 21.58; Apr. 14, 17.69; Nov. 25, 21.20.

15/1W-28. Dr. Good. Diameter 10 inches, depth 44 feet. Records available: 1915, 1919-52. Jan. 8, 19.98; Apr. 14, 15.66; Nov. 25, 18.32.

15/2W-16. Tacoma Cabinet Shop. Near Grantville. Records available: 1921-50, 1952. Jan. 8, 18.91; Apr. 14, 12.78.

16/2W-1b. Records available: 1950, 1952. Jan. 8, 17.11; Apr. 14, 12.78.

16/3W-22. H. Tatreau. Records available: 1922-52. Jan. 8, dry; Apr. 14, 10.33; Nov. 25, 15.55.

16/3W-23. S. H. McIntosh. Records available: 1927-52. Jan. 8, 10.42; Apr. 14, 7.31; Nov. 25, 10.89.

16/3W-24. R. I. Officer. Records available: 1925-33, 1937-52. Jan. 8, 16.50; Apr. 14, 10.86; Nov. 25, 14.19.

Sweetwater River Basin

17/1W-19a. California Water & Telephone Co. L. C. Kincaid (former). Records available: 1943-52. Jan. 10, 23.87; Mar. 28, 7.79; Nov. 13, 10.33.

Otay River Basin

18/2W-22. G. W. St. Clair. Records available: 1916-52. Jan. 10, 30.07; Mar. 28, 27.84; Nov. 13, 38.32.

Tia Juana River Basin

18/2W-33. Hewitt Bros. Records available: 1927-52. Jan. 10, 20.91; Mar. 28, 17.44; Nov. 13, 17.98.

18/2W-34. Hill J. Fajerany. Records available: 1927-52. Jan. 10, 22.55; Mar. 28, 16.66; Nov. 13, 20.03.

18/2W-34a. C. Iguchi. Records available: 1927-52. Jan. 10, 17.80; Mar. 28, 11.33; Nov. 13, 16.81.

19/2W-4. At Nestor Bridge. Records available: 1933-52. Jan. 10, 20.24; Mar. 28, 8.80; Nov. 13, 16.68.

San Joaquin County

Mokelumne River Basin
Records furnished by East Bay Municipal Utility District

3N/6-3K11. F. B. Mills Estate. Near 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 21.55 below lsd, Apr. 1, 1948. Records available: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	16.02	Apr. 1	13.84	July 1	14.89	Oct. 1	14.44
Feb. 1	14.81	May 1	13.49	Aug. 1	a25.75	Nov. 3	15.02
Mar. 3	14.45	June 2	a20.48	Sept. 2	15.03	Dec. 1	15.26

a Pumping.

3N/6-17D11. A. Delu. 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 21.79 below lsd, Sept. 1, 1950. Records available: 1949-52.

Jan. 2	14.42	Apr. 1	10.22	July 1	12.54	Oct. 1	16.80
Feb. 1	10.77	May 1	7.46	Aug. 1	16.77	Nov. 3	16.01
Mar. 3	9.47	June 2	9.51	Sept. 2	18.20	Dec. 1	15.10

3N/6-25R11. E. E. Morse Estate. 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 28.77 below lsd, Jan. 2, 1952; lowest 36.14 below lsd, Oct. 4, 1950. Records available: 1948-52. Jan. 2, 28.77; Oct. 6, 30.18.

3N/6-36R2. Leland W. Bunch. 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, 1935-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	25.74	Apr. 1	20.90	July 1	24.72	Oct. 6	26.23
Feb. 1	23.50	May 1	20.44	Aug. 1	26.18	Nov. 3	25.53
Mar. 3	22.24	June 2	25.19	Sept. 2	26.91	Dec. 1	24.15

3N/7-3C1. Jacob Knoll. 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 39.80 below lsd, Feb. 1, 1950. Records available: 1935-52.

Jan. 3	38.40	Apr. 1	36.38	July 1	31.90	Oct. 8	35.84
Feb. 1	37.70	May 1	35.00	Aug. 1	33.16	Nov. 3	36.55
Mar. 3	37.08	June 2	31.95	Sept. 2	34.66	Dec. 1	37.09

3N/7-6M8. R. E. and Ruth F. Coker. Cherokee Lane and Southern Pacific Railroad 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 30.78 below lsd, Apr. 1, 1948. Records available: 1935-52.

Jan. 2	26.28	Apr. 1	23.34	July 1	23.32	Oct. 6	24.95
Feb. 1	24.49	May 1	24.61	Aug. 1	24.22	Nov. 3	25.42
Mar. 3	23.82	June 2	23.55	Sept. 2	24.61	Dec. 1	25.25

3N/7-7M1. J. and Rachel K. Goetken. 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: 1935-52.

Jan. 2	33.81	Apr. 1	31.80	July 1	34.83	Oct. 6	34.29
Feb. 1	32.68	May 1	35.18	Aug. 1	35.33	Nov. 3	33.44
Mar. 3	31.65	June 2	34.80	Sept. 2	35.04	Dec. 1	32.72

3N/7-10L3. Edward Preszler. 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 52.39 below lsd, Sept. 2, 1947. Records available: 1935-52.

Jan. 4	48.26	Apr. 1	47.16	July 1	44.97	Oct. 7	47.65
Feb. 1	48.10	May 1	c46.84	Aug. 1	44.12	Nov. 3	48.12
Mar. 3	47.86	June 2	47.54	Sept. 2	45.41	Dec. 1	48.14

c Nearby well being pumped.

3N/7-10L4. Edward Preszler. Drilled observation water-table well in Victor, Arroyo Seco and Laguna formations, diameter 12 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 60.49 below lsd, May 1, 1950. Records available: 1935-52.

Jan. 4	48.11	Apr. 1	45.98	July 1	54.20	Oct. 7	50.96
Feb. 1	47.11	May 1	46.22	Aug. 1	55.44	Nov. 3	49.47
Mar. 3	46.65	June 2	b52.47	Sept. 2	54.39	Dec. 1	47.54

b Pumped recently.

3N/7-15P11. Raymond Mettler. Drilled domestic water-table well, largely in Victor formation, but possibly penetrating into underlying Arroyo Seco and Laguna formations, diameter 6 inches, reported depth 80 feet. Land-surface datum is 66.90 feet above msl. Highest water level 47.46 below lsd, Jan 13. 1948; lowest 64.19 below lsd, Aug. 1, 1950. Records available: 1948-52. Measurement discontinued.

Jan. 4	52.82	Mar. 11	50.35	June 2	54.51	Aug. 1	59.25
Feb. 1	51.44	Apr. 1	49.52	July 1	57.47	Sept. 2	60.45
Mar. 3	50.51	May 1	49.61				

3N/7-18N12. Joe Garnero. 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 30.14 below lsd, Feb. 3, 1947; lowest 44.40 below lsd, Aug. 1, 1950. Records available: 1946-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 2	33.23	Apr. 1	30.58	July 1	37.02	Oct. 6	32.39
Feb. 1	32.14	May 1	31.87	Aug. 1	35.72	Nov. 3	31.74
Mar. 3	31.49	June 2	37.26	Sept. 2	34.62	Dec. 1	30.80

3N/7-22C11. John Nietschke. 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 53.82 below lsd, Dec. 1, 1952; lowest 56.57 below lsd, Oct. 22, 1952. Records available: 1952. Oct. 22, 56.57; Nov. 3, 55.98; Dec. 1, 53.82.

3N/7-27F3. John F. Heitzmann. Drilled observation water-table well in Victor formation, diameter 8 inches, depth 46 feet, deepened in May 1949 to 91 feet, cased to 62.5. Land-surface datum is 59.42 feet above msl. Highest water level 26.12 below lsd, Mar. 31, 1943; lowest 59.18 below lsd, Sept. 2, 1952. Records available: 1935-52.

Jan. 3	51.28	Apr. 1	47.20	July 1	54.05	Oct. 7	57.43
Feb. 1	50.00	May 1	46.82	Aug. 1	57.39	Nov. 3	55.55
Mar. 3	48.77	June 2	52.41	Sept. 2	59.18	Dec. 1	52.16

4N/6-12R11. A. T. Carlson. 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 52.50 below lsd, Aug. 1, 1950, Aug. 31, 1951. Records available: 1948-52.

Jan. 2	43.05	Apr. 1	39.60	July 1	a51.94	Oct. 6	45.65
Feb. 1	41.82	May 1	38.84	Aug. 1	48.55	Nov. 3	a51.99
Mar. 3	40.74	June 2	a50.10	Sept. 2	49.89	Dec. 1	42.74

a Pumping.

4N/6-13J11. Dorothy Woodworth. 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: 1948-52.

Jan. 2	42.97	Apr. 1	39.35	July 1	45.50	Oct. 6	44.35
Feb. 1	41.61	May 1	38.53	Aug. 1	48.10	Nov. 3	43.13
Mar. 3	40.62	June 2	40.83	Sept. 2	46.67	Dec. 1	41.75

4N/6-34R1. E. M. Smith. Drilled unused water-table well in Victor formation, diameter 10 inches, depth reported 120 feet in 1926-29, reported 34 feet in 1935, and 18.5 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, 1935-52.

Jan. 2	14.69	Apr. 1	12.90	July 1	10.92	Oct. 1	11.44
Feb. 1	13.47	May 1	10.60	Aug. 1	12.08	Nov. 3	11.60
Mar. 3	13.54	June 2	10.52	Sept. 2	11.66	Dec. 1	13.31

4N/6-36D1. D. D. Smith and S. H. and I. Zimmerman. 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, 1935-52.

Jan. 2	22.84	Apr. 1	20.22	July 1	21.96	Oct. 2	20.71
Feb. 1	21.71	May 1	20.07	Aug. 1	24.14	Nov. 3	20.96
Mar. 3	21.24	June 2	20.96	Sept. 2	21.11	Dec. 1	20.96

4N/7-15B3. Robert L. Carter. Drilled observation water-table well in Victor formation, diameter 8 inches, depth 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 67.48 below lsd, Nov. 30, 1951. Records available: 1935-52.

Jan. 4	63.10	Apr. 1	59.03	July 1	62.28	Oct. 9	66.05
Feb. 1	60.38	May 1	58.86	Aug. 1	64.55	Nov. 3	65.32
Mar. 3	60.75	June 2	60.39	Sept. 2	66.50	Dec. 1	63.90

4N/7-22Q4. Adolphus Eddlemon. 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. Records available: 1935-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 4	47.75	Apr. 1	45.48	July 1	47.92	Oct. 9	48.46
Feb. 1	46.93	May 1	44.88	Aug. 1	48.70	Nov. 3	47.90
Mar. 3	46.30	June 2	46.70	Sept. 2	49.34	Dec. 1	47.22

4N/7-22Q5. Adolphus Eddlemon. 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 to 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 60.06 below lsd, July 3, 1950. Records available: 1935-52.

Jan. 4	48.18	Apr. 1	45.54	July 1	55.65	Oct. 9	50.44
Feb. 1	47.14	May 1	45.59	Aug. 1	56.30	Nov. 3	49.45
Mar. 3	46.43	June 2	54.16	Sept. 2	53.64	Dec. 1	48.02

4N/7-27P1. Frank H. and Leonard W. Buck. 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 37.43 below lsd, Sept. 7, 1949. Records available: 1935-52.

Jan. 4	34.42	Apr. 1	31.50	July 1	28.41	Oct. 9	34.88
Feb. 1	32.28	May 1	28.68	Aug. 1	31.34	Nov. 3	35.08
Mar. 3	32.35	June 2	27.01	Sept. 2	34.19	Dec. 1	34.97

4N/7-30E4. Charles Weber. 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 43.95 below lsd, Sept. 1, 1950. Records available: 1941-52.

Jan. 2	34.23	Apr. 1	31.74	July 1	36.56	Oct. 6	33.87
Feb. 1	33.42	May 1	32.28	Aug. 1	37.25	Nov. 3	33.30
Mar. 3	32.60	June 2	34.86	Sept. 2	36.29	Dec. 1	32.39

4N/7-31M3. Charles H. Woest. 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: 1935-52.

Jan. 2	25.77	Apr. 1	22.46	July 1	21.00	Oct. 6	24.34
Feb. 1	24.84	May 1	23.73	Aug. 1	24.60	Nov. 3	25.40
Mar. 3	24.25	June 2	20.24	Sept. 2	23.27	Dec. 1	24.82

4N/7-31N5. Jacob Goehring. 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: 1935-52.

Jan. 2	10.66	Apr. 1	8.28	July 1	4.75	Oct. 6	8.37
Feb. 1	9.30	May 1	.84	Aug. 1	6.76	Nov. 3	8.84
Mar. 3	9.39	June 2	1.87	Sept. 2	7.68	Dec. 1	10.14

4N/7-34F11. John J. Schmiedt. 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 14.25 below lsd, Nov. 21, 1952; lowest 14.40 below lsd, Nov. 18, 1952. Records available: 1952. Nov. 18, 14.40; Nov. 21, 14.25; Dec. 1, 14.37.

4N/7-34G1. John J. Schmiedt. Drilled observation water-table well in alluvium, diameter 8 inches, depth 30 feet, cased to 30, perforations 20-30. Land-surface datum is 57.50 feet above msl. Highest water level 2.22 below lsd, June 2, 1941; lowest 12.39 below lsd, Mar. 1, 1948. Records available: 1935-52. Jan. 4, 8.24; Feb. 1, 5.52; Mar. 3, 6.24; Apr. 1, 5.26; July 1, 4.04; Aug. 1, dry at 4.72. Measurement discontinued.

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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	108.79	May 29	80.79	July 31	88.50	Nov. 28	92.53
Feb. 26	94.32	June 27	82.40	Oct. 29	92.52	Dec. 30	90.12
Apr. 28	83.69						

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: 1941-52.

Jan. 30	81.10	Apr. 28	67.71	July 31	70.53	Oct. 29	68.89
Feb. 26	75.76	May 29	59.84	Aug. 28	70.27	Nov. 28	68.20
Mar. 31	70.40	June 27	63.44	Sept. 30	72.37	Dec. 30	63.04

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: 1949-52.

Jan. 30, 133.57; May 29, 106.73; June 27, 117.59; July 31, 121.66; Sept. 30, 122.14; Oct. 29, 124.47.

4/25-20Q2. J. B. Romero. Drilled unused artesian well in alluvium, diameter 10 inches, reported depth 250 feet, measured depth 188. Land-surface datum is about 41 feet above msl. Highest water level 19.34 below lsd, Apr. 30, 1942; lowest 85.72 below lsd, Sept. 30, 1949. Records available: 1941-52. Jan. 30, 69.43; Feb. 26, 66.51. Measurement discontinued.

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: 1941-52.

Jan. 30	124.70	Apr. 28	117.69	July 31	115.24	Oct. 29	116.58
Feb. 26	122.92	May 29	116.38	Aug. 28	115.08	Nov. 28	116.41
Mar. 31	119.80	June 27	116.05	Sept. 30	116.12	Dec. 30	115.93

5/25-26A1. 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: 1946-52.

Jan. 30	345.23	Apr. 28	316.75	July 31	344.73	Oct. 29	345.07
Feb. 26	341.06	May 29	322.76	Aug. 28	339.20	Dec. 30	e329.00
Mar. 31	327.82	June 27	c328.47	Sept. 30	347.27		

c Nearby well being pumped.
e Estimated.

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: 1946-52.

Jan. 30	348.06	Apr. 28	326.46	July 31	321.66	Oct. 27	327.02
Feb. 26	341.42	May 29	315.49	Aug. 28	c323.14	Dec. 30	314.10
Mar. 31	332.52	June 27	c319.64	Sept. 30	c325.87		

c 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: 1941-52

Jan. 30	165.02	Apr. 28	153.20	July 31	152.06	Oct. 29	153.42
Feb. 26	161.58	May 29	153.04	Aug. 28	152.10	Nov. 28	153.86
Mar. 31	157.87	June 27	153.04	Sept. 30	152.86	Dec. 30	153.33

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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	169.20	Mar. 31	160.49	May 29	154.10	Nov. 28	165.20
Feb. 26	164.96	Apr. 28	156.74	Aug. 28	167.93	Dec. 30	161.24

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 122.85 below lsd, Nov. 7, 1949. Records available: 1919, 1930, 1937-38, 1940-52.

Jan. 30	122.27	Mar. 31	115.80	May 29	107.11	Nov. 28	116.68
Feb. 25	119.10	Apr. 28	111.41	Oct. 29	118.94	Dec. 30	112.74

4/25-28M1. Mrs. A. Baylor. Drilled unused artesian well in alluvium, diameter 2 inches, depth 152 feet (present depth 96, casing collapsed). 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: 1941-52.

Jan. 30	83.08	Apr. 28	73.15	July 31	87.22	Oct. 29	82.43
Feb. 25	80.19	May 29	69.45	Aug. 28	89.87	Nov. 28	78.03
Mar. 31	77.16	June 27	83.76	Sept. 30	87.18	Dec. 30	73.96

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, 1941-52.

Jan. 30	44.11	Apr. 28	27.35	July 31	35.40	Oct. 29	34.04
Feb. 26	40.09	May 29	23.21	Aug. 28	36.87	Nov. 28	31.03
Mar. 31	33.08	June 27	28.66	Sept. 30	35.35	Dec. 30	24.54

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 15.58 below lsd, May 29, 1952; lowest 51.24 below lsd, Sept. 25, 1951. Records available: 1950-52.

Jan. 30	33.27	May 29	15.58	Aug. 28	31.83	Nov. 28	22.60
Feb. 26	29.88	June 27	24.67	Sept. 30	30.33	Dec. 30	17.56
Apr. 28	18.72	July 31	30.12	Oct. 29	27.12		

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: 1941-52.

Jan. 30	46.11	Apr. 28	40.99	July 31	58.16	Oct. 29	62.61
Feb. 26	43.89	May 29	42.21	Aug. 28	62.22	Nov. 28	48.20
Mar. 31	42.42	June 27	57.73	Sept. 30	55.40	Dec. 30	43.81

5/25-30D1. 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, 1941-52.

Jan. 30	25.07	June 27	31.25	Sept. 30	18.74	Nov. 28	14.37
Feb. 26	20.81	July 31	16.70	Oct. 29	17.97	Dec. 30	10.68
May 29	16.93	Aug. 28	18.17				

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 15.28 below lsd, May 29, 1952; lowest 41.39 below lsd, Sept. 25, 1951. Records available: 1949-52.

Jan. 30	31.61	Apr. 28	18.99	July 31	23.37	Oct. 29	25.58
Feb. 26	28.25	May 29	15.28	Aug. 28	25.26	Nov. 28	21.93
Mar. 31	23.18	June 27	18.98	Sept. 30	26.56	Dec. 30	17.79

4/25-34F2. 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 136.59 below lsd, Nov. 28, 1952. Records available: 1949-52.

Jan. 30	133.80	Apr. 28	135.69	July 31	136.09	Oct. 29	136.56
Feb. 26	135.44	May 29	135.46	Aug. 28	135.97	Nov. 28	136.59
Mar. 31	135.62	June 27	135.84	Sept. 30	135.98	Dec. 30	135.55

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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	97.22	Apr. 28	65.02	July 31	65.90	Oct. 29	c86.73
Feb. 26	77.89	May 29	55.61	Aug. 28	69.66	Nov. 28	79.97
Mar. 31	70.64	June 27	57.45	Sept. 30	90.63	Dec. 29	74.64

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, 1947-52.

Jan. 30	54.22	Apr. 28	51.28	Sept. 30	69.55	Nov. 28	50.85
Feb. 26	56.12	May 29	57.30	Oct. 29	56.57	Dec. 30	49.70
Mar. 31	51.42						

4/26-24F2. A. F. Thurmond. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 200 feet, perforations 20-148. Land-surface datum is about 11 feet above msl. Highest water level 2.13 below lsd, Mar. 19, 1942; lowest 33.97 below lsd, Sept. 25, 1951. Records available: 1938, 1941-52. Jan. 30, 14.99; Feb. 26, 13.43; Mar. 31, 10.44; Apr. 28, 8.63. Measurement discontinued.

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 105.26 below lsd, July 7, 1949. Records available: 1941-49, 1952. Jan. 31, 103.07; Feb. 26, 103.29.

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: 1948-52

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	83.75	78.84	74.53	70.70	67.52	75.74	73.57	73.94	78.51	76.00	68.83	66.71
2	83.64	78.71	74.53	70.53	67.41	75.90	73.33	74.13	78.61	75.72	68.68	66.65
3	83.47	78.59	74.55	70.40	67.41	76.07	73.06	74.29	78.69	75.40	68.56	66.55
4	83.25	78.38	74.46	70.32	67.42	76.30	72.75	74.47	.....	75.06	68.42	66.38
5	83.05	78.21	74.36	70.22	67.59	76.43	72.45	74.70	78.83	74.75	68.41	66.16
6	82.74	78.00	74.09	70.15	67.87	.....	72.19	74.96	78.91	74.44	68.46	.....
7	82.71	77.78	73.98	69.97	68.23	76.62	71.99	75.16	78.98	74.10	68.57	.....
8	82.67	77.70	73.86	69.91	68.73	76.76	71.75	75.36	79.01	73.80	68.84	.....
9	82.51	77.61	73.77	69.71	69.17	76.74	71.54	75.60	79.07	63.51	69.12	.....
10	82.26	77.50	73.60	69.51	69.61	76.46	71.31	75.79	79.07	73.31	69.38	.....
11	.....	77.37	73.56	69.45	69.98	76.34	71.24	75.91	79.03	73.07	69.58	.....
12	.....	77.20	73.45	69.42	70.38	76.33	71.30	76.08	78.90	72.77	69.72	.....
13	.....	77.05	73.30	69.33	70.82	.....	71.53	76.27	78.78	72.51	69.87	65.15
14	.....	76.93	73.07	69.20	71.21	76.51	71.80	76.46	78.70	72.24	69.93	64.99
15	.....	76.74	72.77	69.07	71.55	76.67	72.05	76.68	78.57	71.98	69.68	64.88
16	.....	76.51	72.67	68.94	71.90	76.78	72.37	76.82	78.48	71.77	69.54	64.68
17	.....	76.40	72.65	68.86	72.26	76.91	72.69	76.95	78.41	71.63	69.37	64.57
18	.....	76.32	72.56	68.78	72.63	77.08	72.99	77.05	78.33	71.47	69.20	64.57
19	80.64	76.18	72.44	68.59	72.93	77.24	73.26	77.17	78.22	71.16	68.97	64.53
20	80.47	75.99	72.34	68.52	73.22	77.24	73.55	77.30	78.01	70.94	68.69	64.41
21	80.34	75.88	72.27	68.48	73.43	76.93	73.44	77.45	77.64	70.77	68.53	64.46
22	80.19	75.78	72.17	68.42	73.72	76.60	73.55	77.58	77.26	70.59	68.32	64.25
23	80.02	75.64	71.95	68.30	73.98	76.21	73.35	77.67	77.03	70.39	68.17	64.19
24	79.80	75.49	71.67	68.23	74.25	75.81	73.07	77.78	76.95	70.19	68.01	64.13
25	79.76	75.31	71.57	68.12	74.49	75.46	72.92	77.87	76.86	70.06	67.87	64.08
26	79.70	75.09	71.40	67.97	74.67	75.17	72.92	77.98	76.78	69.88	67.67	63.97
27	79.60	75.02	71.25	67.84	74.90	74.80	72.99	78.10	76.71	69.70	67.49	63.66
28	79.40	74.90	.....	67.82	75.12	74.55	73.08	78.18	76.66	69.54	67.32	.....
29	79.23	74.65	.....	67.80	75.28	74.20	73.25	78.29	76.60	69.33	67.03	.....
30	79.08		70.94	67.68	75.43	73.85	73.45	78.37	76.34	69.19	66.97	.....
31	78.98		70.84		75.58		73.70	78.43		69.00		.....

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 14.71 below lsd, May 6, 1945; lowest 61.34 below lsd, Nov. 26, 1951. Records available: 1943-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	23.27	Apr. 28	18.45	July 31	24.35	Oct. 30	c37.99
Feb. 26	21.01	May 29	16.12	Aug. 28	28.57	Nov. 28	38.04
Mar. 31	20.98	June 26	18.86	Sept. 30	35.11	Dec. 30	20.83

c Nearby well being pumped.

4/28-3E2. 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: 1941-52.

Jan. 30	14.25	Apr. 28	11.56	July 31	13.58	Oct. 29	14.10
Feb. 26	12.70	May 29	11.54	Aug. 28	c18.22	Nov. 28	12.48
Mar. 31	11.79	June 26	c22.57	Sept. 30	c14.89	Dec. 31	12.10

c Nearby well being pumped.

4/28-3M3. L. W. Fowler. Cathedral Oaks Road 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: 1947-52.

Jan. 30	131.79	Apr. 28	127.69	Aug. 28	125.85	Nov. 28	125.12
Feb. 26	130.65	May 29	127.89	Sept. 30	125.04	Dec. 31	123.80
Mar. 31	129.14	July 31	c147.38	Oct. 29	126.12		

c Nearby well being pumped.

4/28-3Q2. A. J. Haverland. Old San Marcos Pass Road and Cathedral Oaks Road. 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, 1943-52.

Jan. 30	148.19	Apr. 28	143.60	July 31	145.59	Oct. 29	c148.36
Feb. 26	147.10	May 29	142.35	Aug. 28	c147.01	Nov. 28	142.56
Mar. 31	145.42	June 26	146.62	Sept. 30	c146.99	Dec. 30	140.07

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: 1941-52.

Jan. 30	110.64	Apr. 28	105.59	July 31	c117.72	Oct. 29	110.60
Feb. 26	108.90	May 29	104.44	Aug. 28	c117.03	Nov. 28	108.96
Mar. 31	107.30	June 26	104.38	Sept. 30	c118.60	Dec. 31	106.69

c Nearby well being pumped.

4/28-5R4. F. J. Ewing. Fairview Road and Stow Canyon Road. 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 4 00 below lsd, June 1937; lowest 75.57 below lsd, Sept. 30, 1952. Records available: 1937-38, 1941, 1943-52.

Jan. 30	72.15	Apr. 28	71.65	Sept. 30	75.57	Nov. 28	73.89
Feb. 26	71.54	May 29	71.00	Oct. 29	74.26	Dec. 31	69.73
Mar. 31	71.46	July 31	72.79				

4/28-9A3. L. M. Cavaletto. Southern Pacific Railroad 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 69.95 below lsd, Nov. 26, 1951. Records available: 1941-52.

Jan. 30	66.43	Apr. 28	59.61	July 31	60.63	Oct. 29	61.25
Feb. 26	64.04	May 29	58.51	Aug. 28	60.58	Nov. 28	60.85
Mar. 31	61.51	June 26	58.11	Sept. 30	61.12	Dec. 31	60.12

4/28-9E1. A. T. Spaulding. Fairview Road and Encina Road. 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 76.82 below lsd, July 31, 1952. Records available: 1941, 1943-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	72.69	Apr. 28	70.71	Aug. 28	71.40	Oct. 29	72.52
Feb. 26	72.19	May 29	69.93	Sept. 30	72.27	Dec. 31	70.55
Mar. 31	71.52	July 31	76.62				

4/28-10A1. John S. Greene. Turnpike Road 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 142.34 below lsd, Sept. 25, 1951. Records available: 1941-52.

Apr. 28	130.02	July 31	118.91	Sept. 30	123.26	Nov. 28	125.98
May 29	107.69	Aug. 28	127.65	Oct. 29	124.84	Dec. 30	126.66
June 26	107.98						

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, 1941-52.

Jan. 31	95.09	Apr. 28	91.89	Aug. 28	94.35	Nov. 28	89.90
Feb. 26	94.15	May 29	89.28	Sept. 30	91.16	Dec. 31	88.49
Mar. 31	93.13	July 31	89.22	Oct. 29	92.66		

4/28-10K2. W. G. Troup. Southern Pacific Railroad and San Marcos Pass Road. 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 141.57 below lsd, Aug. 30, 1951. Records available: 1941-52.

Jan. 30	126.95	Apr. 28	124.79	Aug. 28	134.65	Nov. 28	128.58
Feb. 26	126.16	June 26	b137.37	Sept. 30	130.54	Dec. 31	127.14
Mar. 31	125.30	July 31	139.60	Oct. 29	136.34		

b Pumped recently.

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 109.60 below lsd, Feb. 26, 1952. Records available: 1947-52.

Jan. 30	106.89	Apr. 28	104.75	Sept. 30	107.14	Nov. 28	106.92
Feb. 26	109.60	July 31	107.23	Oct. 29	107.70	Dec. 31	105.56
Mar. 31	105.52	Aug. 28	108.55				

4/28-12L4. Frank Bottine. Drilled unused artesian well in Santa Barbara formation, diameter 12 inches, depth 410 feet, cased to 410, perforations 67-410. Land-surface datum is about 122 feet above msl. Highest water level 34.17 below lsd, Apr. 24, 1942; lowest 105.72 below lsd, Sept. 7, 1949. Records available: 1941-50, 1952. Jan. 31, 83.86; Feb. 26, 82.12; Mar. 31, 87.14; Apr. 28, 84.47; May 29, 85.36.

4/28-16F2. John Begg. U. S. Highway 101 and Goleta Beach Road. 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, 1943-52. Jan. 30, 61.70; Feb. 26, 59.62; Mar. 31, 55.25.

4/28-16F3. John Begg. U. S. Highway 101 and Goleta Beach Road. Dug unused well surrounding drilled well 4/28-16F2. Water-table well in alluvium, diameter 6 feet, depth 22 feet. Land-surface datum is about 22 feet above msl. Highest water level 6.90 below lsd, May 14, 1941; lowest 19.58 below lsd, Dec. 24, 1951. Records available: 1941, 1943-52. Jan. 30, 17.93; Feb. 26, 16.01; Mar. 31, 12.40.

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 41.30 below lsd, Mar. 29, 1951. Records available: 1941, 1945-52.

Jan. 30	34.85	Apr. 28	23.85	Aug. 28	38.80	Nov. 28	38.70
Feb. 26	29.52	May 29	28.48	Sept. 30	38.93	Dec. 31	38.19
Mar. 31	23.78	June 26	32.86	Oct. 29	39.37		

4/28-17H3. Elmo Little. Mathews Ave. and Fairview Road. 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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	5.50	Apr. 28	4.28	July 31	6.23	Oct. 29	7.11
Feb. 26	5.48	May 29	4.80	Aug. 28	6.87	Nov. 28	7.10
Mar. 31	3.70	June 26	5.32	Sept. 30	7.35	Dec. 31	5.49

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: 1941-52.

Jan. 30	36.67	Apr. 28	33.30	July 31	35.20	Oct. 29	37.19
Feb. 26	35.72	May 29	34.47	Aug. 28	38.54	Nov. 28	36.09
Mar. 31	33.97	June 26	35.12	Sept. 30	38.44	Dec. 31	34.10

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 19.80 below lsd, Mar. 27, 1945; lowest 45.99 below lsd, Aug. 2, 1949. Records available: 1941-52.

Feb. 26	30.66	June 26	29.55	Sept. 30	29.90	Nov. 28	28.17
Mar. 31	28.58	July 31	30.75	Oct. 29	28.85	Dec. 31	26.76
May 29	29.33	Aug. 28	30.56				

4/29-13G3. T. B. Bishop Co. Hollister Ave. and Storke Road. 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 68.14 below lsd, Dec. 31, 1952; lowest 72.59 below lsd, Nov. 26, 1951. Records available: 1951-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 26, 1951	72.59	Feb. 26, 1952	69.85	May 29, 1952	68.69	Nov. 28, 1952	69.23
Dec. 24	71.79	Mar. 31	69.45	July 31	68.71	Dec. 31	68.14
Jan. 30, 1952	70.40	Apr. 28	69.05				

4/29-14A3. Frank Baker. Glen Annie Road and Southern Pacific Railroad. 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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 30	83.16	Apr. 28	82.07	July 31	82.93	Oct. 29	82.55
Feb. 26	82.69	May 29	81.78	Aug. 28	83.00	Nov. 28	82.21
Mar. 31	82.32	June 26	82.36	Sept. 30	83.40	Dec. 31	81.50

Santa Ynez River Valley

6/30-6A1. Sam Torrence. Near Santa Ynez. Telephone Road 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 100.26 below lsd, June 27, 1951. Records available: 1942-52.

Jan. 28	73.54	Apr. 25	68.02	July 30	90.20	Nov. 26	75.35
Feb. 29	77.01	May 29	88.59	Oct. 29	78.22	Dec. 30	72.67
Mar. 28	69.33	June 25	88.49				

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 55.47 below lsd, Nov. 29, 1951. Records available: 1941-52.

Jan. 28	45.43	July 30	49.19	Sept. 29	b50.97	Nov. 26	50.15
Mar. 28	44.69	Aug. 27	b51.10	Oct. 29	b50.12	Dec. 30	48.06
June 25	a47.11						

a Pumping.
b Pumped recently.

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 38.84 below lsd, Nov. 26, 1952. Records available: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	36.32	Apr. 25	35.92	Aug. 27	38.01	Oct. 29	38.72
Feb. 29	36.04	June 25	35.81	Sept. 29	38.52	Nov. 26	38.84
Mar. 28	35.92	July 30	37.09				

6/30-21B1. Rancho Juan y Lolita. Near Santa Ynez. Drilled irrigation water-table well in river-channel deposits, diameter 12 inches, depth 58 feet. Land-surface datum is about 495 feet above msl. Highest water level 11.80 below lsd, Apr. 5, 1949; lowest 24.17 below lsd, Sept. 21, 1951. Records available: 1933, 1941, 1948-51. Measurement discontinued.

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 12.85 below lsd, Oct. 29, Dec. 30, 1952; lowest 13.43 below lsd, Nov. 26, 1952. Records available: 1952. Sept. 29, 13.15; Oct. 29, 12.85; Nov. 26, 13.43; Dec. 30, 12.85.

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 7.9 below lsd, Mar. 10, 1941; lowest 24.00 below lsd, May 20, 21, 1951. Records available: 1933-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	23.36	11.66	.....	.....	10.83	11.10	11.77	12.74	12.73	14.73	13.70	13.35
2	23.37	11.60	.....	9.89	10.84	11.10	11.79	12.76	12.78	14.78	13.69	13.34
3	23.38	11.55	.....	9.92	10.86	11.11	11.79	12.77	12.87	14.81	13.68	.....
4	23.40	11.49	.....	9.98	10.89	11.09	11.80	12.79	12.92	14.83	13.66	.....
5	23.40	11.46	.....	10.04	10.91	11.07	11.82	12.86	12.98	14.83	13.65	.....
6	23.42	11.42	.....	10.17	10.92	11.07	11.85	12.89	13.02	14.81	13.64	12.82
7	23.43	11.40	12.33	10.21	10.94	11.07	11.91	12.91	13.04	14.79	13.64	12.72
8	23.45	11.40	12.28	10.27	10.99	11.06	11.99	12.90	13.11	14.73	13.65	12.64
9	23.47	11.45	12.20	10.28	10.99	11.07	12.06	12.87	13.20	14.70	13.66	12.56
10	23.47	11.50	12.10	10.28	11.01	11.07	12.11	12.82	13.29	14.66	13.67	12.48
11	23.48	11.57	12.06	10.33	11.02	11.08	.....	12.79	13.35	14.63	13.67	12.42
12	23.41	11.60	11.97	10.39	11.04	11.08	12.21	12.78	13.42	14.59	13.67	12.38
13	23.42	11.62	11.93	10.39	11.06	11.09	12.27	12.62	13.47	14.54	13.68	12.36
14	23.29	11.65	11.77	10.45	11.08	11.12	12.35	12.53	13.55	14.49	13.67	12.33
15	.....	11.67	10.73	10.45	11.08	11.16	12.39	12.15	13.57	14.43	13.63	12.31
16	.....	11.70	10.24	10.48	11.10	11.18	12.42	12.29	13.61	14.38	13.61	12.30
17	22.72	11.72	9.86	10.51	11.13	11.20	12.45	12.49	13.65	14.33	13.56	12.30
18	20.76	11.79	9.55	10.53	11.16	11.26	12.46	12.60	13.73	14.28	13.51	12.32
19	18.29	11.86	9.35	10.54	11.16	11.31	12.49	12.66	13.80	14.22	13.44	12.38
20	17.15	11.90	9.26	10.57	11.16	11.37	12.49	12.73	13.86	14.15	13.40	12.38
21	16.29	11.93	.....	10.62	11.17	11.43	12.55	12.74	13.92	14.11	13.39	12.40
22	15.27	11.98	.....	10.65	11.17	11.49	12.62	12.74	14.00	14.06	13.38	12.33
23	14.35	12.02	.....	10.67	11.17	11.55	12.68	12.74	14.10	14.01	13.38	12.30
24	13.67	12.06	.....	10.69	11.16	11.61	12.66	12.75	14.19	13.96	13.41	12.28
25	13.13	12.10	.....	10.72	11.14	11.65	12.22	12.80	14.28	13.92	13.43	12.28
26	12.76	12.13	.....	10.74	11.14	11.66	12.22	12.84	14.38	13.89	13.45	12.26
27	12.48	12.15	.....	10.74	11.14	11.70	.....	12.86	14.47	13.84	13.45	12.24
28	12.22	12.19	.....	10.76	11.14	11.71	.....	12.84	14.56	13.81	13.46	12.11
29	12.02	12.23	.....	10.81	.....	11.73	12.56	12.80	14.63	13.78	13.45	12.11
30	11.87		.....	10.82	11.09	11.76	12.62	12.79	14.70	13.75	13.45	12.05
31	11.75		.....		11.11		12.69	12.51		13.72		11.99

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, 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	34.55	Apr. 25	32.41	Aug. 27	35.36	Nov. 26	36.05
Feb. 29	36.55	May 29	33.57	Oct. 29	36.97	Dec. 30	35.03
Mar. 28	30.66	July 30	34.94				

6/31-13D1. Mrs. W. E. Parker. Near Santa Ynez. Refugio Pass Road 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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	112.35	Apr. 25	109.55	July 30	110.75	Oct. 29	111.64
Feb. 29	111.60	May 29	109.84	Aug. 27	b116.55	Nov. 26	111.59
Mar. 28	111.00	June 25	110.69	Sept. 29	111.78	Dec. 30	111.24

b Pumped recently.

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, 1949-52.

Jan. 28	6.65	May 29	9.01	Sept. 29	10.23	Nov. 26	9.56
Mar. 28	7.42	June 25	8.35	Oct. 29	9.58	Dec. 30	8.62

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: 1931-52.

Jan. 28	20.14	Apr. 25	a18.88	July 30	b22.88	Oct. 29	b22.17
Feb. 29	19.72	May 29	a19.76	Aug. 29	22.09	Nov. 26	21.32
Mar. 28	a18.14	June 25	a19.98	Sept. 29	b21.89	Dec. 30	20.64

a Pumping.
b Pumped recently.

6/31-21H2. Petan Dairy Ranch. Near Solvang. Santa Ynez River and Alisal Road. 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 12.59 below lsd, Nov. 29, 1951. Records available: 1931-52.

Jan. 28	8.67	Apr. 25	8.63	July 30	c9.82	Oct. 29	c11.13
Feb. 29	9.78	May 29	9.36	Aug. 27	c10.17	Nov. 26	11.07
Mar. 28	8.81	June 25	9.22	Sept. 29	c10.87	Dec. 30	10.44

c Nearby well being pumped.

6/32-6K1. 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 21.25 below lsd, May 2, 1949. Records available: 1932-34, 1941-52.

Jan. 28	18.65	Apr. 25	a22.82	July 30	a21.37	Nov. 26	19.24
Feb. 29	18.59	Mar. 29	a30.08	Sept. 29	18.82	Dec. 30	19.15
Mar. 28	17.10	June 25	a25.07	Oct. 29	21.05		

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 lsd. Highest water level 26.20 below lsd, Jan. 21, 1942; lowest 37.69 below lsd, Aug. 6, 1942. Records available: 1932-52.

Jan. 28	29.53	Apr. 25	32.73	Aug. 27	35.53	Nov. 26	33.33
Feb. 29	30.99	May 29	34.34	Sept. 29	33.93	Dec. 30	32.77
Mar. 28	28.80	July 30	34.34	Oct. 29	33.62		

6/32-11A1. 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 47.84 below lsd, Sept. 21, 1951. Records available: 1950-52.

Jan. 28	41.49	Apr. 25	39.24	July 30	45.10	Oct. 29	42.99
Feb. 29	42.71	May 29	43.29	Aug. 27	43.52	Nov. 26	43.75
Mar. 28	41.10	June 25	43.10	Sept. 29	43.61	Dec. 30	42.21

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 35.72 below lsd, Oct. 27, 1949, Nov. 17, 1950. Records available: 1932, 1941, 1949-52.

Jan. 29	31.86	Apr. 28	25.47	July 29	28.48	Oct. 28	b32.87
Feb. 28	30.48	May 28	26.75	Aug. 26	b30.31	Nov. 24	32.15
Mar. 27	25.19	June 26	26.14	Sept. 26	31.77	Dec. 29	33.00
Apr. 9	24.77						

b Pumped recently.

6/32-12J2. A. Bodine. In 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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	28.90	Apr. 25	27.55	July 30	32.11	Oct. 29	30.89
Feb. 29	31.42	May 29	25.32	Aug. 27	30.59	Nov. 26	30.36
Mar. 27	28.08	June 25	25.44	Sept. 29	31.25	Dec. 30	31.21

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 50.18 below lsd, Oct. 29, 1951. Records available: 1941-52. Feb. 28, 43.06; Apr. 28, 44.08; July 29, 43.04; Sept. 26, 43.12; Nov. 24, 42.98.

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, 1949-52.

Jan. 29	32.57	Apr. 28	32.52	July 29	33.73	Oct. 28	b33.36
Feb. 28	33.40	May 28	32.97	Aug. 26	b34.05	Nov. 24	33.15
Mar. 27	31.82	June 26	33.33	Sept. 26	33.63	Dec. 29	32.50

b Pumped recently.

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, 1949-52.

Jan. 29	42.87	Apr. 28	41.40	July 29	42.97	Oct. 28	42.61
Feb. 28	42.72	May 28	41.85	Aug. 26	43.77	Nov. 24	42.21
Mar. 3	42.67	June 24	42.04	Sept. 26	43.49	Dec. 29	41.62
27	40.76						

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: 1932-52.

Jan. 29	44.44	Apr. 28	38.85	July 29	c46.22	Oct. 28	40.14
Feb. 28	42.02	May 28	44.53	Aug. 26	c45.57	Nov. 24	39.64
Mar. 27	40.46	June 24	42.10	Sept. 26	41.43	Dec. 29	38.26

c Nearby well being pumped.

6/33-11L1. William Rennie. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 80 feet, cased to 62, perforations 35-62. Land-surface datum is about 204 feet above msl. Highest water level 1.04 below lsd, Jan. 29, 1952; lowest 17.04 below lsd, Sept. 24, 1951. Records available: 1949-52. Jan. 29, 1.04; Feb. 28, 1.64, nearby well being pumped; Mar. 3, 1.55. Measurement discontinued.

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, 1949-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
July 16, 1947	14.80	Nov. 15, 1950	8.59	Apr. 28, 1952	7.25	Oct. 28, 1952	8.45
Oct. 11, 1949	11.19	Nov. 7, 1951	16.39	June 24	8.28	Nov. 24	8.25
27	10.83	Mar. 3, 1952	7.67	Aug. 26	8.98	Dec. 29	7.25
Feb. 27, 1950	4.29	27	6.21	Sept. 26	9.45		

6/34-1P1. Hollister Estate. Near Lompoc. Santa Rosa Road 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: 1949-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	38.19	July 29	40.42	Sept. 26	39.78	Nov. 24	39.85
Mar. 27	36.46	Aug. 26	39.50	Oct. 28	39.54	Dec. 29	39.56

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: 1948-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	37.50	Apr. 25	37.03	July 30	37.55	Oct. 29	37.63
Feb. 29	38.31	May 29	37.50	Aug. 27	37.50	Nov. 26	37.37
Mar. 28	36.66	June 25	37.70	Sept. 29	37.63	Dec. 30	36.40

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 45.31 below lsd, Dec. 29, 1952; lowest 58.17 below lsd, Apr. 24, 1951. Records available: 1950-52.

Jan. 29	50.10	Apr. 28	47.05	July 29	49.79	Oct. 28	47.44
Feb. 28	49.16	May 28	53.08	Aug. 26	48.78	Nov. 24	46.62
Mar. 27	48.06	June 24	49.27	Sept. 26	48.27	Dec. 29	45.31

6/34-6C2. Bank of America. Near Lompoc. Ocean Ave. and Legge Ave. 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, 1943-52.

Jan. 29	59.99	Apr. 28	58.06	July 29	b66.39	Oct. 28	b60.71
Feb. 28	60.69	May 28	60.87	Aug. 26	64.76	Dec. 29	b56.45
Mar. 27	57.02	June 24	61.86	Sept. 26	b60.59		

b Pumped recently.

6/34-12F2. Hollister Estate. Near Lompoc. Santa Rosa Road 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 35.71 below lsd, Oct. 30, 1942; lowest 40.18 below lsd, Dec. 26, 1951. Records available: 1942, 1949-52.

Jan. 29	39.77	Mar. 27	37.65	Aug. 26	36.78	Nov. 24	36.75
Feb. 28	39.30	Apr. 28	39.03	Sept. 26	36.28	Dec. 29	36.90
Mar. 3	39.07	July 29	36.10	Oct. 28	36.69		

7/31-23P1. F. L. Mattei. In 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: 1942-52.

Jan. 28	58.03	Apr. 25	47.29	Aug. 27	45.10	Oct. 29	42.19
Feb. 29	54.59	May 29	49.49	Sept. 29	42.52	Dec. 30	32.78
Mar. 28	50.45	June 25	47.87				

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 88.73 below lsd, Dec. 27, 1951. Records available: 1942-52.

Jan. 28	88.56	May 29	79.73	Aug. 27	80.57	Nov. 26	82.93
Mar. 28	85.17	June 25	78.93	Sept. 29	82.32	Dec. 30	82.94
Apr. 25	82.76	July 30	79.78	Oct. 29	82.63		

7/31-36G2. Laura Grossi. Near Ballard. Roblar Ave. and Grand (Refugio) Ave. 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 52.42 below lsd, Aug. 27, 1952. Records available: 1947-52.

Jan. 28	41.87	Apr. 25	41.42	July 30	50.19	Oct. 29	52.21
Feb. 29	46.52	May 29	46.50	Aug. 27	52.42	Nov. 26	51.44
Mar. 28	39.32	June 25	48.27	Sept. 29	52.35	Dec. 30	50.27

7/31-36L2. D. B. Kilbourne. Near Ballard. Baseline Ave. and Grand(Refugio) Ave. 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 53.60 below lsd, Aug. 27, 1952. Records available: 1942-52

Jan. 28	42.83	Apr. 25	39.60	July 30	50.06	Sept. 29	52.24
Feb. 29	42.32	May 29	46.15	Aug. 27	53.60	Dec. 30	45.27
Mar. 28	39.88	June 25	47.39				

7/33-30C1. John Valla. Near Lompoc. Orcutt Road 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 156.11 below lsd, Nov. 26, 1952. Records available: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	155.52	Apr. 25	155.60	July 30	155.88	Oct. 29	156.07
Feb. 29	155.40	May 29	155.65	Aug. 27	155.91	Nov. 26	156.11
Mar. 28	155.34	June 25	155.72	Sept. 29	156.04	Dec. 30	156.04

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 11.38 below lsd, Sept. 7, 1952. Records available: 1948-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.19	11.12	11.15	11.00	10.97	10.96	11.17	11.21	11.29	11.27	11.31	11.19
2	11.21	11.13	11.12	11.03	10.98	10.96	11.18	11.23	11.29	11.25	11.30	11.17
3	11.27	11.17	11.12	11.05	10.96	10.97	11.18	11.19	11.30	11.25	11.30	11.17
4	11.33	11.19	11.13	11.06	10.96	10.99	11.18	11.15	11.32	11.25	11.30	11.19
5	11.37	11.19	11.17	11.05	10.96	11.03	11.19	11.13	11.34	11.25	11.31	11.23
6	11.34	11.16	11.21	11.05	10.95	11.06	11.20	11.13	11.37	11.25	11.29	11.21
7	11.30	11.11	11.19	11.05	10.94	11.08	11.21	11.13	11.38	11.25	11.27	11.19
8	11.30	11.06	11.15	11.06	10.94	11.08	11.21	11.13	11.37	11.27	11.27	11.19
9	11.30	11.05	11.11	11.08	10.95	11.08	11.23	11.13	11.36	11.27	11.27	11.21
10	11.34	11.05	11.09	11.07	10.96	11.09	11.24	11.14	11.32	11.27	11.28	11.26
11	11.32	11.07	11.08	11.07	10.95	11.09	11.25	11.15	11.29	11.28	11.31	11.28
12	11.26	11.10	11.08	11.07	10.95	11.09	11.25	11.15	11.28	11.30	11.33	11.28
13	11.22	11.15	11.10	11.09	10.95	11.09	11.26	11.15	11.25	11.31	11.33	11.22
14	11.19	11.17	11.10	11.13	10.96	11.09	11.28	11.15	11.24	11.31	11.28	11.16
15	11.13	11.19	11.01	11.17	10.96	11.10	11.26	11.16	11.24	11.30	11.18	11.11
16	11.06	11.20	11.01	11.18	10.95	11.11	11.24	11.20	11.24	11.27	11.13	11.14
17	11.00	11.18	11.00	11.08	10.95	11.10	11.23	11.21	11.25	11.26	11.13	10.97
18	10.95	11.17	11.00	10.97	10.95	11.10	11.21	11.21	11.25	11.27	11.16	10.96
19	10.95	11.17	11.01	10.90	10.96	11.10	11.20	11.22	11.25	11.31	11.25	10.96
20	10.96	11.19	11.04	10.85	10.98	11.10	11.20	11.23	11.24	11.35	11.30	10.96
21	10.99	11.20	11.08	10.84	10.98	11.11	11.13	11.23	11.24	11.36	11.28	10.96
22	11.03	11.21	11.12	10.84	10.99	11.12	11.11	11.23	11.24	11.36	11.25	11.04
23	11.04	11.21	11.16	10.84	10.99	11.13	11.11	11.23	11.26	11.36	11.24	11.10
24	11.01	11.22	11.19	10.86	10.99	11.14	11.13	11.24	11.27	11.37	11.24	11.11
25	10.99	11.24	11.13	10.89	10.98	11.15	11.14	11.24	11.29	11.35	11.25	11.12
26	10.99	11.25	11.07	10.90	10.96	11.15	11.16	11.25	11.30	11.34	11.29	11.12
27	11.01	11.24	11.02	10.91	10.96	11.15	11.18	11.26	11.31	11.34	11.32	11.11
28	11.05	11.23	11.00	10.91	10.96	11.15	11.20	11.28	11.32	11.35	11.33	11.07
29	11.09	11.22	11.00	10.92	10.97	11.15	11.20	11.29	11.31	11.35	11.29	11.07
30	11.11		11.00	10.94	10.97	11.16	11.20	11.29	11.31	11.34	11.23	11.03
31	11.11		11.00		10.96		11.20	11.29		11.33		11.02

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 303.83 below lsd, Dec. 21, 1952. Records available: 1949-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	303.37	303.42	303.08	303.41	303.47	303.37	303.50	303.58	303.53	303.52	303.57	303.51
2	303.55	303.44	303.14	.....	303.41	303.40	303.49	303.50	303.56	303.55	303.57	303.60
3	303.58	303.44	303.42	.....	303.41	303.44	303.52	303.46	303.58	303.64	303.62	303.75
4	303.48	303.44	303.47	.....	303.51	303.55	303.54	303.46	303.63	303.64	303.62	303.70
5	303.33	303.34	303.49	.....	303.48	303.49	303.48	303.49	303.61	303.62	303.53	303.60
6	303.13	303.22	303.25	303.42	303.38	303.47	303.48	303.56	303.60	303.64	303.46	303.60
7	303.17	303.10	303.25	303.34	303.39	303.45	303.48	303.51	303.58	303.71	303.46	303.60
8	303.36	303.10	303.26	303.36	303.52	303.46	303.55	303.50	303.57	303.65	303.56	303.67
9	303.55	303.20	303.29	.....	303.44	303.45	303.55	303.54	303.55	303.60	303.67	303.81
10	303.38	303.29	303.30	.....	303.40	303.45	303.50	303.55	303.55	303.63	303.72	303.76

7/34-12E1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	303.19	303.31	303.30	.....	303.38	303.46	303.50	303.50	303.56	303.71	303.68	303.69
12	303.09	.....	303.45	303.45	303.41	303.48	303.53	303.51	303.50	303.73	303.68	303.69
13	303.13	.....	303.44	303.48	303.45	303.46	303.58	303.54	303.48	303.72	303.51	303.57
14	303.27	.....	303.41	303.54	303.37	303.52	303.47	303.57	303.48	303.70	303.41	303.47
15	303.12	.....	.....	303.47	303.30	303.49	303.37	303.61	303.52	303.64	313.17	303.45
16	303.12	303.24	.....	303.39	303.30	303.44	303.37	303.56	303.53	303.56	303.21	303.30
17	303.00	303.24	.....	303.37	303.34	303.44	303.42	303.56	303.54	303.61	303.60	303.29
18	303.00	303.31	.....	303.37	303.46	303.45	303.42	303.55	303.56	303.75	303.79	303.42
19	303.38	303.41	.....	303.34	303.45	303.48	303.42	303.52	303.56	303.69	303.69	303.58
20	.....	303.36	.....	303.32	303.42	303.50	303.44	303.52	303.57	303.60	303.54	303.59
21	.....	303.35	303.48	303.36	303.42	303.50	303.51	303.56	303.61	303.62	303.53	303.83
22	303.39	303.38	303.46	303.46	303.42	303.50	303.52	303.56	303.65	303.68	303.52	303.76
23	303.33	303.40	303.36	303.48	303.41	303.52	303.54	303.52	303.63	303.69	303.53	303.72
24	303.18	303.40	303.34	393.47	303.42	303.51	303.56	303.55	303.63	303.62	303.64	303.69
25	303.18	303.30	303.32	303.43	303.40	303.47	303.57	303.57	303.63	303.62	303.71	303.73
26	303.41	303.23	303.32	303.41	303.40	303.46	303.60	303.58	303.63	303.67	303.73	303.65
27	.....	303.23	303.36	303.38	303.41	303.48	303.63	303.60	303.63	303.70	303.71	303.57
28	.....	303.30	.....	303.38	303.46	303.48	303.55	303.59	303.63	303.68	303.64	303.56
29	303.40	303.10	.....	303.51	303.37	303.56	303.55	303.57	303.67	303.65	303.45	303.68
30	303.40		.....	303.61	303.34	303.55	303.55	303.55	303.57	303.61	303.47	303.56
31	.....		303.45		303.34		303.61	303.54		303.62		303.60

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 199.32 below lsd, Oct. 29, 1952. Records available: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	198.94	June 25	198.84	Sept. 29	199.30	Nov. 26	199.22
Feb. 29	198.90	July 30	199.19	Oct. 29	199.32	Dec. 30	199.05
May 29	198.74	Aug. 27	199.25				

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: 1948-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	23.25	22.28	20.76	.....	.....	.....	.....	21.36	21.55	.....	21.29	20.25
2	22.23	22.16	20.77	.....	.....	.....	.....	21.30	21.53	.....	21.28	20.34
3	23.27	22.03	20.71	.....	.....	.....	h20.96	21.28	21.58	.....	21.25	20.32
4	23.25	21.95	20.66	.....	.....	.....	.....	21.27	21.66	.....	21.21	20.26
5	23.27	21.91	20.61	.....	.....	.....	.....	21.25	21.67	.....	21.19	20.21
6	23.17	21.74	20.61	.....	.....	h20.64	.....	21.28	21.69	.....	21.18	20.22
7	23.23	.....	20.74	.....	.....	.....	.....	21.25	21.70	.....	21.21	20.18
8	23.28	.....	20.77	.....	.....	.....	.....	21.26	21.67	.....	21.27	20.19
9	23.33	.....	30.74	.....	20.20	.....	.....	21.28	21.69	.....	21.28	20.13
10	23.28	.....	20.75	.....	20.20	.....	.....	21.22	21.74	.....	21.21	20.06
11	23.26	.....	20.77	h19.66	20.22	.....	.....	21.18	21.76	.....	21.13	20.00
12	23.23	.....	20.72	.....	20.24	.....	21.08	21.20	21.77	.....	21.11	19.99
13	23.23	.....	.....	.....	20.27	.....	21.02	21.22	.....	.....	21.16	19.90
14	23.11	.....	h20.67	.....	20.24	.....	20.95	21.24	.....	.....	20.96	19.81
15	23.04	.....	.....	.....	20.21	.....	20.96	21.26	21.55	.....	20.87	19.79
16	23.06	21.34	.....	.....	20.25	.....	21.05	21.25	21.60	.....	20.95	19.70
17	23.02	21.32	.....	.....	20.31	.....	21.16	21.27	21.64	.....	21.02	19.69
18	23.02	21.31	.....	.....	20.29	.....	21.22	21.27	21.70	.....	20.96	19.76
19	22.98	21.26	.....	.....	20.28	.....	21.27	12.27	21.73	.....	20.88	19.65
20	22.85	21.23	.....	.....	20.28	.....	21.26	21.33	.....	.....	20.78	19.66
21	22.77	21.22	.....	.....	20.34	.....	21.11	21.45	.....	.....	20.78	19.72
22	22.71	21.18	.....	.....	20.39	.....	21.13	21.53	.....	.....	20.71	19.56
23	22.63	21.13	.....	.....	20.43	.....	21.15	21.55	.....	.....	20.69	19.55
24	22.55	21.09	.....	.....	20.46	.....	21.22	21.61	.....	21.59	20.66	19.52
25	22.55	20.99	.....	.....	.....	.....	21.37	21.60	.....	21.52	20.64	19.52

7/34-21E1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	22.62	20.97	.....	.....	.....	.....	21.45	21.63	.....	21.46	20.59	19.43
27	22.46	20.97	.....	.....	.....	.....	21.43	21.64	.....	21.36	20.54	19.37
28	22.34	20.85	.....	.....	.....	.....	21.37	21.66	.....	21.32	20.47	19.36
29	22.30	20.75	.....	.....	.....	.....	21.38	21.66	.....	21.30	20.36	19.35
30	22.32		.....	.....	.....	.....	21.40	21.65	.....	21.31	20.40	19.24
31	22.30		.....		.....		21.41	21.58		21.31		19.30

h Tape measurement.

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 39.75 below lsd, May 28, 1951. Records available: 1941-42, 1946-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	28.47	Apr. 25	27.73	July 30	29.08	Oct. 29	28.57
Feb. 29	c29.53	May 29	30.15	Aug. 27	31.14	Nov. 26	28.33
Mar. 28	27.74	June 25	29.39	Sept. 29	28.87	Dec. 29	27.93

c Nearby well being pumped.

7/34-22Q4. U. S. Geol. Survey, A. Scolari property. Near Lompoc. Rucker Crossing Road and North A St. Drilled observation water-table well in alluvium, diameter 2 inches, depth 24 feet, cased to 24, screened 21-24. Land-surface datum is 82.72 feet above msl. Highest water level 12.84 below lsd, Mar. 21, 1952; lowest dry Aug. 28, 1950-Dec. 26, 1951. Records available: 1947-52.

Jan. 29	14.39	Apr. 24	13.43	July 29	14.58	Oct. 29	17.31
Feb. 28	14.57	May 28	13.86	Aug. 26	15.48	Nov. 24	15.40
Mar. 27	13.01	June 24	14.18	Sept. 26	16.60	Dec. 29	13.00

7/34-26C2. J. Maxwell Wilson. Near Lompoc. State Highway 150 and Orcutt Road. 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 33.17 below lsd, Dec. 29, 1952; lowest 37.00 below lsd, Jan. 18, 1952. Records available: 1951-52.

Jan. 18	37.00	Apr. 25	36.26	July 30	33.70	Oct. 29	33.37
28	36.35	May 29	34.44	Aug. 27	33.34	Nov. 26	33.31
Feb. 29	35.97	June 25	34.17	Sept. 29	34.31	Dec. 29	33.17
Mar. 28	35.52						

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: 1950-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 9, 1950	40.13	July 18, 1952	45.04	Oct. 30, 1952	43.07	Nov. 26, 1952	42.17
Nov. 8, 1951	43.68	Aug. 1	45.10	31	43.05	27	42.12
Jan. 15, 1952	42.62	11	45.10	Nov. 1	42.96	28	42.10
18	42.78	25	44.54	2	42.88	29	42.00
22	42.55	Sept. 12	44.13	3	42.86	Dec. 2	42.08
25	42.67	Oct. 3	44.05	4	42.85	6	41.91
31	42.55	14	43.46	5	42.83	9	41.86
Feb. 5	42.43	15	43.26	6	42.84	11	41.74
8	42.34	16	43.19	7	42.82	13	41.66
12	42.36	17	43.21	8	42.80	14	41.63
20	42.20	18	43.18	9	42.78	20	41.58
Mar. 5	42.17	19	43.12	10	42.83	22	41.43
25	41.80	20	43.12	11	42.77	23	41.43
Apr. 4	41.82	21	43.11	12	42.78	24	41.46
11	41.71	22	43.08	13	42.72	25	41.47
18	42.79	23	43.14	14	42.63	26	41.36
May 2	42.43	24	43.06	15	42.46	27	41.31
16	42.28	25	43.10	19	42.33	28	41.31
June 6	43.63	26	43.02	20	42.31	29	41.33
13	43.37	27	42.99	21	42.33	30	41.23
20	43.40	28	43.04	22	42.33	31	41.29
27	43.55	29	43.02	25	42.24		

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 8.24 below lsd, Apr. 18, 1952; lowest dry Aug. 28, 1950-Dec. 26, 1951. Records available: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	11.44	Apr. 28	8.29	July 29	8.95	Oct. 29	10.72
Feb. 28	10.53	May 28	8.54	Aug. 26	9.51	Nov. 24	11.04
Mar. 27	8.57	June 24	8.70	Sept. 26	10.13	Dec. 29	9.98
Apr. 27	8.24						

7/34-27J3. U. S. Geol. Survey, L. H. Schuyler property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 26 feet. Land-surface datum is 86.18 feet above msl. Highest water level 13.05 below lsd, Mar. 15, 1944; lowest dry Aug. 31, 1949-Feb. 8, 1950, June 5, 1950-Apr. 28, 1952. Records available: 1943-45, 1947-52.

Jan. 29	(f)	Mar. 27	(f)	Oct. 23	19.13	Nov. 24	19.24
Feb. 28	(f)	Apr. 28	(f)	29	19.14	Dec. 29	19.24

f Dry.

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: 1941-52.

Jan. 29	41.01	Apr. 28	39.77	July 29	38.85	Oct. 29	37.05
Feb. 28	38.47	May 28	39.04	Aug. 26	37.18	Nov. 24	36.23
Mar. 27	35.99	June 24	37.38	Sept. 26	37.73	Dec. 29	34.46

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, 1942-52.

Jan. 29	33.59	May 28	32.16	Aug. 26	32.26	Nov. 24	30.60
Feb. 28	32.24	June 24	c35.71	Sept. 26	33.92	Dec. 30	28.62
Mar. 27	29.75	July 29	35.06	Oct. 29	32.03		

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, 1941. Records available: 1930-52.

Jan. 29	14.87	Apr. 28	15.56	July 29	15.08	Oct. 29	12.48
Feb. 28	13.56	May 28	13.10	Aug. 26	13.32	Nov. 24	11.00
Mar. 27	11.75	June 24	14.44	Sept. 26	13.67	Dec. 30	9.40

7/34-28R2. U. S. Geol. Survey, W. A. Burpee property. Formerly A. C. Zvolanek. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 19 feet. Land-surface datum is 69.50 feet above msl. Highest water level 2.70 below lsd, Mar. 2, 1944; lowest dry June 28 thru Dec. 26, 1951. Records available: 1943-52.

Jan. 29	17.26	Apr. 28	13.02	July 29	12.90	Oct. 29	12.91
Feb. 28	16.69	May 28	13.02	Aug. 26	12.90	Nov. 24	12.67
Mar. 27	15.26	June 24	13.00	Sept. 26	12.83	Dec. 30	11.77

7/34-29E4. W. H. Sanor. Near Lompoc. Central Ave. and Floradale Ave. 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: 1945-52.

Jan. 29	24.81	June 24	31.34	Aug. 26	28.19	Nov. 24	22.25
Feb. 28	27.68	July 29	31.64	Oct. 29	26.45	Dec. 29	20.53
Mar. 27	22.67						

7/34-29E5. U. S. Geol. Survey, W. H. Sanor property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 26 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: 1945-52.

Jan. 29	(f)	Apr. 28	23.71	July 29	23.91	Oct. 29	22.90
Feb. 28	(f)	May 28	c23.57	Aug. 26	22.93	Nov. 24	22.57
Mar. 27	24.74	June 24	23.39	Sept. 26	c23.15	Dec. 29	21.83

f Dry.

c Nearby well being pumped.

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: 1945-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	22.64	Apr. 24	19.68	July 29	d21.02	Oct. 28	20.11
Feb. 28	21.81	May 28	21.01	Aug. 26	19.79	Nov. 24	19.39
Mar. 27	19.00	June 24	c21.25	Sept. 26	20.30	Dec. 29	17.94

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

7/34-30L4. Union Sugar Co. Near Lompoc. Legge Ave. and Central Ave. Drilled irrigation artesian well in alluvium, diameter 14 inches. Land-surface datum is about 59 feet above msl. Highest water level 17.33 below lsd, Dec. 29, 1952; lowest 32.63 below lsd, Aug. 29, 1951. Records available: 1951-52.

Jan. 29	21.43	May 28	30.45	Sept. 26	24.77	Nov. 24	18.84
Feb. 28	25.86	Aug. 26	24.86	Oct. 28	21.92	Dec. 29	17.33
Mar. 27	22.23						

7/34-30R1. Mrs. Elizabeth Manfrina. Near Lompoc. Ocean Ave. and Floradale Ave. Dug water-table well in alluvium, diameter 10 inches, depth 30 feet. Land-surface datum is 66.81 above msl. Highest water level 9.65 below lsd, May 5, 1941; lowest 28.87 below lsd, Oct. 29, 1951. Records available: 1930-52.

Jan. 29	25.37	June 24	21.55	Sept. 26	20.93	Nov. 24	21.69
Feb. 28	24.16	July 29	20.52	Oct. 28	21.70	Dec. 29	21.20
May 28	21.52	Aug. 26	20.45				

7/34-31C2. Union Sugar Co. Near Lompoc. Ocean Ave. and Legge Ave. 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, 1947-52.

Jan. 29	23.81	Apr. 28	28.56	July 29	34.72	Oct. 28	24.52
Feb. 28	27.03	May 28	29.16	Aug. 26	27.94	Nov. 24	21.83
Mar. 27	21.18	June 24	29.96	Sept. 26	25.67	Dec. 29	20.25

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 13.68 below lsd, Apr. 29, 1949; lowest 21.97 below lsd, Dec. 26, 1951. Records available: 1947-52.

Jan. 29	20.27	Apr. 24	14.88	July 29	17.35	Oct. 28	18.96
Feb. 28	20.94	May 28	16.19	Aug. 26	18.03	Nov. 24	19.16
Mar. 27	17.59	June 24	16.90	Sept. 26	18.60	Dec. 29	19.15

7/34-32A1. Mrs. May Clemmens. Near Lompoc. Pine Ave. and Thirteenth Road. 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, 1947-52.

Jan. 29	32.26	May 28	36.32	Sept. 26	33.99	Nov. 24	29.89
Feb. 28	33.18	July 29	36.66	Oct. 29	34.80	Dec. 29	28.57
Mar. 27	29.44	Aug. 26	35.77				

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, 1950, Mar. 27, 1951-Dec. 29, 1952. Records available: 1947-52. Dry Jan. 29-Dec. 29.

7/34-32P5. U. S. Geol. Survey, J. Bodger & Sons property. Near Lompoc. Ocean Ave. and Bailey Ave. 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: 1947-52.

Jan. 29	33.21	Apr. 28	30.72	July 29	31.71	Oct. 28	30.22
Feb. 28	32.74	May 28	31.14	Aug. 26	30.90	Nov. 24	30.13
Mar. 27	30.92	June 24	30.90	Sept. 26	30.37	Dec. 29	29.59

7/34-34H1. 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: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	47.46	Apr. 28	41.79	July 29	42.38	Oct. 29	43.27
Feb. 28	44.31	May 28	41.06	Aug. 26	42.20	Nov. 24	41.42
Mar. 27	41.70	June 24	43.71	Sept. 26	43.72	Dec. 30	39.46

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: 1930-52.

Jan. 28	17.92	Apr. 25	15.78	July 30	16.76	Oct. 29	18.67
Feb. 29	17.78	May 29	17.18	Aug. 27	17.03	Nov. 26	16.69
Mar. 28	15.49	June 25	16.20	Sept. 29	19.71	Dec. 29	15.91

7/34-35F6. U. S. Geol. Survey, M. Schuyler property. Near Lompoc. Drilled observation water-table well in alluvium, diameter 2 inches, depth 54 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 various dates, 1945-1951. Records available: 1943-52.

Jan. 29	42.18	Apr. 28	37.99	July 29	c39.50	Oct. 29	41.64
Feb. 28	40.89	May 28	38.44	Aug. 26	39.22	Nov. 24	38.56
Mar. 27	37.97	June 24	38.44	Sept. 26	42.11	Dec. 30	37.50

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: 1947-52.

Jan. 29	44.09	Apr. 28	40.49	Aug. 26	42.16	Nov. 24	41.16
Feb. 28	42.84	May 28	40.48	Sept. 26	45.39	Dec. 30	39.42
Mar. 27	40.15	June 24	41.15	Oct. 29	43.70		

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: 1930-52.

Jan. 28	14.52	Apr. 25	10.36	July 30	10.51	Oct. 29	10.26
Feb. 28	12.40	May 29	9.93	Aug. 27	10.10	Nov. 26	9.99
Mar. 28	10.77	June 25	9.87	Sept. 29	10.24	Dec. 29	9.53

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: 1930-52.

Jan. 29	6.90	Apr. 28	6.10	July 29	7.56	Oct. 28	7.46
Feb. 28	7.43	May 28	6.74	Aug. 26	7.70	Nov. 24	6.90
Mar. 27	4.91	June 24	7.36	Sept. 26	7.48	Dec. 29	6.03

7/35-22F2. U. S. Geol. Survey, Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Drilled observation water-table well in river-channel deposits, diameter 2 inches, depth 11 feet. Land-surface datum is 19.12 feet above msl. Highest water level 4.03 below lsd Feb. 7, 1950; lowest 6.28 below lsd, Oct. 21, 1948. Records available: 1947-51. Measurement discontinued.

7/35-22J1. Union Sugar Co. Near Lompoc. Ocean Ave. and Renwick Ave. 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, 1945-52.

Jan. 29	10.54	Apr. 28	9.73	Sept. 26	11.85	Nov. 24	9.16
Feb. 28	10.51	May 28	11.58	Oct. 28	10.88	Dec. 29	8.23
Mar. 27	7.53	Aug. 26	12.90				

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: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	6.29	Mar. 27	2.87	July 29	10.65	Nov. 24	7.49
Feb. 28	6.29	May 28	7.15	Aug. 26	7.97	Dec. 29	6.27

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: 1947-52.

Jan. 29	6.71	Apr. 28	5.56	July 29	6.67	Oct. 28	c8.04
Feb. 28	7.38	May 28	5.84	Aug. 26	6.20	Nov. 24	8.25
Mar. 27	5.14	June 24	5.49	Sept. 26	c7.21	Dec. 29	7.39

c Nearby well being pumped.

7/35-23E2. Union Sugar Co. Near Lompoc. Ocean Ave. and Union Sugar Ave. 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, 1945-52. Jan. 29, 14.49; Feb. 28, 14.69; Mar. 27, 11.86; Apr. 28, 13.12; Oct. 28, 14.40; Nov. 24, 13.55; Dec. 29, 12.53.

7/35-23E4. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Ocean Ave. and Union Sugar Ave. 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: 1947-52.

Jan. 29	15.85	Apr. 28	13.14	July 29	15.01	Oct. 28	15.33
Feb. 28	15.70	May 28	c13.92	Aug. 26	c15.56	Nov. 24	14.75
Mar. 27	12.22	June 24	c14.08	Sept. 26	c15.82	Dec. 29	13.75

c Nearby well being pumped.

7/35-23J2. Union Sugar Co. Near Lompoc. Central Ave. and Artesia Ave. Drilled irrigation artesian well in alluvium, diameter 12 inches, depth 158 feet. Land-surface datum is 43.93 feet above msl. Highest water level 13.55 below lsd, Mar. 27, 1952; lowest 29.92 below lsd, Aug. 26, 1948. Records available: 1947-52.

Jan. 29	16.61	Apr. 28	17.80	Sept. 26	16.86	Nov. 24	13.61
Feb. 28	16.78	July 29	19.64	Oct. 28	15.98	Dec. 29	13.72
Mar. 27	13.55						

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 15.08 below lsd, Dec. 29, 1952; lowest 26.56 below lsd, Oct. 29, 1951. Records available: 1947-52.

Jan. 29	21.33	Apr. 28	16.25	July 29	18.85	Oct. 28	16.95
Feb. 28	19.52	May 28	16.45	Aug. 26	c18.55	Nov. 24	16.23
Mar. 27	17.77	June 24	c17.38	Sept. 26	17.88	Dec. 29	15.08

c Nearby well being pumped.

7/35-23N2. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Ocean Ave. and Renwick Ave. Drilled observation water-table well in alluvium, diameter 2 inches, depth 17 feet. Land-surface datum is 32.72 feet above msl. Highest water level 10.80 below lsd, Apr. 3, 1947; lowest 15.52 below lsd, Sept. 24, 1951. Records available: 1945-52. Jan. 29, 12.25. Measurement discontinued.

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. Oct. 28, 24.49; Nov. 24, 24.33; Dec. 29, 24.05.

7/35-24J2. U. S. Geol. Survey, T. M. Parks property. Near Lompoc. Central Ave. and Douglass Ave. 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 23.45 below lsd, Oct. 28, 1952; lowest dry several dates 1949-52. Records available: 1947-52.

Jan. 29	(f)	Apr. 28	27.71	July 29	24.04	Oct. 28	23.45
Feb. 28	(f)	May 28	26.92	Aug. 26	23.90	Nov. 24	23.65
Mar. 27	(f)	June 24	25.56	Sept. 26	23.83	Dec. 29	23.65

f Dry.

7/35-25F5. Union Sugar Co. Near Lompoc. Central Ave. and De Wolfe Ave. 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 10.71 below lsd, Dec. 29, 1952; lowest 26.86 below lsd, June 5, 1950. Records available: 1945-48, 1952. Dec. 29, 10.71.

7/35-25F6. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Central Ave. and De Wolfe Ave. 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: 1945-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	14.88	Apr. 28	9.78	July 29	8.40	Oct. 28	11.09
Feb. 28	11.90	May 28	7.00	Aug. 26	9.56	Nov. 24	11.13
Mar. 27	9.58	June 24	c9.34	Sept. 26	9.87	Dec. 29	11.10

c Nearby well being pumped.

7/35-26F1. Union Sugar Co. Near Lompoc. Central Ave. and Union Sugar Ave. 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, 1947-52. Jan. 29, 9.16; Feb. 28, 10.30; Mar. 27, 6.18; Sept. 26, 10.26; Oct. 28, 9.46; Nov. 24, 8.75; Dec. 29, 7.50.

7/35-26F3. U. S. Geol. Survey, Union Sugar Co. property. Near Lompoc. Union Sugar Ave. and Central Ave. 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 6.28 below lsd, Dec. 29, 1952; lowest 13.29 below lsd, July 27, 1949. Records available: 1947-52.

Jan. 29	8.94	Apr. 28	7.14	July 29	c6.96	Oct. 28	6.60
Feb. 28	8.32	May 28	c6.90	Aug. 26	c7.11	Nov. 24	6.52
Mar. 27	7.58	June 24	c6.90	Sept. 26	c6.82	Dec. 29	6.28

c Nearby well being pumped.

7/35-26J4. County of Santa Barbara, Artesia School District. Near Lompoc. Artesia Ave. and Central Ave. 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 7.59 below lsd, Dec. 29, 1952; lowest 33.63 below lsd, July 26, 1951. Records available: 1947-52.

Jan. 29	11.07	Apr. 28	14.23	July 29	18.91	Oct. 28	13.63
Feb. 28	13.29	May 28	14.59	Aug. 26	15.75	Nov. 24	9.12
Mar. 27	8.88	June 24	17.85	Sept. 26	16.45	Dec. 29	7.59

7/35-27C2. Southern Pacific Railroad. Near Lompoc. Southern Pacific Railroad and Renwick Ave. Drilled unused artesian well in alluvium, diameter 15 inches, depth 118 feet. Land-surface datum is 32.42 feet above msl. Highest water level 3.2 below lsd, Aug. 5, 1930, June 8, 1931; lowest 22.03 below lsd, Sept. 24, 1948. Records available: 1930-32, 1941-49. No measurement made in 1952.

7/35-35A3. Gus Aquistapace. Near Lompoc. Ocean Ave. and Artesia Ave. 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: 1947-52.

Jan. 29	12.63	May 28	15.96	Aug. 26	17.64	Nov. 24	10.85
Feb. 28	12.40	June 24	14.27	Sept. 26	15.99	Dec. 29	9.48
Mar. 27	8.60	July 29	13.49	Oct. 28	12.20		

7/35-35A4. U. S. Geol. Survey, Gus Aquistapace property. Near Lompoc. Ocean Ave. and Artesia Ave. 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: 1947-52.

Jan. 29	6.50	Apr. 28	5.17	July 29	15.70	Oct. 28	12.59
Feb. 28	8.66	May 28	7.87	Aug. 26	13.10	Nov. 24	11.29
Mar. 27	2.51	June 24	10.63	Sept. 26	13.09	Dec. 29	6.84

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 0.43 below lsd, Mar. 31, 1949; lowest 10.42 below lsd, May 28, 1951. Records available: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	2.55	Apr. 28	2.19	July 29	5.40	Oct. 28	2.39
Feb. 28	2.36	May 28	4.26	Aug. 26	5.18	Nov. 24	1.40
Mar. 27	0.63	June 24	4.16	Sept. 26	4.49	Dec. 29	0.50

7/35-35C4. U. S. Geol. Survey, Department of the Army, Camp Cooke Military Reservation. Near Lompoc. Ocean Ave. and Union Sugar Ave. 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 1.67 below lsd, Dec. 29, 1952; lowest 4.79 below lsd, Feb. 26, 1951. Records available: 1947-52.

Jan. 29	2.03	Apr. 28	3.28	July 29	2.18	Oct. 28	3.50
Feb. 28	3.06	May 28	2.95	Aug. 26	2.27	Nov. 24	2.77
Mar. 27	2.20	June 24	2.83	Sept. 26	2.63	Dec. 29	1.67

7/35-36J6. Denholm Seed Co. Near Lompoc. Ocean Ave. and Douglass Ave. 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: 1947-52.

Jan. 29	23.18	Apr. 28	28.20	July 29	28.29	Oct. 28	22.99
Feb. 28	24.04	May 28	23.98	Aug. 26	25.04	Nov. 24	21.54
Mar. 27	20.05	June 24	30.74	Sept. 26	24.14	Dec. 29	20.15

7/35-36J7. U. S. Geol. Survey, Denholm Seed Co. property. Near Lompoc. Ocean Ave. and Douglass Ave. 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 19.82 below lsd, Apr. 28, 1952; lowest 31.32 below lsd, July 27, 1950. Records available: 1947-52.

Jan. 29	23.88	Apr. 28	19.82	Aug. 26	22.80	Nov. 24	21.11
Feb. 28	23.15	May 28	20.64	Sept. 26	22.11	Dec. 29	20.09
Mar. 27	20.55	Aug. 1	23.19	Oct. 28	21.97		

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 10.45 below lsd, Aug. 26, 1952. Records available: 1943-52.

Jan. 29	4.16	Apr. 29	2.95	July 28	7.96	Oct. 28	9.90
Feb. 27	3.85	May 28	7.84	Aug. 26	10.45	Nov. 25	6.35
Mar. 28	2.01	June 23	6.53	Sept. 26	9.42	Dec. 31	3.77

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: 1943-52.

Jan. 29	24.12	Apr. 29	23.91	July 28	25.13	Oct. 28	25.82
Feb. 27	24.22	May 28	23.19	Aug. 26	25.97	Nov. 25	25.81
Mar. 28	23.84	June 23	24.34	Sept. 26	25.86	Dec. 31	25.60

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: 1943-52.

Jan. 29	22.90	Apr. 29	23.89	July 28	24.44	Oct. 28	23.55
Feb. 27	22.66	May 28	a28.78	Aug. 26	24.24	Nov. 25	24.37
Mar. 28	b25.36	June 23	b29.95	Sept. 26	b32.76	Dec. 31	23.30

a Pumping.
b Pumped recently.

8/34-23B1. Josephine Harris Estate. Near Los Alamos. Harris-Los Alamos Road 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 18.20 below lsd, Sept. 25, 1951. Records available: 1943-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	16.43	Apr. 29	15.17	July 28	c18.84	Oct. 28	c16.23
Feb. 27	16.14	May 28	15.64	Aug. 26	c17.78	Nov. 25	c16.08
Mar. 28	15.18	June 23	c16.61	Sept. 26	c16.71	Dec. 31	15.61

c Nearby well being pumped.

Santa Maria Valley

9/32-7N1. Valerio Tognazzini. Near Sisquoc. State Highway 140 and Pacific Coast Railway. 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, 1938-52.

Jan. 1	g111.17	Apr. 1	g90.83	July 1	g68.00	Oct. 28	68.62
29	110.02	29	76.67	Sept. 26	69.01	Nov. 25	68.68
Feb. 27	101.28	May 28	69.73	Oct. 1	g69.00	Dec. 31	68.74
Mar. 28	92.32	June 23	68.07				

g By Santa Maria Valley Water Conservation District.

9/32-17G1. Caldrone Estate. Near Sisquoc. Tepusquet Creek Road 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: 1941-52.

Jan. 29	66.17	Apr. 29	24.82	July 28	b28.93	Oct. 28	b34.87
Feb. 27	44.42	May 28	21.82	Aug. 26	b30.60	Nov. 25	35.25
Mar. 28	34.74	June 23	23.03	Sept. 26	32.39	Dec. 31	34.98

b Pumped recently.

9/33-2A1. Santa Maria Realty Co. In Garey. Wicks Ave. and Andrews Ave. 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, 1938-52.

Jan. 1	g83.50	Apr. 1	g62.17	July 1	g53.00	Oct. 28	59.37
29	75.42	29	50.44	Aug. 26	57.05	Nov. 25	60.07
Feb. 27	70.51	May 28	49.92	Sept. 26	58.43	Dec. 31	59.60
Mar. 28	63.38	June 23	52.86	Oct. 1	g58.50		

g By Santa Maria Valley Water Conservation District.

9/33-15D1. South Basin Oil Co. Near Garey. Drilled domestic and stock water-table well in Paso Robles formation, diameter 8 inches, depth 374 feet, perforations 348-350. Land-surface datum is about 582 feet above msl. Highest water level 318.09 below lsd, Jan. 29, 1947; lowest 352.04 below lsd, Nov. 29, 1950. Records available: 1947-50. No measurement made in 1952.

9/34-3N3. City of Santa Maria, Well 3. Drilled public supply water-table well in Orcutt formation, diameter 16 inches, depth 226 feet, cased to 222, perforations 162-188. Land-surface datum is about 253 feet above msl. Highest water level 143.40 below lsd, Mar. 31, Apr. 30, 1933; lowest 175.40 below lsd, Oct. 1950. Records available: 1933-51. No measurement made in 1952.

8/34-6K2. Associated Oil Co. Near Orcutt. Highway 1 and Casmalia Road. 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 78.42 below lsd, Oct. 28, 1952. Records available: 1942, 1951-52.

Jan. 29	74.91	Apr. 29	75.59	July 28	76.37	Oct. 28	c78.42
Feb. 27	73.85	May 28	75.32	Aug. 26	c77.84	Nov. 25	c78.16
Mar. 28	73.41	June 23	76.69	Sept. 26	77.29	Dec. 31	76.60

c Nearby well being pumped.

9/34-8K1. C. Muscio. Near Orcutt. Casmalia Road and Orcutt-Casmalia Road. 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 189.05 below lsd, Oct. 28, 1952. Records available: 1942, 1947-52.

Jan. 29	171.94	Mar. 28	170.80	May 28	177.52	Nov. 25	186.55
Feb. 27	169.83	Apr. 29	174.14	Oct. 28	189.05	Dec. 31	186.64

10/33-7P1. P. T. Bonetti. Suey Road and Main St. Drilled irrigation water-table well in alluvium and Paso Robles formation, diameter 18 inches, depth 365 feet, cased to 330 feet. 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: 1951-52. Jan. 29, 116.43; Feb. 27, 119.35; Mar. 28, 113.46; Oct. 28, 112.76; Dec. 30, 114.47.

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.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
May 28	76.10	July 28	85.60	Sept. 26	93.19	Nov. 24	97.40
June 23	80.14	Aug. 26	89.53	Oct. 28	95.83	Dec. 30	98.78

10/33-18G1. La Brea Securities Co. Well 8. Near Santa Maria. Suey Road and Santa Maria Valley Railroad. 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: 1939-52. Jan. 1, 131.10; Apr. 1, 130.65, pumped recently; July 1, 109.60, pumped recently; Oct. 1, 110.44, pumped recently. Measurements by Santa Maria Valley Water Conservation District.

10/33-19B1. Owen T. Rice. Near Santa Maria. Battles Road and East Stowell Road. 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, 1929-52.

Jan. 1	g142.20	Apr. 1	g144.10	July 1	g120.40	Oct. 28	106.08
29	141.37	29	147.73	Aug. 26	113.65	Nov. 24	103.54
Feb. 27	142.54	May 28	125.00	Sept. 26	110.18	Dec. 31	101.37
Mar. 28	145.04	June 23	122.68	Oct. 1	g109.80		

g By Santa Maria Valley Water Conservation District.

10/33-21N2. Frank Costa Jr. Near Santa Maria. Santa Maria Valley Railroad 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, 1944-52.

Jan. 29	136.54	Apr. 29	136.43	Sept. 26	115.64	Nov. 25	106.07
Feb. 27	136.54	May 28	138.39	Oct. 28	109.91	Dec. 31	102.98
Mar. 28	135.29	Aug. 26	123.40				

10/33-27G1. W. C. Adam. Near Santa Maria. State Highway 140 and Pacific Coast Railway. 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, 1938-52. Jan. 1, 111.03; Apr. 1, 62.20, pumped recently; July 1, 43.00, pumped recently; Oct. 1, 49.50. Measurements by Santa Maria Valley Water Conservation District.

10/33-27K1. L. H. Adam. Near Santa Maria. State Highway 140 and Pacific Coast Railway. 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: 1941-52.

Jan. 29	86.41	Apr. 29	40.98	Aug. 26	c49.78	Nov. 25	53.71
Feb. 27	70.68	June 23	40.53	Sept. 26	50.89	Dec. 31	50.95
Mar. 28	52.71	July 28	c46.77	Oct. 28	52.14		

c Nearby well being pumped.

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: 1929-52.

Jan. 1	g107.65	Apr. 1	g89.30	July 1	g57.02	Oct. 1	g58.19
29	104.88	29	76.99	Aug. 26	57.69	Nov. 25	58.30
Feb. 27	98.05	May 28	61.93	Sept. 26	57.74	Dec. 31	57.76

g 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 173.60 below lsd, Apr. 1, 1952; lowest 189.35 below lsd, July 1, 1952. Records available: 1951-52. Aug. 1, 1951, 188.00, pumped recently; Oct. 1, 186.25; Jan. 1, 1952, 177.30; Apr. 1, 173.60; July 1, 189.35; Oct. 1, 185.10, pumped recently. Measurements by Santa Maria Valley Water Conservation District.

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: 1951-52. Aug. 1, 1951, 176.00, pumped recently; Oct. 1, 168.17; Jan. 1, 1952, 170.00; Apr. 1, 151.51, estimated; July 1, 176.50; Oct. 1, 178.50 pumped recently. Measurements by Santa Maria Valley Water Conservation District.

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: 1951-52. Aug. 1, 1951, 158.00, pumped recently; Oct. 1, 157.90; Jan. 1, 1952, 158.50; Apr. 1, 156.17, pumped recently; July 1, 158.50; Oct. 1, 167.25. Measurements by Santa Maria Valley Water Conservation District.

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 175.25 below lsd, Apr. 1, 1952; lowest 194.25 below lsd, Aug. 1, 1951. Records available: 1951-52. Aug. 1, 1951, 194.25, pumped recently; Oct. 1, 189.50, Jan. 1, 1952, 178.20; Apr. 1, 175.25; July 1, 187.40; Oct. 1, 187.00, pumped recently. Measurements by Santa Maria Valley Water Conservation District.

10/33-30R1. Santa Maria Berry Farms. Near Santa Maria. Rice School Road and Section 8 Road. 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 173.00 below lsd, Apr. 1, 1952; lowest 184.00 below lsd, Oct. 1, 1951. Records available: 1951-52. Oct. 1, 1951, 184.00, pumped recently; Jan. 1, 1952, 175.00; Apr. 1, 173.00; July 1, 183.00, pumped recently; Oct. 1, 182.00, pumped recently. Measurements by Santa Maria Valley Water Conservation District.

10/33-33H1. E. L. Sargent. Near Santa Maria. Sisquoc Road and Bradley Canyon Road. 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. 29, 1947; lowest 217.97 below lsd, Nov. 25, 1952. Records available: 1947-52. Jan. 29, 215.99; Feb. 27, 216.29; May 28, 216.95; July 28, 217.25; Nov. 25, 217.97; Dec. 31, 217.82.

10/34-2R1. Gracio Apalatequi. Near Santa Maria. U. S. Highway 101 and Donovan Road. 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, 1938-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g123.20	Apr. 1	g109.20	Aug. 26	108.16	Oct. 28	112.42
29	122.93	29	101.97	Sept. 26	110.72	Nov. 24	113.44
Feb. 27	115.36	June 23	103.03	Oct. 1	g109.60	Dec. 30	113.97
Mar. 28	110.60	July 1	g102.50				

g By Santa Maria Valley Water Conservation District.

10/34-4R1. Gerald Donovan. Near Santa Maria. Donovan Road and North Blosser Road. 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 122.50 below lsd, Oct. 30, 1951. Records available: 1930, 1942, 1945-52.

Jan. 29	119.58	Apr. 29	116.31	Sept. 26	112.57	Nov. 25	110.70
Feb. 27	119.01	May 28	115.00	Oct. 28	111.83	Dec. 31	109.00
Mar. 28	117.52	Aug. 26	113.14				

10/34-6N1. Grisingher & Signorelli. Near Santa Maria. State Highway 166 and Bonita Road. 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, 1936-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g86.73	Apr. 1	g82.86	July 1	bg87.60	Nov. 25	84.88
29	85.04	29	83.34	Oct. 1	bg89.00	Dec. 31	82.09
Mar. 28	82.87						

b Pumped recently.
g By Santa Maria Valley Water Conservation District.

10/34-9F1. Mrs. A. E. Preisker. Near Santa Maria. State Highway 166 and North Blosser Road. 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 115.70 below lsd, Jan. 1, 1952. Records available: 1942-52. Jan. 1, 115.70; Apr. 1, 112.70; July 1, 112.30; Oct. 1, 114.70. Measurements by Santa Maria Valley Water Conservation District.

10/34-14E3. City of Santa Maria. Near Santa Maria. Santa Maria Valley Railroad 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 153.96 below lsd, Nov. 11, 1951. Records available: 1917-52.

Jan. 1	g147.54	Apr. 6	g143.91	July 6	g143.99	Oct. 5	g143.15
6	g147.00	13	g143.47	13	g144.10	12	g142.90
13	g146.79	20	g143.99	20	g143.61	19	g144.52
20	g146.00	27	g143.50	27	g144.21	26	g142.67
27	g147.13	29	143.66	28	144.10	28	142.72
28	144.79	May 4	g143.76	Aug. 3	g144.13	Nov. 2	g142.35
Feb. 3	g147.67	11	g143.88	10	g144.29	9	g142.46
10	g147.00	18	g144.30	17	g144.44	16	g141.92
17	g142.10	25	g143.98	24	g144.21	23	g141.20
24	g140.17	28	144.04	26	144.07	25	141.22
27	144.14	June 1	g143.98	31	g144.03	30	g141.23
Mar. 2	g144.07	8	g143.81	Sept. 7	g144.33	Dec. 7	g140.22
9	g144.03	15	g143.90	14	144.04	14	g140.15
16	g143.89	22	g143.81	21	g143.56	21	g139.75
23	g142.96	24	143.94	26	143.73	28	g139.28
28	143.74	29	g143.93	28	g143.21	30	139.10
31	g143.64						

g Measured by Santa Maria Valley Water Conservation District.

10/34-20H1. Ulisse Tognazzini. Near Santa Maria. Casmalia Road and Santa Maria Valley Railroad. 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 108.10 below lsd, Sept. 26, 1952. Records available: 1930, 1942, 1944-52.

Jan. 29	102.23	May 28	105.10	Sept. 26	108.10	Nov. 25	105.53
Feb. 27	103.13	June 23	106.14	Oct. 28	107.17	Dec. 31	103.33
Mar. 28	102.32						

10/34-22R1. George J. Wheat. Near Santa Maria. Stowell Road 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 137.27 below lsd, Oct. 28, 1952. Records available: 1931, 1934, 1938-52.

Jan. 1	g132.50	Apr. 1	g131.25	July 1	g132.84	Oct. 28	137.27
29	133.58	29	134.09	28	b137.24	Nov. 25	135.58
Feb. 27	133.54	May 28	135.25	Oct. 1	g136.90	Dec. 31	133.61
Mar. 28	b132.93	June 23	136.03				

b Pumped recently.
g By Santa Maria Valley Water Conservation District.

10/34-23H1. Marion B. Rice. Near Santa Maria. Stowell Road and South Nance Road. 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, 1938-52.

10/34-23H1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g151.17	July 1	g155.25	Oct. 1	g152.75	Nov. 24	151.49
Apr. 1	g148.25	28	155.19	28	152.34	Dec. 31	149.74

g 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, 1951-52. Aug. 1, 1951, 124.55; Oct. 1, 123.05; Jan. 1, 1952, 117.30; Apr. 1, 114.50; July 1, 119.80; Oct. 1, 119.30. Measurements by Santa Maria Valley Water Conservation District.

10/34-31F1. Union Sugar Co. Near Betteravia. Betteravia-Santa Maria Road and Casmalia Road. Drilled irrigation water-table well in Orcutt formation, diameter 10 inches, depth 175 feet. Land-surface datum is about 179 feet above msl. Highest water level 75.95 below lsd, Apr. 25, 1945; lowest 106.32 below lsd, Jan. 30, 1951. Records available: 1942, 1944-52. Jan. 29, 104.00; Feb. 27, 103.82. Measurement discontinued.

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 20.08 below lsd, July 27, 1951. Records available: 1929-36, 1938-52.

Jan. 1	g7.70	Apr. 1	g6.30	July 1	bg23.30	Oct. 1	gb20.87
29	6.73	29	13.69	28	17.55	Nov. 25	8.20
Feb. 27	11.22	May 28	17.88	Aug. 26	18.02	Dec. 31	6.40
Mar. 28	7.91						

b Pumped recently.
g 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 29.64 below lsd, July 27, 1951. Records available: 1942-52.

Jan. 29	16.10	Apr. 29	23.33	July 28	27.13	Oct. 28	28.34
Feb. 27	20.73	May 28	27.38	Aug. 26	c28.87	Nov. 25	17.57
Mar. 28	17.42	June 23	c28.88	Sept. 26	28.70	Dec. 31	15.69

c Nearby well being pumped.

10/35-9F1. Waller-Franklin Seed Co. Near Guadalupe. State Highway 166 and Southern Pacific Railroad. 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, 1938-52.

Jan. 1	g32.40	Apr. 1	g33.30	July 1	g47.00	Oct. 1	g43.40
29	30.79	29	40.63	28	45.92	28	43.30
Feb. 27	37.62	May 28	42.95	Aug. 26	44.28	Nov. 25	32.74
Mar. 28	35.47	June 23	44.35	Sept. 26	45.20	Dec. 31	30.36

g By Santa Maria Valley Water Conservation District.

10/35-9N1. Agnes King. At 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, 1938-52. Jan. 1, 31.26; Apr. 1, 41.50, pumped recently; July 1, 56.80, pumped recently; Oct. 1, 43.86. Measurements by Santa Maria Valley Water Conservation District.

10/35-12M1. E. and G. Le Roy. Near Santa Maria. State Highway 166 and Bonita Road. 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 79.29 below lsd, Aug. 29, 1951. Records available: 1924, 1927, 1930-32, 1938-52.

Jan. 1	g71.50	Apr. 1	bg83.90	Sept. 26	77.37	Oct. 28	75.83
29	70.55	July 1	75.70	Oct. 1	g77.77	Dec. 31	67.30

g By Santa Maria Valley Water Conservation District.

10/35-21B1. Mathison & Shaw. Near Guadalupe. Corralillos Canyon Road and Southern Pacific Railroad. 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 44.07 below lsd, Oct. 1, 1951. Records available: 1938-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	g26.30	Apr. 1	g27.17	Oct. 1	bg44.49	Nov. 25	28.32
Feb. 27	31.83	July 1	bg46.15	28	36.59	Dec. 31	25.44

b Pumped recently.
g By Santa Maria Valley Water Conservation District.

10/35-24B1. Union Sugar Co. Near Santa Maria. Corralillos Canyon Road and Ray Road. 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 83.61 below lsd, July 27, 1951. Records available: 1934, 1938-52.

Jan. 1	g75.30	Apr. 1	g76.13	Aug. 26	c85.12	Oct. 28	b82.54
29	73.48	29	c79.65	Sept. 26	c84.53	Nov. 25	76.67
Feb. 27	77.03	July 1	bg84.10	Oct. 1	g82.77	Dec. 31	73.74
Mar. 28	73.64	28	c85.34				

b Pumped recently.
c Nearby well being pumped.
g 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. 20, 1947; lowest 254.12 below lsd, Aug. 29, 1951. Records available: 1947-52.

Jan. 29	a241.15	Apr. 29	b242.85	July 28	b251.00	Oct. 28	246.55
Feb. 27	a242.37	May 28	243.85	Aug. 26	250.30	Nov. 25	242.77
Mar. 28	a238.57	June 23	b245.93	Sept. 26	b249.33	Dec. 31	b244.41

a Pumping.
b Pumped recently.

11/34-30Q1. Mary Bolton. Near Santa Maria. Bonita Road and Guadalupe-Nipomo Road. 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 84.42 below lsd, Nov. 27, 1951. Records available: 1930, 1933, 1936, 1938-52.

Jan. 1	g82.60	Mar. 28	76.39	July 1	g73.33	Nov. 25	78.15
29	81.88	Apr. 1	bg76.25	Oct. 1	g78.90	Dec. 31	77.07
Feb. 27	79.84	June 23	73.35	28	78.38		

b Pumped recently.
g By Santa Maria Valley Water Conservation District.

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 105.00 below lsd, Oct. 20, 1948. Records available: 1930, 1942, 1947-52.

Jan. 29	89.90	Apr. 29	63.64	Aug. 26	72.12	Oct. 28	77.77
Feb. 26	91.44	June 23	66.79	Sept. 26	74.85	Nov. 24	80.20
Mar. 28	81.25	July 28	69.63				

11/35-20E1. Union Sugar Co. Near Guadalupe. Southern Pacific Railroad and Oso Flaco Lake Road. 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: 1938-52.

Jan. 1	g10.00	Apr. 1	g8.60	July 28	20.58	Oct. 28	14.52
Feb. 27	11.65	29	14.10	Aug. 26	18.31	Nov. 25	10.15
Mar. 28	8.98	July 1	bg49.00	Oct. 1	g18.50	Dec. 31	8.11

b Pumped recently.
g By Santa Maria Valley Water Conservation District.

11/35-25H1. M. J. Mendoza. Near Santa Maria. Bonita Road and Guadalupe-Nipomo Road. 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 61.32 below lsd, Jan. 29, 1952. Records available: 1942, 1944-52.

11/35-25H1--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 29	61.32	Apr. 29	58.78	July 28	57.65	Oct. 28	58.95
Feb. 27	60.57	May 28	57.60	Aug. 26	57.88	Nov. 25	59.25
Mar. 28	60.14	June 23	57.12	Sept. 26	58.41	Dec. 31	59.24

11/35-26M2. Sam Tognazzini. Near Guadalupe. Oso Flaco Lake Road and Guadalupe-Nipomo Road. 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, 1944-52.

Jan. 29	49.40	May 28	c62.48	Aug. 26	c70.23	Nov. 25	51.05
Feb. 27	52.57	June 23	64.38	Sept. 26	c74.45	Dec. 31	48.51
Mar. 28	48.92	July 28	c65.69	Oct. 28	59.17		

c Nearby well being pumped.

11/35-28M1. Union Sugar Co. Near Guadalupe. Oso Flaco Lake Road and Southern Pacific Railroad. 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 46.67 below lsd, July 1, 1952. Records available: 1934, 1938-52. Jan. 1, 30.15; Apr. 1, 31.75; July 1, 46.67; Oct. 1, 44.60. Measurements by Santa Maria Valley Water Conservation District.

11/35-33G1. H. E. Pezzoni. Near Guadalupe. Southern Pacific Railroad and Guadalupe-Nipomo Road. 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 50.24 below lsd, July 1, 1952. Records available: 1930, 1933-34, 1938-52.

Jan. 1	g39.08	Apr. 1	g38.41	July 1	g50.24	Oct. 28	45.37
29	36.60	29	44.40	28	49.93	Nov. 25	37.91
Feb. 27	41.33	May 28	48.26	Sept. 26	48.07	Dec. 31	35.64
Mar. 28	37.19	June 23	47.47	Oct. 1	g47.95		

g By Santa Maria Valley Water Conservation District.

11/35-35A1. Elmer A. Runels. Near Guadalupe. Bonita Road and Nipomo-Guadalupe Road. 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 67.23 below lsd, Oct. 1, 1951. Records available: 1925, 1930, 1938-52. Jan. 1, 63.28; Apr. 1, 58.02; July 1, 64.05; Oct. 1, 66.58. Measurements by Santa Maria Valley Water Conservation District.

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: 1950-52.

Jan. 28	35.12	Apr. 28	19.39	July 29	19.78	Oct. 27	21.41
Feb. 26	30.06	May 27	18.92	Aug. 27	20.26	Nov. 24	21.39
Mar. 27	21.01	June 24	19.00	Sept. 25	20.78	Dec. 30	20.76

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 127.58 below lsd, Dec. 30, 1952; lowest 151.51 below lsd, Jan. 28, 1952. Records available: 1950-52.

Jan. 28	151.51	Apr. 28	141.63	July 29	132.59	Oct. 27	129.64
Feb. 26	150.82	May 27	137.02	Aug. 27	131.29	Nov. 24	129.07
Mar. 27	150.33	June 24	134.88	Sept. 25	130.43	Dec. 30	127.58

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 74.44 below lsd, Dec. 27, 1951. Records available: 1941-52.

Jan. 28	73.90	Apr. 28	71.30	July 29	71.91	Oct. 27	73.76
Feb. 26	73.39	May 27	c71.04	Aug. 27	72.76	Nov. 24	73.67
Mar. 27	d73.14	June 24	71.11	Sept. 26	73.53	Dec. 30	c73.62

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

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: 1950-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	186.70	Apr. 28	186.59	July 29	184.70	Oct. 27	184.33
Feb. 26	187.04	May 27	185.62	Aug. 27	184.60	Nov. 24	184.20
Mar. 27	187.31	June 24	185.08	Sept. 25	184.50	Dec. 30	183.82

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 118.03 below lsd, Sept. 25, 1952. Records available: 1947-52. Jan. 28, 105.27; Feb. 26, 104.53; Mar. 27, 104.63; Apr. 28, 106.19; Sept. 25, 118.03; Oct. 27, 113.28; Nov. 24, 111.11.

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 217.34 below lsd, Nov. 24, 1952. Records available: 1950, 1952.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
May 31, 1950	198.00	Aug. 28, 1950	200.02	July 29, 1952	208.01	Oct. 27, 1952	209.63
June 27	198.71	May 27, 1952	206.36	Aug. 27	208.80	Nov. 24	217.34
July 25	199.32	June 24	206.99	Sept. 25	209.32	Dec. 30	217.25

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 78.92 below lsd, Sept. 24, 1951. Records available: 1941-52. Jan. 28, 67.62; Mar. 27, 68.94; Apr. 28, 74.26; Oct. 27, 77.36; Nov. 24, 73.39; Dec. 30, 71.82.

10/26-9R2. H. S. Russell. Near Cuyama. Drilled unused water-table well in alluvium and older continental deposits, diameter 14 inches, depth 380 feet, cased to 338, perforations 33-54, 97-111, 118-131, 155-168, 175-212. Land-surface datum is about 2,135 feet above msl. Highest water level 21.36 below lsd, Feb. 26, 1947; lowest 44.84 below lsd, May 31, 1950. Records available: 1942, 1947-52. Jan. 28, 29.46; Feb. 26, 41.50; Mar. 27, 28.03; Apr. 28, 39.49, nearby well being pumped; Nov. 24, 41.12, nearby well being pumped; Dec. 30, 31.80.

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 32.60 below lsd, July 25, 1950. Records available: 1941-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	6.66	Apr. 28	10.68	July 29	30.31	Oct. 27	13.09
Feb. 26	5.55	May 27	16.74	Aug. 27	28.47	Nov. 24	11.13
Mar. 27	5.46	June 24	28.14	Sept. 25	18.48	Dec. 30	10.61

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 33.69 below lsd, Aug. 28, 1950. Records available: 1942, 1947-52.

Jan. 28	25.81	Mar. 27	25.82	May 27	29.68	Nov. 24	27.82
Feb. 26	25.52	Apr. 28	26.62	Oct. 27	28.95	Dec. 30	26.96

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 53.41 below lsd, Sept. 23, 1948. Records available: 1941-52.

Jan. 28	45.52	Apr. 28	44.13	July 29	48.44	Oct. 27	49.20
Feb. 26	44.98	May 27	44.87	Aug. 27	50.23	Nov. 24	48.41
Mar. 27	44.58	June 24	45.94	Sept. 25	50.20	Dec. 30	47.22

HAWAII

By K. J. Takasaki and D. A. Davis

Scope of Water-Level Program

Measurement of water levels and determination of chloride content of water in observation wells were continued in 1952 in cooperation with the Hawaii Division of Hydrography. Measurements were made in 110 wells, 59 of which were measured periodically. In addition, 726 chloride determinations were made for 205 wells. Three nonrecording gages and two recording gages were maintained. On the island of Oahu, the Honolulu Board of Water Supply made measurements in 85 wells. The Board maintained recording gages on 15 wells. Location of observation wells on the various islands are shown on figures 36 to 40.

Precipitation

Total precipitation in 1952 for the Territory as a whole was slightly below normal. The heavy rains of December 1951 continued into January 1952, but, with the exception of near-normal rainfall in March, June, and July, the rainfall for the 8-month period from February through September was substantially below normal in most of the islands. Increased rainfall in October and November tended to offset the deficiency, but low rainfall in December held the average for the Territory below norm. In the Honolulu intake area, distribution of rainfall during the year was similar to that of the Territory as a whole, except that in February precipitation was near normal.

The following table shows percentage of normal monthly rainfall in the ground-water recharge area near Honolulu during 1952. The figures were compiled by the Honolulu Board of Water Supply and are based on the records of ten stations in the recharge area. Rainfall records for the area for the 10-year period ending in 1952 are shown graphically in figure 42.

Percentage of normal rainfall in Honolulu area, 1952

Month	Percentage of normal rainfall	Month	Percentage of normal rainfall	Month	Percentage of normal rainfall
January	120	May	61	September	39
February	94	June	91	October	160
March	110	July	93	November	108
April	58	August	50	December	64
Percentage of normal					87

Pumpage

The total pumpage of ground water during 1952 in the Territory of Hawaii was approximately 197,000 million gallons or an average of about 540 million gallons a day. This is about 4,000 million gallons more than the pumpage for all the islands in 1951. All the islands except Hawaii reported some increase in pumpage over the previous year. On Oahu, the pumping rate was approximately 333 million gallons a day. The rate on Maui was 173 million gallons a day; about three-fourths of the ground water used in Maui was removed from aquifers in the Maui Isthmus. In addition to the ground water pumped, 90,587 million gallons were delivered to the Maui Isthmus in East Maui Irrigation Company ditches. The ground-water draft from Oahu and Maui Isthmus accounted for more than 85 percent of the total draft of the Territory.

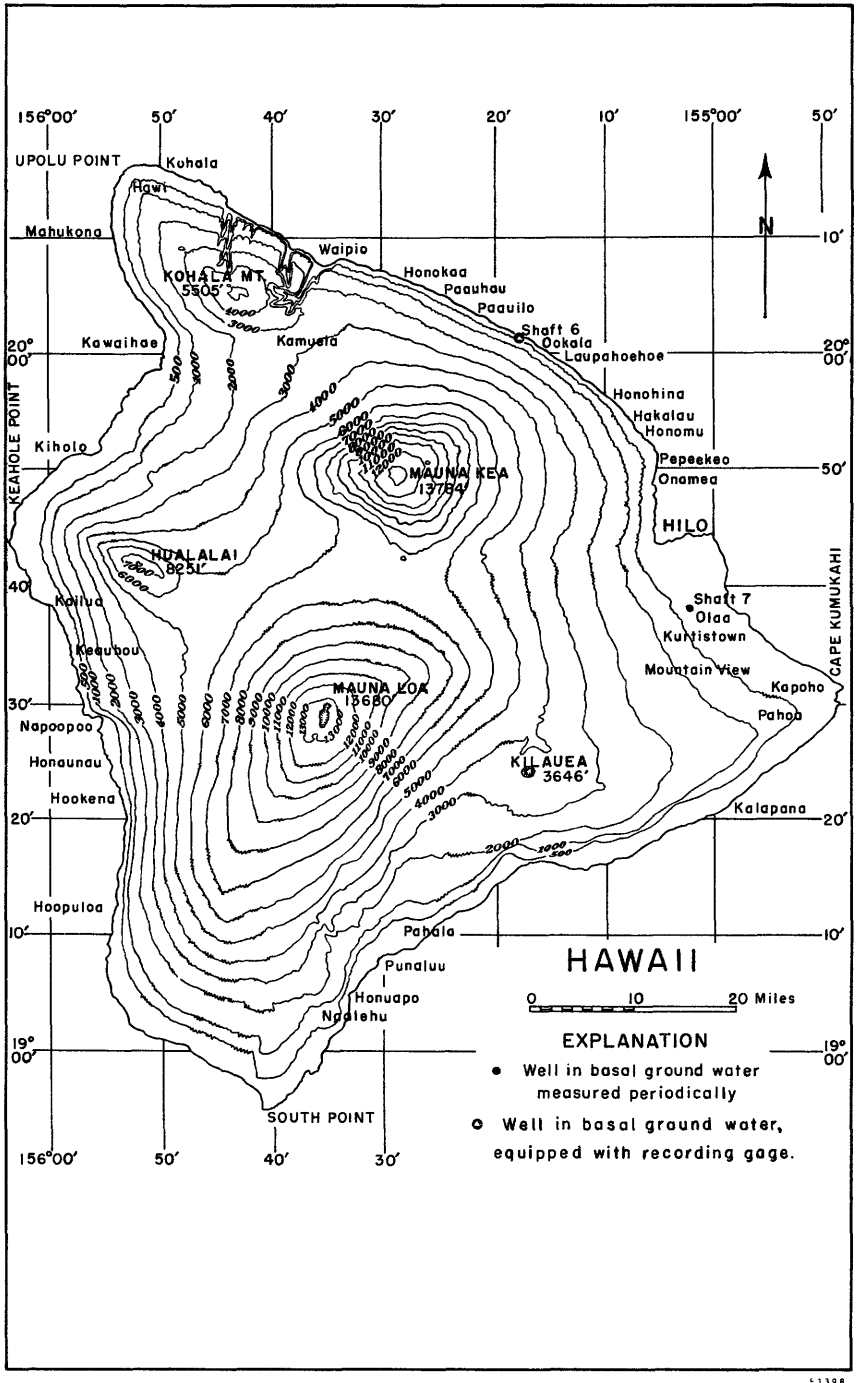


Figure 36. --Location of observation wells on Island of Hawaii, 1952.

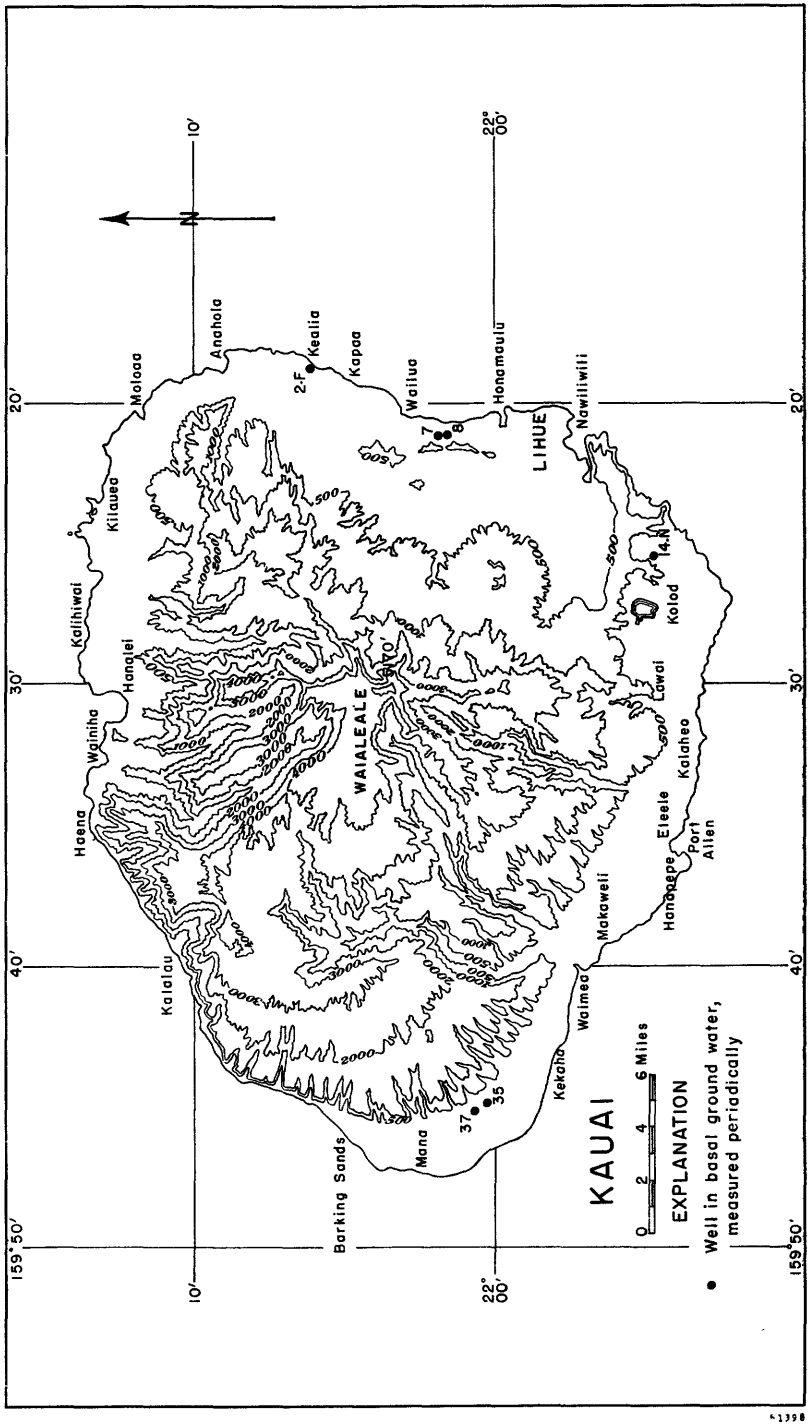


Figure 37.--Location of observation wells on Island of Kauai, 1952.

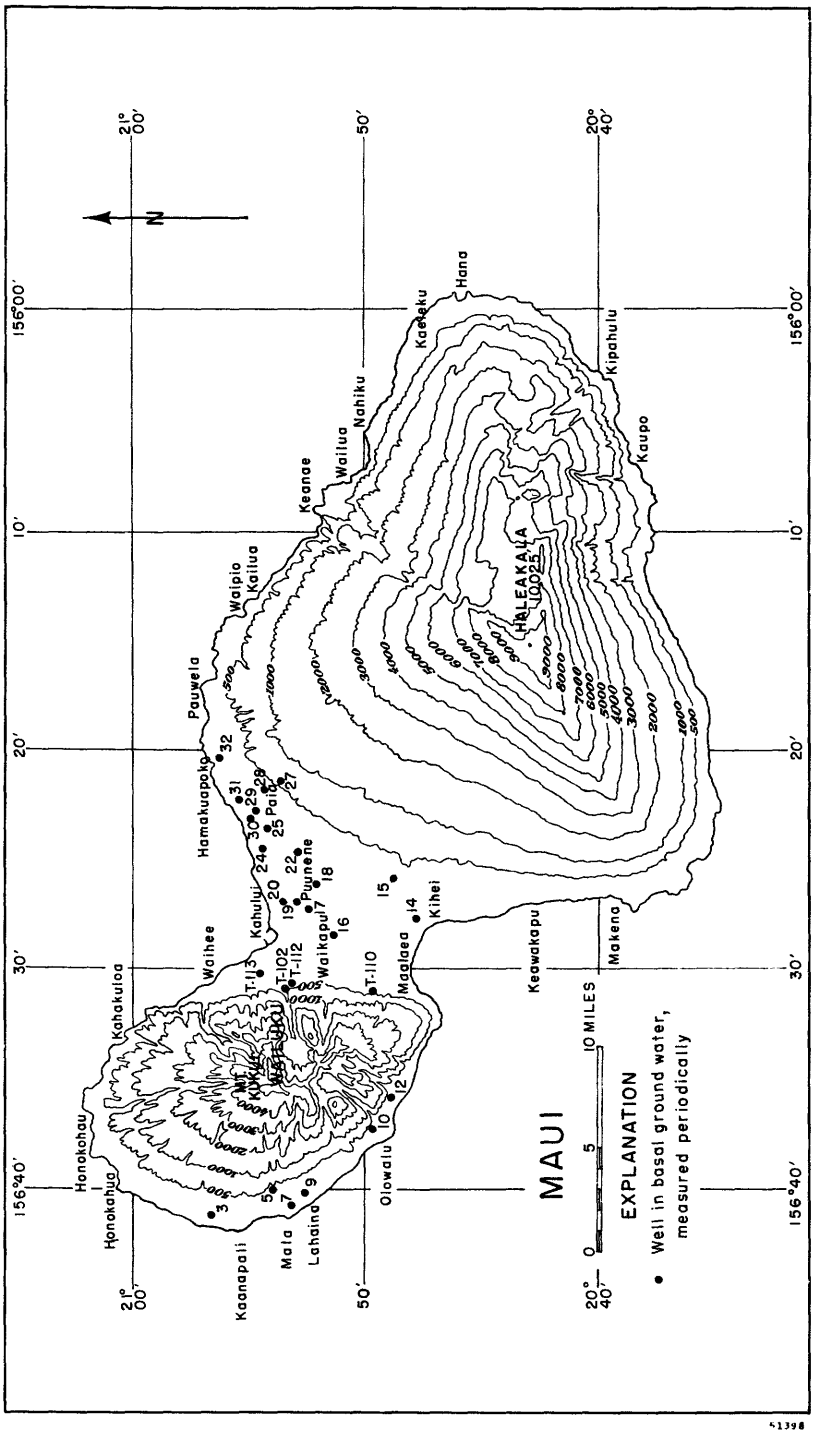
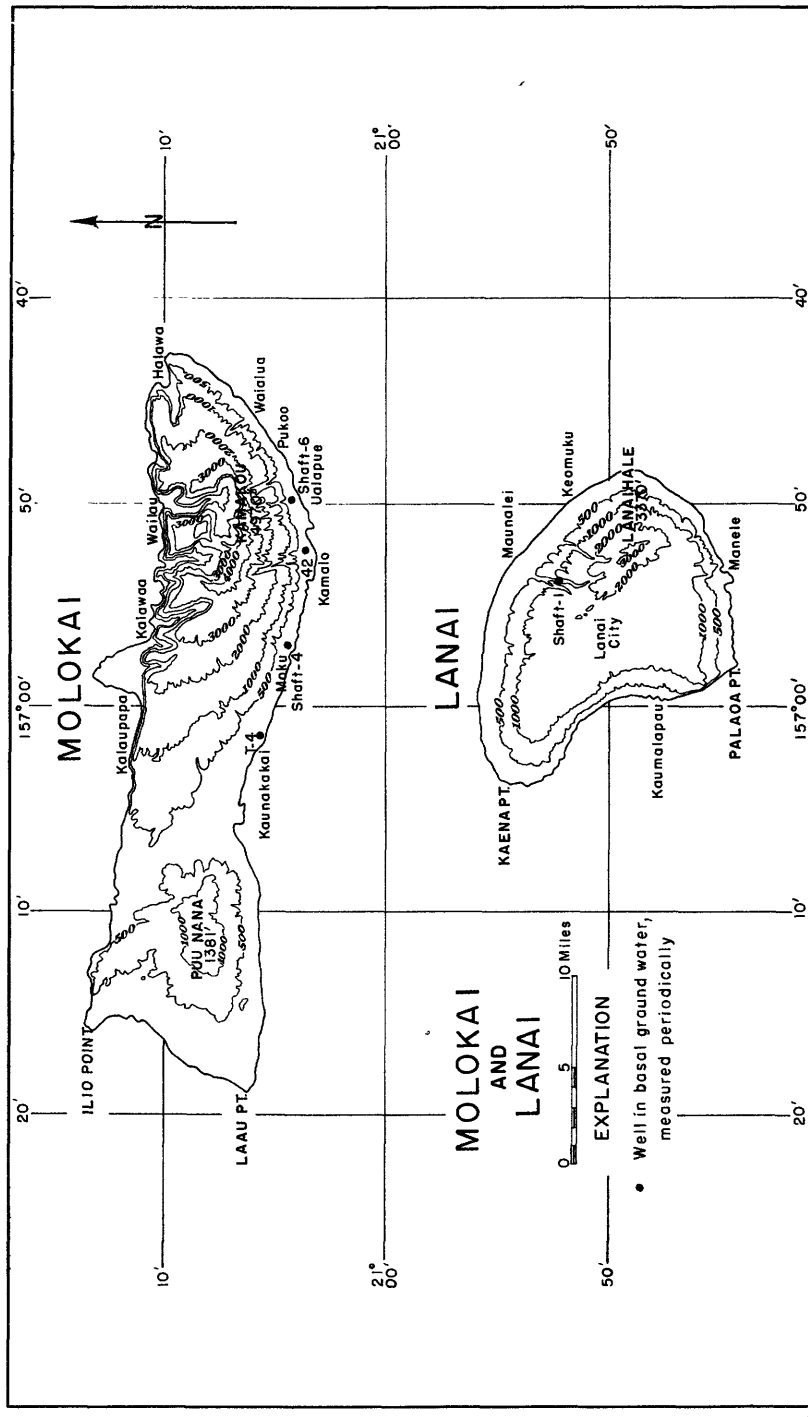


Figure 38.--Location of observation wells on Island of Maui, 1952.



51398

Figure 39. --Location of observation wells on Islands of Molokai and Lanai, 1952.

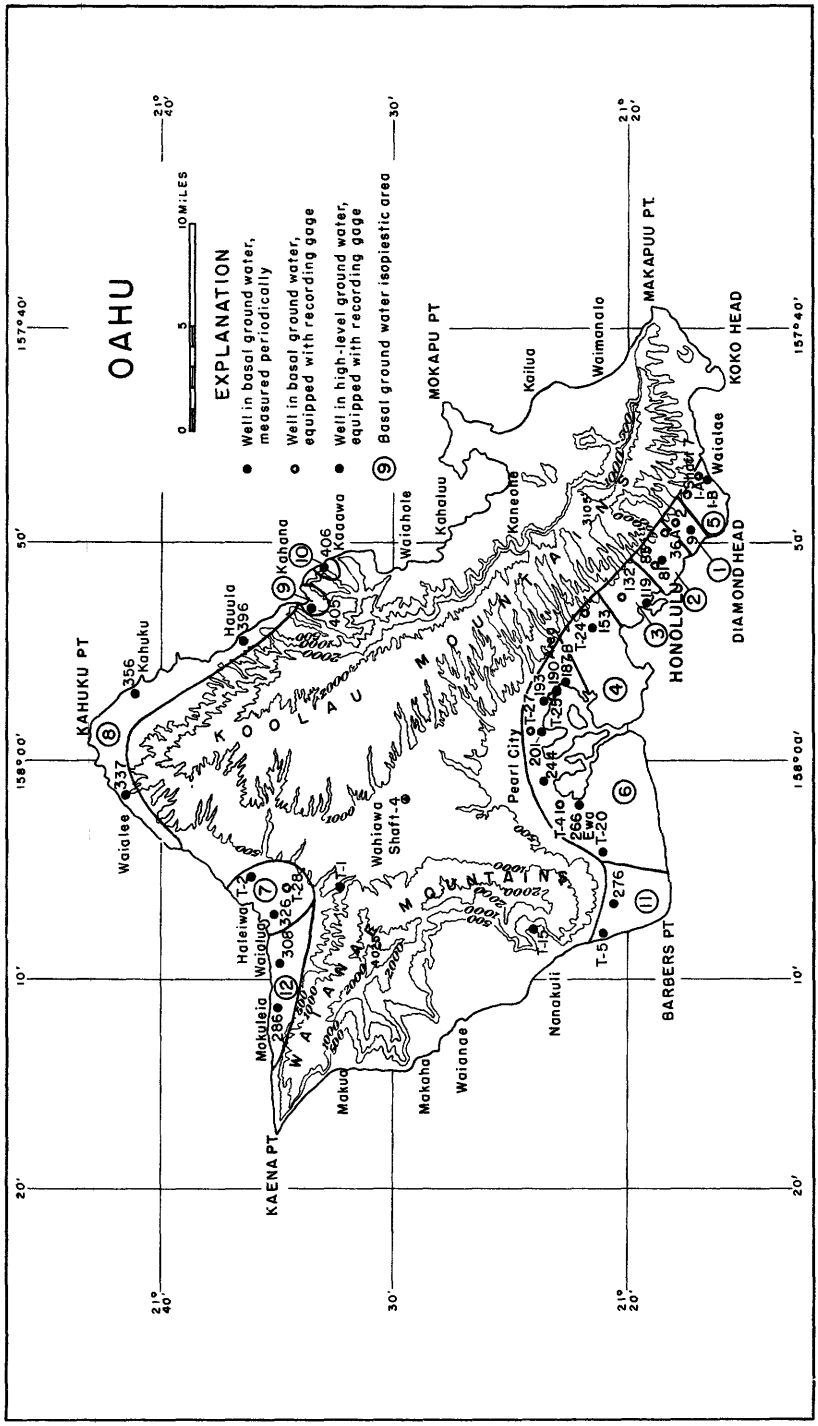


Figure 40. --Location of observation wells on Island of Oahu, 1952.

Pumpage, in millions of gallons, from wells and tunnels in the Territory of Hawaii, 1952

Island of Hawaii		
Hamakua Mill Co.		
Paauilo well (shaft 5)		774
Hawaiian Agricultural Co.		
Pahala shaft (shaft 8)		571
Hutchinson Sugar Plantation Co.		
Honuapo well (10)		e840
Kaiwiki Sugar Co.		
Domestic tunnel (shaft 6)	e71	
Cane cleaning plant tunnel (shaft 6)	453	524
Kohala Sugar Co.		
Hoea pump (shaft 2)	97	
Kohala pump (shaft 4)	1,915	
Waikane pump (shaft 1)	17	
Honokane tunnel	e1,250	
Halaula domestic well	101	3,380
Olaa Sugar Co.		
Olaa shaft (shaft 7)		828
Pepeekeo Sugar Co.		e106
Total		7,023

Island of Kauai		
County of Kauai		
Hanapepe Water Works	76	
Waimea Water Works	106	
Kekaha shaft	15	197
Kekaha Sugar Co.		
Well 9 (27)	0	
Wells K-1 to K-5 (32)	644	
Wells M-1 to M-12 (45)	1,315	
Kekaha pump	454	
Mana pump	110	
Waiawa pump	760	
Well 16 (55)	0	3,283
Lihue Plantation		
Domestic shaft	e500	
Kealia wells (2)	e150	
Hanamaulu shaft	e3	653
Olokele Sugar Co.		
Domestic shaft		e510
Total		p4,643

Island of Lanai		
Hawaiian Pineapple Co.		
Tunnel 1	99	
Shaft 2	68	
Well 1	0	
2	41	
3 (Kapano)	0	
4 (Soules Bench)	0	
5 (Waiakeakua)	121	329
Total		329

Island of Maui		
Hawaiian Commercial & Sugar Co.		
Pump 1 (14)	1,238	
2 (25)	3,340	
3A-B (15)	4,932	
4 (24)	2,409	
5 (19)	1,918	
6 (18)	5,440	
7 (16)	6,957	
8 (17)	4,456	
9 (22)	2,927	
Central Power Plant (20)	56	
Pump 11A-B (32)	50	
12 (12)	1,625	
13A-B (29)	4,046	
16A,B,D (30)	2,047	
17 (28)	2,391	
18 (27)	2,763	46,595
Pioneer Mill Co.		
Pump A (9) Lahaina	1,758	
B (8) Lahaina	1,373	
C (7) Mill	2,603	
D (3) Kaanapali	1,680	
F (2) Honokawai	1,000	
G (4) Hahakea	999	
H (3) Kaanapali	2,265	
L (6) Wahikuli	209	
M (5) Kahoma	1,732	
N (10) Olowalu	386	
O (11) Olowalu	23	
P (12) Ukumehame	229	
R Honokawai Shaft	961	q15,219
Maui Pineapple Co.		
Kahului Cannery (13)		e250
Wailuku Sugar Co.		
Wailuku shaft		1,113
Total		63,177

Island of Molokai		
County of Maui		
Conant-Kawela (shaft 4) and Kamiloloa (dug well 30)	46	
Kalae tunnel (tunnel 5)	2	
Kamalo well (dug well 42)	4	
Ualapue well (shaft 6)	14	66
California Packing Corp.		
Kualapuu (15)		36
Total		102

Island of Oahu		
Ewa Plantation Co.		
Pump 1 (268)	0	
2 (257)	1,023	
3 (264)	3,662	
4 (264)	3,448	
5 (259)	2,666	
6 (259)	3,096	
7 (263)	2,757	
8 (270)	584	
10 (276)	2,776	
11 (276)	1,727	
12 (276)	1,351	
13 (276)	15	
15 (shaft 3)	3,077	

Pumpage, in millions of gallons, from wells and tunnels in the Territory of Hawaii, 1952--Continued.

Island of Oahu--Continued.		
Ewa Plantation Co. --Continued.		
Pump 16 (shaft 3)	4,817	
20 (dug well 20)	489	
21 (dug well 21)	326	
22 (dug well 22)	250	
23 (dug well 23)	1,747	
24 (dug well 24)	509	
25 (254)	426	34,746
California Packing Corp.		
Kunia well (330-5)		11
Hawaiian Electric Co.		
Tunnel (shaft 8)	2,562	
Wells (199-1)	1,830	
Kaluaoopu Spring	2,196	6,588
Honolulu Board of Water Supply		
Kalihi station (shaft 6)	3,164	
Waialae station (shaft 7)	153	
Halawa station (shaft 12)	3,960	
Kaimuki station (7)	1,453	
Beretania station (88)	2,127	
Kalihi station (128)	1,386	12,243
Honolulu Suburban Water System		
Aiea (190-1-B)	94	
Pearl City (shaft 9)	153	
Waipahu (241)	164	
Nanakuli (dug well 16)	0	
Lualualei (shaft 2)	68	
Waialua (333)	113	
Hauula (394)	37	
Kaaawa (shaft 10)	30	
Haiku tunnel	695	
Kahaluu tunnel	769	
Luluku tunnels and springs	31	
Waimanalo		
City and County tunnel	59	
Plantation tunnel	63	
Waialee Training School		
Sunset Beach (337-1 & 2) and School Pump (337-1 & 2)	28	
Waianae		
City and County tunnel	e990	
Other tunnels	66	3,360
Kahuku Plantation Co.		
Pump 1 (353)	1,065	
2 (341)	2,820	
3 (362)	1,676	
5 (352)	1,727	
6 (362-1)	325	
7 (363)	130	
8 (357)	219	
12 (361)	122	
14 (338)	e535	
15 (348)	131	
17 (362)	129	
20 (377)	897	
23 (387)	137	
25 (373)	130	
26 (392)	84	
27 (396)	221	
Mill pump (355)	e730	11,079

Island of Oahu--Continued.		
Oahu Sugar Co.		
Waipahu Section		
Pump 1 (247)	444	
2 (249)	2,750	
3 (249)	1,895	
4 (248)	1,222	
5 (274)	3,770	
6 & 6B (239)	3,161	
7 (246)	3,013	
8 (Waikele Spring)	1,969	
9 (Waiawa Spring)	293	
Aiea Section		
Pump 2 (196)	16	
3 (186)	907	
4 (197)	3,062	
5 & 5B (189)	1,251	
6 (Kalawao Spring)	889	
16 (199-1)	(r)	
21 & 21B (shaft 13)	1,284	25,924
Private wells in Honolulu		s4,047
Territorial Hospital, Kaneohe (416)		93
U. S. Army		
Schofield (shaft 4)		1,098
U. S. Navy		
Aiea (shaft 5)	68	
Red Hill (shaft 11)	1,936	
Barber's Point (shaft 14)	1,005	
Aiea wells (187)	13	
Wahiawa Radio Station (330-2)	e50	
Pearl City wells	13	
Lualualei tunnel	133	
Waiawa shaft	3,819	7,036
Wahiawa Water Co. (330-3, 330-6)		510
Waialua Agricultural Co.		
Pump 1 (321)	659	
2 (322A to I)	2,058	
2A (322 J to N)	1,818	
3 (331)	1,822	
4 (334)	1,231	
5 (285)	1,094	
6 (298, 299, & 301)	196	
7 (324)	920	
8 (329)	173	
9 (327)	136	
10 (323)	1,288	
11 (296)	96	
12 (332)	131	
13 (328)	2,754	
15 (317)	131	
16 (316)	17	
Mill pump (319)	65	4,590
Waimano Home		
(196-1)	26	
(196-1B)	83	109
Total		121,434
Grand Total		t196,708

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 of 14,188 million gallons by Pioneer Mill Co. was not included in the 1951 water-level report.

r Pumpage from Pump 16 (199-1) included with that of Hawaiian Electric Co.

s Reported by Honolulu Board of Water Supply. Includes pumpage from wells belonging to military establishments in Honolulu.

t The grand total reported for the 1951 water-level report did not include the pumpage for Pioneer Mill Co. in Maui. With this pumpage included the grand total figure for 1951 is raised to 192,957 million gallons.

Interpretation of Water-Level Fluctuations

Early in 1952 water levels in most of the observation wells on Oahu reached their highest levels since those of 1943 which preceded the low water-level period of 1944 through 1946. The effects of the heavy rains of late 1951 and the above-normal rainfall in January of 1952 apparently accounted for the general rise. Following the peaks of the early part of the year water levels in most wells were generally lower than the levels of 1951. Except in areas 1 (St. Louis Heights), 7 (Waialua), 8 (Kahuku), and 9 (Kahana) the basal ground-water level in each area in Oahu showed a net loss during 1952. The greatest loss was in area 6 (Pearl Harbor). (See fig. 41.) The net loss in 1952 can be attributed to the below-normal rainfall for the whole year plus the short-term effects of deficient rainfall in December of 1952 opposing those of the wet month of December 1951. In spite of net losses in most areas in 1952 the slow upward trend of water levels which began in 1947 showed little indication of leveling off. The chloride content of the water in most of the wells of Oahu showed no marked change. In some wells the chloride content increased somewhat and in others there was a drop, but the general slow decrease in the rate of rise of chloride that has been observed in most areas appears to be maintained. Water levels on Maui showed little change over the previous year. The chloride content of Maui observation wells increased from the low of 1951 to about the salinity of previous years. On Molokai the water levels remained about the same. Water levels in shaft 7 in Hawaii were higher than the previous year (fig. 43). Water levels in well 35 on Kauai were slightly lower than in 1951. The chloride content of the water in Kauai observation wells remained the same.

Month of high and low heads in artesian areas and net gain or loss in static head, in feet, as shown by typical wells on the Island of Oahu, 1952

Area	Name	Well	High	Low	Net gain or loss
1	St. Louis Heights	2	December	June	+1.66
2	Makiki-Pacific Heights	36A	February	August	-.56
3	Kapalama	132	February	August	-.89
4	Moanalua	T-24	January	October	-.96
5	Wilhelmina Rise	Shaft 7	January	July	-.16
6	Pearl Harbor	201	January	June	-1.89
		244	January	September	-3.52
		266	January	July	-4.62
7	Waialua	326	January	May	+.05
8	Kahuku	356	November	May	+.11
		396	January	May	-.03
9	Kahana	405	April	September	+.10
10	Kaaawa	406	April	October	-.73
11	Gilbert	T-5	January	June	-.73
12	Mokuleia	286	October	May	-.19
		308	October	August	-.47

Lowest head in 1926, 1951, and 1952 and net change in head, 1926-52, in feet above sea level, in observation wells on Oahu

Area	Name	Well	1926	1951	1952	Net change 1926-52
1	St. Louis Heights	2	20.88	24.47	25.04	+4.16
2	Makiki-Pacific Heights	36A	j23.52	27.68	27.03	+3.51
3	Kapalama	132	24.84	26.53	25.65	+.81
4	Moanalua	T-24	j24.00	23.75	23.50	-.50
6	Pearl Harbor	201	17.09	18.10	18.15	+1.06
6	Pearl Harbor	244	17.27	20.87	18.37	+1.10
6	Pearl Harbor	266	15.75	19.42	18.25	+2.50

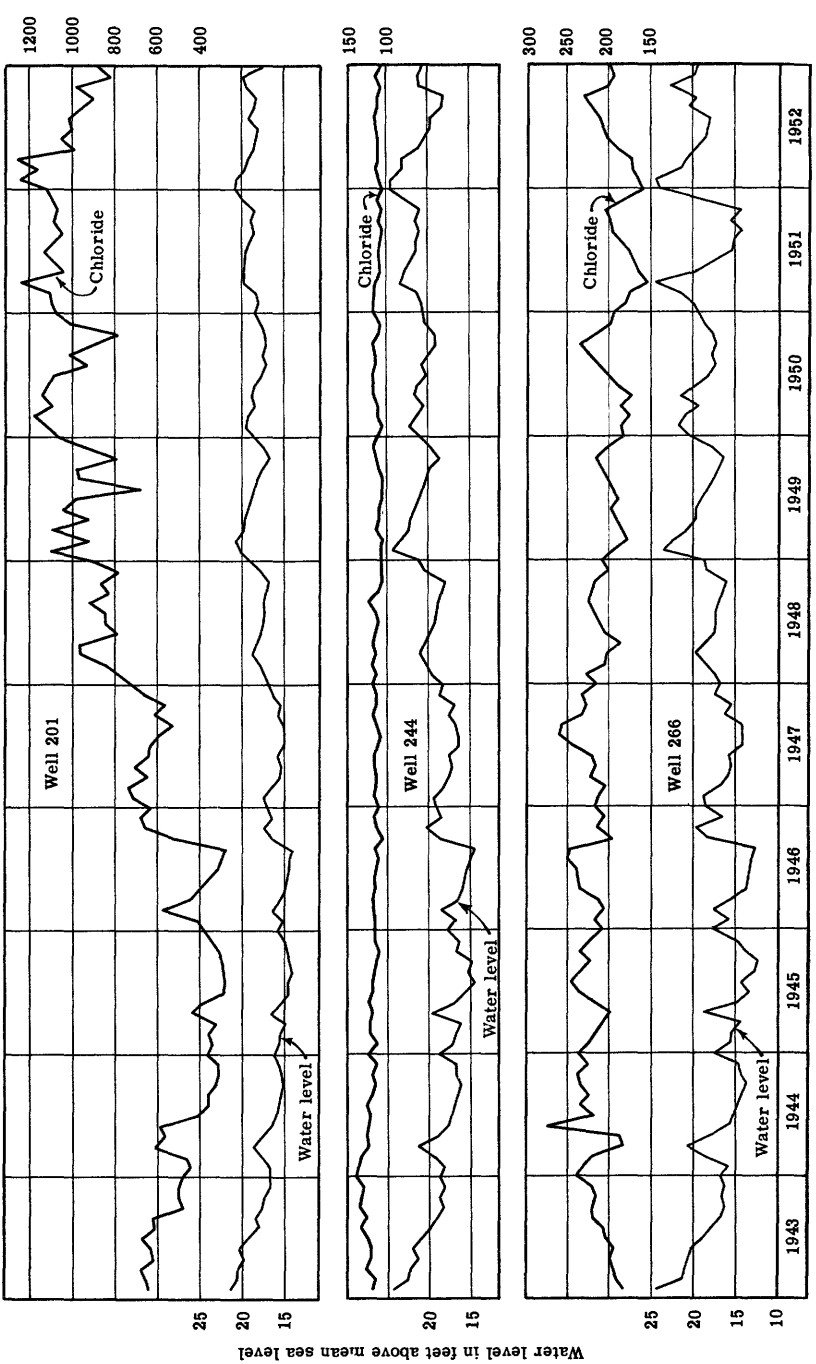


Figure 41. --Water levels and chlorides in wells 201, 244, and 266 in the Pearl Harbor area for the 10-year period, 1943-52.

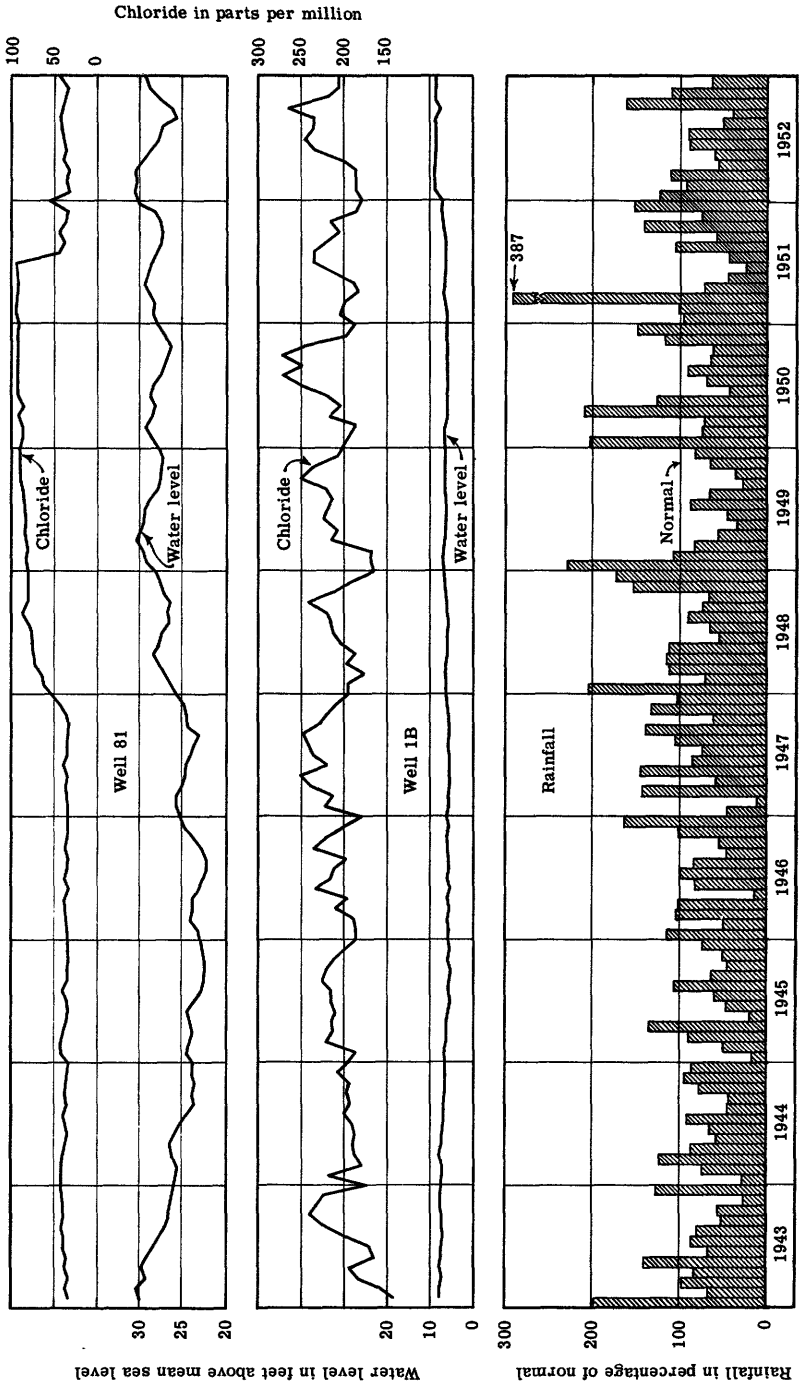


Figure 42.--Water levels and chlorides in wells 81 and 1B in Honolulu and rainfall in the Honolulu watershed area for the 10-year period, 1943-52.

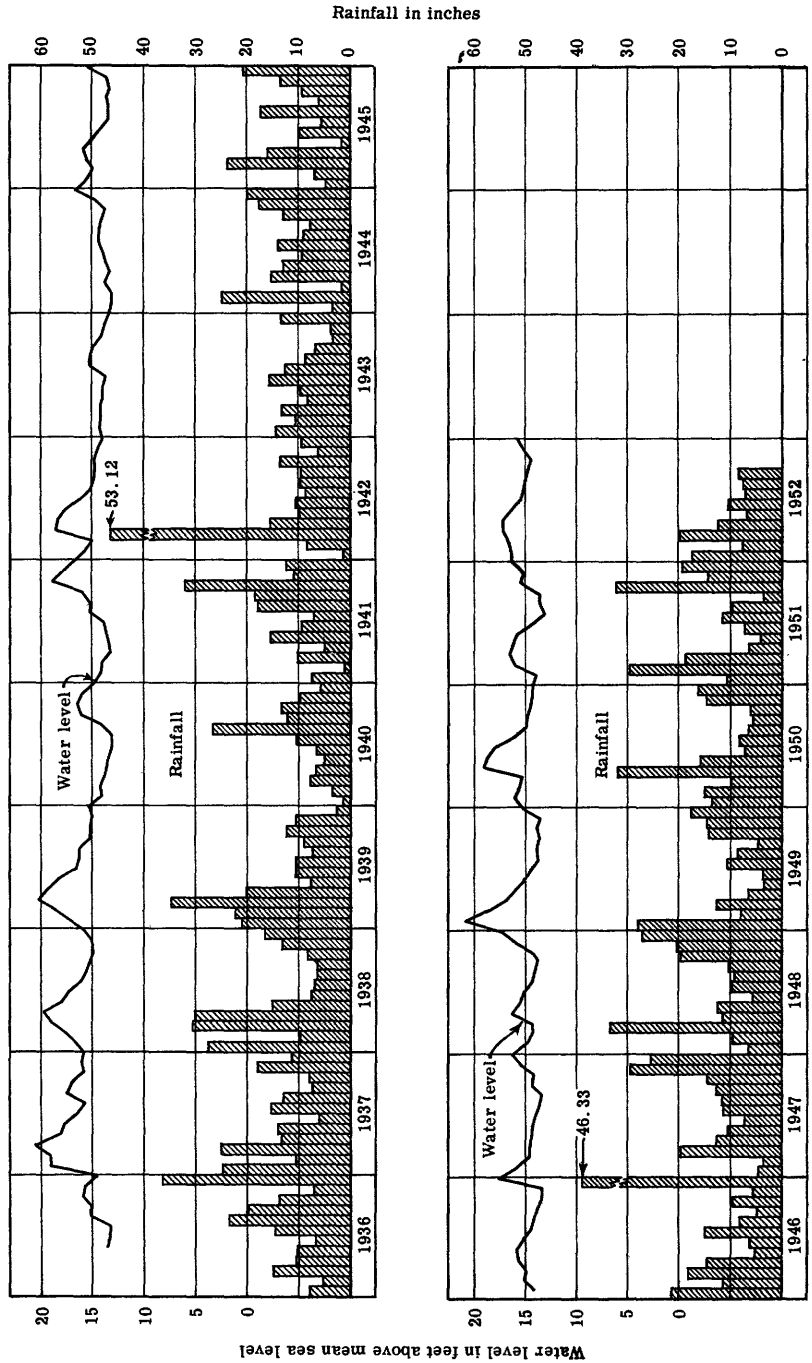


Figure 43.--Water-level fluctuations in Shaft 7 and monthly rainfall at Olaa, Hawaii, 1936-52.

Lowest head in 1926, 1951, and 1952 and net change in head, 1926-52, in feet above sea level, in observation wells on Oahu--Continued.

Area	Name	Well	1926	1951	1952	Net change 1926-52
7	Waialua	326	10.34	10.80	10.95	+0.61
8	Kahuku	356	13.05	9.59	9.41	-3.64
8	Kahuku	396	18.78	18.46	18.05	-.73
12	Mokuleia	308	17.55	18.31	18.22	+.67

j Estimated from well 83.
j Estimated from well 144.

Acknowledgments

On Kauai the records for wells 35 and 37 were furnished by the Kekaha Sugar Company. For the Island of Hawaii, records for shaft 6 were furnished by the Kaiwiki Sugar Company and for shaft 7 by the Olaa Sugar Company. The Wailuku Sugar Company supplied the water levels and chloride data for Maui test holes 102, 110, 112, and 113. For Oahu, data for wells 1A, 2, 36A, 83, and 132, shaft 7, and test holes 24, 25, 27, 28, and 41 were obtained from the records of the Honolulu Board of Water Supply. Measurements on Oahu test holes 1 and 2 were made by the Waialua Sugar Company.

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. At Ookala. Lat. 20°01'05", long. 155°17'15". Dug domestic and irrigation water-table well in basalt of Hamakua volcanic series, size 6½ 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: 1937-49, 1952.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 23, 1950	5.57	31	July 3, 1950	5.32	24
31	5.32	31	10	4.99	19
Feb. 9	4.91	36	15	5.41	25
14	5.16	31	24	5.07	23
21	5.24	41	31	5.57	21
Mar. 1	4.82	44	Aug. 9	5.16	26
7	4.99	26	14	5.57	22
13	4.41	21	21	5.16	20
20	4.99	26	29	5.57	22
27	5.07	22	Sept. 5	5.41	17
Apr. 3	5.07	10	11	5.57	22
10	4.99	15	25	4.99	21
17	4.99	15	Oct. 2	5.41	25
24	4.99	18	9	5.57	26
May 1	5.24	17	16	5.41	26
8	4.82	27	23	5.57	26
22	5.24	29	30	5.66	24
29	5.24	26	Nov. 6	5.41	27
June 5	5.24	21	14	5.82	25
12	5.16	19	Dec. 1	5.99	9
19	5.16	26	5	5.82	9
26	5.07	24	12	6.07	9

Shaft 6--Continued.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Dec. 18, 1950	5.74	9	Aug. 6, 1951	5.24	41
26	5.91	9	13	4.91	30
Jan. 2, 1951	5.91	8	20	5.49	37
11	5.66	13	27	5.57	40
15	5.49	18	Sept. 4	5.82	26
22	5.74	20	10	5.16	26
29	5.74	14	18	5.91	37
Feb. 5	5.91	18	25	5.16	37
12	5.49	20	Oct. 1	5.66	41
19	5.82	17	8	4.74	38
26	5.82	15	15	5.41	35
Mar. 6	5.82	18	22	5.32	20
12	5.57	20	29	5.66	15
17	5.66	31	Nov. 5	5.32	14
26	5.91	28	13	5.82	14
Apr. 2	5.57	25	20	5.57	15
9	5.49	22	26	5.66	14
16	5.57	21	Dec. 3	5.41	14
23	5.49	35	10	5.91	13
30	5.66	25	Jan. 2, 1952	5.57	30
May 7	5.66	33	7	5.41	31
15	5.24	27	14	5.32	37
22	5.07	33	21	5.66	29
28	5.07	25	28	5.49	40
June 4	5.07	27	Feb. 4	5.16	26
12	5.16	30	11	5.49	26
18	5.16	35	18	5.66	31
25	5.41	29	25	4.99	18
July 2	5.24	36	Mar. 3	5.57	33
9	5.49	32	10	5.24	31
16	5.16	38	17	5.24	24
23	5.49	40	24	5.49	33
30	5.16	39			

Daily mean water level, above msl, from recorder graph, 1952

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	....	....	4.90	5.32	5.42	5.24	5.36	5.81	5.66	5.50	5.51
2	....	....	....	4.92	5.17	5.09	5.25	5.37	e5.84	5.69	5.84	5.43
3	....	....	....	4.95	5.14	5.00	5.31	5.55	5.91	5.74	5.42	5.39
4	....	....	....	4.90	5.38	5.02	5.43	5.02	5.85	5.74	5.30	5.35
5	....	....	....	5.14	5.18	5.25	5.53	4.83	5.84	5.70	5.39	5.24
6	....	....	....	5.19	5.30	5.22	5.50	4.86	5.96	5.69	5.34	5.39
7	....	....	....	5.04	5.18	5.22	5.22	4.90	5.96	5.51	5.36	5.61
8	....	....	....	5.05	5.09	5.48	5.10	5.00	5.97	5.44	5.30	5.40
9	....	....	....	5.03	5.14	5.37	5.00	4.91	e5.69	5.44	5.57	5.30
10	....	....	....	5.03	5.14	5.29	4.94	5.22	5.59	5.37	5.30	5.35
11	....	....	....	5.30	5.40	5.31	4.99	5.32	5.56	5.40	5.23	5.32
12	....	....	....	5.32	5.19	5.32	5.15	5.32	5.55	5.70	5.24	5.30
13	....	....	....	5.37	5.14	5.33	5.30	5.33	5.53	5.37	5.29	5.38
14	....	....	....	5.35	5.19	5.29	5.29	5.27	5.54	5.14	5.29	5.65
15	....	....	....	5.18	5.15	5.51	5.35	5.34	5.56	5.12	5.42	5.40
16	....	....	....	5.07	5.09	5.32	5.24	5.30	5.59	5.14	5.62	5.15
17	....	....	....	5.09	5.14	5.24	5.21	5.51	5.64	5.20	5.46	5.19
18	....	....	....	5.12	5.37	5.26	5.26	5.31	5.70	5.34	5.44	5.08
19	....	....	....	5.15	5.20	5.28	5.17	5.21	e5.74	5.59	5.40	5.04
20	....	....	....	5.45	5.17	5.29	5.41	5.25	5.74	5.42	5.42	5.36
21	....	....	....	5.20	5.12	5.30	5.39	5.29	5.72	5.39	5.49	5.50
22	....	....	....	5.15	5.19	5.44	5.36	5.32	e5.94	5.29	5.58	5.38
23	....	....	....	5.17	5.10	5.35	5.31	5.34	5.99	5.31	5.80	5.42
24	....	....	....	5.13	5.09	5.28	5.29	5.54	5.94	5.24	5.49	5.48
25	....	....	....	5.14	5.32	5.29	5.27	5.44	5.93	5.27	5.46	5.53
26	....	....	....	5.09	5.14	5.29	5.25	5.39	5.94	5.53	5.39	5.44
27	....	....	....	e5.34	5.09	5.25	5.48	5.60	5.94	5.24	5.36	5.39
28	....	....	....	e5.24	5.04	5.30	5.40	5.66	5.94	5.23	5.36	5.40
29	....	....	5.24	5.19	5.03	5.55	5.32	5.66	5.68	5.26	5.58	5.37
30	....		5.22	5.09	5.09	5.35	5.32	5.74	5.64	5.34	5.73	5.37
31	....		4.94		5.15		5.34	5.80		5.39		5.39

e Estimated.

Shaft 7. Olaa Sugar Co. At Olaa. Lat. 19°37'50", long. 155°02'00". Dug domestic and irrigation 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 12.61 above msl, July 13, 1945. Records available: 1936-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 5	17.86	Apr. 5	17.28	July 5	15.36	Oct. 4	14.57
12	17.36	12	17.28	12	15.19	11	14.27
19	16.90	19	17.19	19	15.32	18	14.36
26	16.35	26	17.06	26	15.09	25	14.40
Feb. 2	17.36	May 3	16.77	Aug. 2	15.03	Nov. 1	14.28
9	16.65	10	16.61	9	15.00	8	14.36
16	16.61	17	16.68	16	15.07	15	14.36
23	16.54	24	16.70	23	14.90	22	14.61
Mar. 1	16.61	31	16.19	30	14.90	29	15.11
8	16.44	June 7	15.99	Sept. 6	14.81	Dec. 6	15.28
15	16.38	14	15.78	13	14.78	13	15.44
22	16.86	21	15.69	20	14.81	20	15.84
29	17.01	28	15.36	27	14.69	27	15.61

Island of Kauai

2F. Lihue Plantation Co., Ltd. At Kealia. Lat. 22°06'05", long. 159°18'40". Drilled domestic and irrigation artesian 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: 1937-52. Chloride in ppm: Feb. 9, 41; Apr. 12, 40; Aug. 22, 46.

7. Lihue Plantation Co., Ltd. At Wailua. Lat. 22°01'30", long. 159°20'55". Drilled unused artesian well in basalt, diameter 8 inches, depth 240 feet, cased to 60. Land-surface datum is 12 feet above msl. Records available: 1937-52. Chloride in ppm: Jan. 30, 157; Apr. 12, 164; Aug. 22, 163.

8. Lihue Plantation Co., Ltd. At Wailua. Lat. 22°01'25", long. 159°20'50". Drilled unused 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: 1937-52. Chloride in ppm: Jan. 30, 8.93, 120; Apr. 12, 9.00, 121.

14N. Grove Farm Co., Ltd. In Mahaulepu. Lat. 20°54'45", long. 159°25'20". Drilled unused 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. No measurement made in 1952.

35. Kekaha Sugar Co. Near Kekaha. Lat. 22°00'10", long. 159°44'50". Drilled irrigation artesian 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: 1937-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan.	10.56	204	July	10.38	212
Feb.	10.39	210	Aug.	10.39	231
Mar.	10.49	255	Sept.	10.39	255
Apr.	10.40	237	Oct.	10.36	241
May	10.47	224	Nov.	10.32	283
June	10.37	232	Dec.	10.35	241

37. Kekaha Sugar Co. Near Kekaha. Lat. 22°00'45", long. 159°45'20". Drilled irrigation artesian 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.

Jan.	10.83	339	July	10.26	278
Feb.	10.75	283	Aug.	10.39	287
Mar.	10.80	318	Sept.	9.96	310
Apr.	10.31	376	Oct.	9.75	324
May	10.35	307	Nov.	9.70	335
June	10.19	287	Dec.	9.76	277

Island of Lanai

Shaft 1. Hawaiian Pineapple Co. In Maunalei Canyon. Lat. 20°52'45", long. 156°53'45". Dug domestic and irrigation 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: 1936-50. No measurement made in 1952.

Island of Maui

T-102. Wailuku Sugar Co. Lat. 20°53'09", long. 156°31'27". Drilled observation 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 19.0 above msl, Oct. 15, 1948. Records available: 1940-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 23	25.75	23	July 23	25.8	28
Feb. 21	26.1	19	Aug. 21	27.5	26
Mar. 19	26.3	27	Sept. 18	25.0	27
Apr. 17	26.1	26	Oct. 16	22.5	24
May 15	23.9	24	Nov. 20	26.0	24
June 25	25.1	24	Dec. 17	25.6	28

T-110. Wailuku Sugar Co. Near Puu Hele. Lat. 20°49'20", long. 156°31'01". Drilled observation 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 5.2 above msl, Nov. 19, 1942. Records available: 1939-52.

Jan. 23	6.0	223	July 23	5.6	227
Feb. 21	5.9	220	Aug. 21	5.5	222
Mar. 19	5.8	220	Sept. 18	5.6	201
Apr. 17	5.7	221	Oct. 16	5.6	212
May 15	5.6	219	Nov. 20	5.6	216
June 25	5.5	219	Dec. 17	5.6	227

T-112. Wailuku Sugar Co. At Wailuku. Lat. 20°53'07", long. 156°30'47". Drilled observation water-table well in basalt of Wailuku volcanic series, diameter $1\frac{1}{2}$ inches, depth 477 feet. Land-surface datum is 457.07 feet above msl. Highest water level 31.55 above msl, Oct. 16, 1947; lowest 19.6 above msl, Oct. 15, 1948. Records available: 1946-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 23	25.20	Apr. 17	a25.00	July 23	a24.75	Oct. 16	a20.6
Feb. 21	25.80	May 15	a22.00	Aug. 21	a27.5	Nov. 20	26.1
Mar. 19	a25.35	June 25	a23.60	Sept. 18	a23.8	Dec. 17	a24.3

a Pumping.

T-113. Wailuku Sugar Co. At Wailuku Mill. Lat. 20°53'55", long. 156°30'05". Drilled observation artesian well in basalt, diameter $1\frac{1}{2}$ 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 16.6 above msl, Oct. 15, 1948. Records available: 1946-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 23	18.5	112	July 23	17.9	110
Feb. 21	18.7	107	Aug. 21	18.4	107
Mar. 19	18.3	109	Sept. 18	18.5	114
Apr. 17	18.6	110	Oct. 16	18.1	112
May 15	18.2	107	Nov. 20	18.7	106
June 25	17.9	107	Dec. 17	18.2	112

Shaft 3. Pioneer Mill Co. Ltd. At Kaanapali. Lat. 20°56'30", long. 156°41'30". Dug irrigation 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: 1937-52. Chloride in ppm: Dec. 31, 1951, 2.3, 721; Dec. 31, 1952, 1.8, 748.

Shaft 5. Pioneer Mill Co. Ltd. At Kahoma. Lat. 20°53'50", long. 156°40'00". Dug irrigation 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: 1937-52. Chloride in ppm: Dec. 31, 1951, 2.4, 369; Dec. 31, 1952, 2.5, 331.

Shaft 7. Pioneer Mill Co. Ltd. At plantation mill in Lahaina. Lat. 20°53'00", long. 156°40'40". Dug irrigation 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 3.00 above msl, Dec. 31, 1938. Records available: 1937-52. Chloride in ppm: Dec. 31, 1951, 3.0, 912; Dec. 31, 1952, 3.0, 1139.

Shaft 9. Pioneer Mill Co. Ltd. At Lahaina. Lat. 20°52'25", long. 156°40'15". Dug irrigation 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 1.7 above msl, Dec. 31, 1952. Records available: 1937-52. Chloride in ppm: Dec. 31, 1951, 2.0, 499; Dec. 31, 1952, 1.7, 481.

Shaft 10. Pioneer Mill Co. Ltd. At Olowalu. Lat. 20°49'30", long. 136°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 3.18 above msl, Dec. 31, 1938. Records available: 1937-52. Chloride in ppm: Dec. 31, 1951, 3.6, 243; Dec. 31, 1952, 3.8, 266.

Shaft 12. Pioneer Mill Co. Ltd. At 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: 1937-52. Chloride in ppm: Dec. 31, 1951, 6.1, 373; Dec. 31, 1952, 6.2, 371.

Island of Molokai

T-4. County of Maui. In Kaunakakai. Lat. 21°05'42", long. 157°05'20". Drilled observation 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: 1947-52. Jan. 23, 2.65; Feb. 26, 2.64; Apr. 17, 2.48; June 10, 2.39; Aug. 14, 2.58; Oct. 17, 2.62; Dec. 12, 2.56.

Shaft 4. Molokai Ranch Co. Mouth of Kawela Gulch. Lat. 21°04'20", long. 157°57'00". Dug public-supply 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. (To previous water levels: subtract 1.40 feet, June 8, 1947 to Mar. 13, 1950; add 0.39 feet, May 7, 1950 to Dec. 5, 1950.) Highest water level 2.57 above msl, Dec. 19, 1947; lowest 1.77 above msl, Aug. 26, 1948. Records available: 1947-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 26	a2.26	Aug. 15	a2.00	Aug. 21	a1.89	Sept. 27	a2.03
Apr. 17	1.93	18	a1.91	23	a1.94	Dec. 9	2.41
June 10	1.95	19	2.08	28	a1.97	12	2.41
Aug. 14	2.09	20	a1.91				

a Pumping.

Shaft 6. County of Maui. At Ualapue. Lat. 21°04'00", long. 156°50'00". Dug public-supply 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: 1938-52.

Feb. 26	5.39	Apr. 17	5.23	Aug. 14	5.21	Oct. 12	5.14
Mar. 5	5.34	May 14	5.19	15	5.16	17	5.23
12	5.34	15	5.18	18	a5.05	Dec. 9	5.33
20	5.39	20	5.12	22	5.14	19	5.33
Apr. 1	5.32	June 10	5.05	26	5.16	26	5.33
7	5.31	24	5.10	Sept. 12	a5.1		

a Pumping.

42. County of Maui. At Kamalo. Lat. 21°03'30", long. 156°52'25". Dug public-supply 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: 1948-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 26	a3.63	Aug. 14	4.66	Oct. 12	4.60	Dec. 9	5.00
Apr. 17	4.74	15	4.60	17	4.78	12	5.00
June 10	4.54	22	a3.90				

a Pumping.

Island of Oahu

1A. B. P. Bishop Estate. At Waialae Golf Links. Lat. 21°16'45", long. 157°46'45". Drilled unused artesian 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, 1947-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.41	e8.42	8.46	8.37	8.20	e8.17	8.08	8.15	8.24	8.18	8.27	e8.30
2	8.40	e8.41	8.47	8.35	8.20	e8.17	8.07	8.18	8.20	8.19	8.27	e8.30
3	8.39	e8.40	8.45	8.35	8.21	e8.16	8.06	8.20	8.20	8.18	8.26	e8.30
4	8.37	e8.39	8.44	8.34	8.24	e8.16	8.08	8.18	8.21	8.19	8.27	e8.30
5	8.37	e8.38	8.42	8.33	8.19	e8.15	8.08	8.19	8.22	8.20	8.27	8.30
6	8.37	e8.37	8.42	8.35	8.10	e8.15	8.09	8.19	8.22	8.18	8.29	8.29
7	8.37	8.37	8.42	8.32	8.22	e8.14	8.09	8.17	8.24	8.18	8.30	8.32
8	8.36	8.37	8.42	8.31	8.18	e8.14	8.08	8.18	8.24	8.18	8.29	8.30
9	8.37	8.37	8.44	8.29	8.19	e8.13	8.08	8.19	8.23	8.19	8.29	8.29
10	8.36	8.38	8.43	8.29	8.21	e8.13	8.09	8.20	8.21	8.20	8.27	8.29
11	8.34	8.38	8.43	8.28	8.25	e8.12	8.10	8.18	8.21	8.21	8.27	8.30
12	8.34	8.40	8.42	e8.27	8.24	e8.12	8.11	8.18	8.20	8.23	8.27	8.30
13	8.36	8.40	8.43	e8.27	8.23	e8.11	8.13	8.17	8.20	8.22	8.27	8.29
14	8.36	8.42	8.43	e8.26	8.24	e8.11	8.12	8.18	8.21	8.22	8.27	8.30
15	8.36	8.42	8.45	e8.26	8.23	e8.10	8.17	8.19	8.19	8.25	8.27	8.30
16	8.38	8.42	8.46	e8.25	8.24	e8.10	8.12	8.20	8.20	8.21	8.29	8.30
17	8.41	8.43	8.45	e8.25	8.23	e8.09	8.11	8.21	8.20	8.23	8.28	8.39
18	8.43	8.44	8.45	e8.24	8.24	e8.09	8.11	8.22	8.18	8.22	8.29	8.30
19	8.47	8.44	8.44	e8.24	8.23	e8.08	8.13	8.21	8.17	8.23	8.29	8.32
20	8.52	8.44	8.44	e8.23	8.23	8.08	8.15	8.19	8.18	8.23	8.33	8.32
21	8.53	8.43	e8.44	e8.23	8.23	8.09	8.15	8.20	8.18	8.24	8.34	8.31
22	8.52	8.44	e8.44	e8.22	8.22	8.12	8.15	e8.20	8.17	8.24	8.33	8.29
23	8.48	8.43	e8.43	e8.22	8.23	8.10	8.15	e8.19	8.17	8.25	8.32	8.29
24	e8.48	8.44	e8.43	e8.21	8.23	8.11	8.15	e8.19	8.15	8.26	8.31	8.31
25	e8.47	8.45	e8.43	8.21	8.25	8.11	8.13	e8.18	8.15	8.24	8.30	8.30
26	e8.46	8.45	e8.42	8.21	8.23	8.10	8.13	e8.18	8.15	8.25	e8.30	e8.30
27	e8.45	8.47	e8.42	8.24	8.20	8.10	8.16	e8.17	8.16	8.22	e8.30	e8.30
28	e8.44	8.46	8.42	8.21	e8.19	8.10	8.15	e8.17	8.15	8.22	e8.30	e8.30
29	e8.43	8.46	8.40	8.22	e8.19	8.11	8.15	8.17	8.15	8.24	e8.30	e8.30
30	e8.42		8.41	8.21	e8.18	8.09	8.16	8.18	8.16	8.26	e8.30	e8.30
31	e8.42		8.38		e8.18		8.15	8.23		8.25		e8.30

e Estimated.

1B. B. P. Bishop Estate. At Waialae Golf Links. Lat. 21°16'45", long. 157°46'50". Drilled domestic and irrigation artesian 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, 1936-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Feb. 1	8.38	185	July 29	8.05	235
27	8.44	185	Aug. 26	8.18	225
Mar. 25	8.40	185	Sept. 29	7.84	265
Apr. 23	8.20	200	Oct. 29	8.34	215
May 31	8.11	233	Nov. 25	8.27	205
June 26	8.07	246	Dec. 23	8.27	205

2. B. P. Bishop Estate. Kalei Road. Lat. 21°17'50", long. 157°48'55". Drilled unused artesian 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, 1929-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.32	26.49	26.85	26.12	e25.72	25.27	25.29	25.57	e25.19	25.43	e26.62	e27.55
2	26.34	26.49	26.87	26.11	e25.71	25.25	25.21	25.57	e25.19	25.58	e26.66	e27.57
3	26.33	26.49	26.89	26.03	e25.70	25.19	25.22	25.60	e25.18	25.60	e26.70	e27.59
4	26.32	26.50	26.90	26.03	e25.69	25.14	25.25	25.64	25.18	25.63	e26.74	27.60
5	26.30	26.47	26.94	26.04	e25.68	25.12	25.31	25.57	25.14	25.71	e26.78	27.70
6	26.27	26.41	26.94	26.06	e25.67	25.11	25.35	25.55	25.14	25.73	26.82	27.74
7	26.28	26.35	26.88	26.05	e25.65	25.12	25.37	25.53	25.16	25.69	26.87	27.76
8	26.23	26.33	26.82	26.05	e25.63	25.17	25.30	25.54	25.23	25.67	26.85	27.77
9	26.38	26.30	26.81	e26.00	e25.61	25.20	e25.34	25.53	25.21	25.67	26.87	27.77
10	26.40	26.34	26.86	e25.95	e25.59	25.19	e25.38	25.63	25.24	25.71	26.90	27.80
11	26.40	26.39	26.82	e25.90	e25.57	25.14	e25.42	25.65	25.25	25.84	26.95	27.85
12	26.40	26.41	26.73	e25.85	e25.55	25.11	e25.46	25.55	25.25	25.80	e26.95	27.88
13	26.41	26.50	26.68	e25.80	e25.53	25.09	e25.50	25.50	25.23	25.84	26.95	27.87
14	26.45	26.52	26.69	e25.75	25.51	25.04	e25.54	25.42	25.25	25.81	26.98	27.86
15	26.45	26.51	26.68	e25.70	25.49	25.07	e25.59	25.38	25.35	25.84	26.97	27.88
16	26.43	26.54	26.68	e25.65	25.46	25.12	25.65	25.34	25.35	25.98	27.09	27.86
17	26.44	26.58	26.70	25.60	25.40	25.09	25.72	25.35	25.38	26.09	27.15	27.87
18	26.46	26.62	26.62	25.64	25.42	25.08	e25.69	25.37	25.39	26.13	27.08	27.88
19	26.53	26.62	26.56	25.64	25.49	25.09	e25.65	25.26	25.40	26.16	27.27	27.93
20	26.63	26.71	26.52	25.68	25.48	25.09	e25.61	25.23	25.38	26.23	27.36	27.95
21	26.66	26.74	26.48	25.72	25.48	25.17	e25.57	25.15	25.40	26.27	27.35	27.95
22	26.69	26.75	26.46	25.71	25.47	25.27	e25.53	25.11	25.42	26.30	e27.37	27.95
23	26.72	26.72	26.44	25.66	25.49	25.32	e25.49	25.13	25.38	26.32	e27.39	27.97
24	26.72	26.73	26.41	25.63	25.47	25.29	25.45	25.20	25.35	26.34	e27.41	27.98
25	26.74	26.76	26.36	25.63	25.44	25.28	25.40	25.23	25.33	26.38	e27.43	28.01
26	26.70	26.74	26.34	25.64	25.43	25.20	25.45	25.24	25.38	26.39	e27.45	28.03
27	26.70	26.77	26.34	25.68	25.33	25.18	25.60	25.27	25.38	26.44	e27.47	28.00
28	26.71	26.78	26.31	25.72	25.23	25.27	25.60	25.21	25.41	26.46	e27.49	28.01
29	26.66	26.81	26.18	25.69	25.24	25.36	25.58	25.20	25.40	e26.50	e27.51	28.00
30	26.59		26.17	25.73	25.26	25.39	25.61	e25.20	25.36	e26.54	e27.53	28.02
31	26.52		26.15		25.24		25.60	e25.20		e26.58		27.98

e Estimated.

9. J. J. Gouveia. Kapahulu Ave. and Olu St. Lat. 21°17'10", long. 157°49'00". Drilled industrial artesian 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, 1923-52

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 31	26.47	60	July 29	25.77	64
Feb. 28	26.77	62	Aug. 26	24.27	63
Mar. 24	26.47	62	Sept. 29	24.47	62
Apr. 22	25.81	62	Oct. 29	25.47	61
May 31	25.07	61	Nov. 25	28.43	61
June 26	24.87	63	Dec. 22	28.17	60

36A. Honolulu Board of Water Supply. Wilder Ave. and Clement St. Lat. 21°18'10", long. 157°49'45". Drilled unused artesian well in basalt of Koolau volcanic series, diameter 12 inches, depth 395 feet. Land-surface datum is 43 feet above msl. Replaced by well 83 as an observation well. Highest water level 33.35 above msl, Mar. 11, 1938; lowest 22.41 above msl, Oct. 13, 1945. Records available: 1924, 1929-32, 1934, 1949-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.21	30.90	30.80	30.47	29.73	28.94	28.16	27.39	27.09	27.53	28.50	29.40
2	30.26	30.94	30.82	30.41	29.67	28.89	28.10	27.39	27.07	27.52	28.56	29.39
3	30.27	30.96	30.78	30.35	29.69	28.85	28.05	27.40	27.06	27.56	28.57	29.38
4	30.27	30.94	30.72	30.29	29.72	28.79	28.03	27.40	27.03	27.56	28.63	29.39
5	30.29	30.93	30.69	30.25	29.69	e28.75	28.00	27.36	27.03	27.65	28.67	29.45
6	30.33	30.94	30.70	30.25	29.67	e28.73	28.03	27.32	27.08	27.65	28.74	29.49
7	30.37	30.98	30.73	30.21	29.64	e28.71	28.01	27.28	27.16	27.63	28.79	29.52
8	30.39	30.98	30.74	30.19	29.60	e28.69	27.97	27.28	27.19	27.63	28.82	29.52
9	30.41	30.98	30.77	30.14	29.57	e28.67	27.93	27.28	27.22	27.63	28.86	29.51
10	30.43	31.02	30.79	30.10	29.56	28.65	27.90	27.31	27.24	27.64	28.88	29.55

36A--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	30.45	31.03	30.79	e30.07	29.55	e28.64	27.87	27.30	27.25	27.66	28.91	29.57
12	30.48	31.03	30.79	e30.04	29.50	e28.62	27.82	27.28	27.28	27.73	28.93	29.57
13	30.55	31.04	30.83	e30.01	29.44	e28.60	27.83	27.24	27.30	27.76	28.95	29.57
14	30.58	31.01	30.86	e29.98	29.42	28.58	27.83	27.20	27.37	27.75	28.97	29.59
15	30.61	31.00	30.84	e29.95	29.37	28.58	27.86	27.19	27.40	27.76	29.92	29.60
16	30.64	31.02	30.84	e29.92	29.33	28.60	27.82	27.16	27.40	27.83	29.09	29.59
17	30.65	31.04	30.86	29.89	29.31	28.58	27.73	27.16	27.43	27.88	29.08	29.57
18	30.70	31.02	30.87	29.93	29.30	28.57	27.71	27.16	27.43	27.89	29.12	29.57
19	30.74	31.00	30.85	29.94	29.28	28.49	27.71	27.11	27.42	27.97	29.18	29.60
20	30.74	31.03	30.84	29.93	29.26	28.47	27.72	27.08	27.42	27.98	29.23	29.63
21	30.79	31.04	30.84	29.89	29.21	28.43	27.72	27.07	27.49	28.03	29.24	29.64
22	30.79	31.04	30.81	29.89	29.15	28.43	27.66	27.03	27.50	28.02	29.25	29.63
23	30.78	31.03	30.79	29.88	29.14	28.40	e27.64	27.03	27.49	28.05	29.27	29.62
24	30.78	31.03	30.76	29.83	29.15	28.39	e27.62	27.07	27.47	28.09	29.29	29.64
25	30.83	31.02	e30.75	29.85	29.12	28.33	e27.60	27.07	27.45	28.15	29.31	29.65
26	30.84	30.99	e30.71	29.86	29.07	28.27	e27.57	27.08	27.47	28.22	29.27	29.65
27	30.85	e30.88	e30.67	29.89	28.99	28.26	e27.54	27.10	27.47	28.24	29.29	29.66
28	30.87	30.83	e30.63	29.84	28.94	28.25	e27.51	27.10	27.52	28.28	29.32	29.68
29	30.91	30.81	e30.59	29.78	28.92	28.25	e27.48	27.06	27.51	28.34	29.34	29.68
30	30.91		e30.55	29.78	28.96	28.21	e27.45	27.05	27.51	28.42	29.39	29.67
31	30.89		e30.51		28.96		27.42	27.07		28.45		29.63

e Estimated.

81. A. Young. Young and Victoria Sts. Lat. 21°18'20", long. 157°50'55". Drilled domestic artesian 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: 1923-24, 1926, 1929-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 31	30.61	37	July 29	27.23	41
Feb. 28	30.43	38	Aug. 26	25.73	42
Mar. 24	30.43	37	Sept. 29	26.23	40
Apr. 22	29.67	40	Oct. 29	27.93	38
May 31	28.73	38	Nov. 25	28.99	36
June 26	27.83	39	Dec. 22	29.38	44

83. City and County of Honolulu. Beretania and Kapiolani Sts. Lat. 21°18'20", long. 157°51'5". Drilled unused artesian well in basalt of Koolau volcanic series, diameter 8 to 6 inches, depth 509 feet, cased to 460. Land-surface datum is 32.60 feet above msl. Replaces well 36A as an observation well. Highest water level 33.29 above msl, Mar. 10, 1938; lowest 22.07 above msl, Aug. 10, 1946. Records available: 1923, 1925-48, 1952.

Daily mean water level, above msl, from recorder graph*

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.40	29.64	28.87	28.06	27.28	26.96	27.45	28.47	29.23
2	30.33	29.60	28.81	28.00	27.28	26.95	27.45	28.53	29.21
3	30.25	29.64	28.78	27.94	27.28	26.98	27.52	28.51	29.23
4	30.19	29.63	28.70	27.92	27.28	26.95	27.50	28.60	29.25
5	30.15	29.62	28.67	27.89	27.25	26.97	27.62	28.62	29.31
6	30.15	29.62	28.67	27.92	27.24	27.02	27.59	28.68	29.35
7	30.12	29.57	28.66	27.90	27.22	27.10	27.58	28.73	29.39
8	30.08	29.53	28.67	27.88	27.21	27.11	27.57	28.77	29.37
9	30.04	29.50	28.63	27.85	27.21	27.12	27.56	28.82	29.38
10	30.04	29.47	28.60	27.82	27.24	27.16	27.57	28.83	29.40
11	30.01	29.48	28.81	27.79	27.23	27.17	27.60	28.85	29.41
12	29.98	29.43	28.62	27.75	27.19	27.20	27.70	28.87	29.42
13	29.97	29.37	28.58	27.75	27.14	27.23	27.70	28.89	29.42
14	29.93	29.34	28.52	27.75	27.10	27.35	27.68	28.89	29.46
15	29.88	29.28	28.55	27.77	27.09	27.32	27.68	28.95	29.43
16	29.80	29.25	28.55	27.75	27.08	27.33	27.76	29.02	e29.42
17	29.79	29.22	28.51	27.71	27.07	27.35	27.82	29.00	e29.41
18	29.86	29.21	28.48	27.69	27.06	27.35	27.84	28.98	29.40
19	29.86	29.16	28.44	27.63	27.01	27.35	27.91	29.04	29.44
20	29.88	29.16	28.40	27.63	26.99	27.37	27.91	29.08	29.47
21	29.81	29.10	28.38	27.62	26.97	27.45	27.95	29.09	29.48
22	29.81	29.05	28.38	27.57	26.93	27.45	27.96	29.09	29.47
23	29.80	29.06	28.36	27.51	26.93	27.44	28.02	29.12	29.45
24	29.75	29.04	28.31	27.49	26.98	27.42	28.05	29.14	29.47
25	29.79	29.02	28.24	27.45	26.98	27.40	28.13	29.15	29.48

83--Continued.

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
26	29.80	28.95	28.19	27.41	26.98	27.41	28.20	29.10	e29.47
27	29.83	28.90	28.19	27.42	27.03	27.42	28.20	29.13	e29.47
28	29.76	28.86	28.18	27.40	26.99	27.49	28.26	29.15	e29.46
29	29.70	28.85	28.17	27.37	26.94	27.46	28.30	29.17	e29.46
30	29.72	28.92	28.12	27.35	26.93	e27.4	28.38	29.22	e29.45
31		28.90		27.30	26.95		28.40		29.45

* No record for January, February, and March.
e Estimated.

119. Honolulu Gas Co. Lat. 21°19'05", long. 157°52'25". Drilled industrial artesian 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: 1923-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 31	26.64	431	July 25	24.54	420
Feb. 28	27.54	410	Aug. 26	23.14	420
Mar. 24	27.44	410	Sept. 29	23.54	420
Apr. 22	26.48	410	Oct. 29	25.64	400
May 31	.....	485	Nov. 25	26.15	419
June 26	25.14	405	Dec. 22	26.44	410

132. B. P. Bishop Estate. Old Kamehameha School. Lat. 21°20'05", long. 157°52'25". Drilled unused artesian 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, 192[illegible], 1928-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.85	29.26	29.16	e28.72	28.06	27.33	26.62	25.96	25.95	26.26	27.17	27.82
2	28.88	29.33	29.20	e28.68	27.97	27.27	26.56	25.96	25.91	26.27	27.22	27.80
3	28.86	29.38	29.12	28.64	28.07	27.26	26.53	26.12	25.83	26.21	27.27	27.80
4	28.86	29.37	29.04	28.63	28.15	27.15	26.60	26.12	25.76	26.27	27.32	27.81
5	28.86	29.35	29.02	28.67	28.04	27.13	26.62	26.02	25.81	26.36	27.35	27.80
6	28.93	29.34	29.05	28.69	27.97	27.13	26.71	25.97	25.86	26.39	27.35	27.88
7	28.99	29.36	29.03	28.62	27.89	27.14	26.68	25.90	25.98	26.36	27.34	27.95
8	29.00	29.35	29.08	28.57	27.82	27.24	26.55	25.91	26.07	26.30	27.37	27.92
9	29.01	29.36	29.15	28.50	27.81	27.18	26.48	25.90	26.05	26.29	27.42	27.88
10	29.03	29.40	29.14	28.52	27.85	27.10	26.44	26.03	26.05	26.28	27.45	27.89
11	29.04	29.41	29.10	28.49	27.92	27.19	26.40	26.00	26.04	26.32	27.48	27.90
12	29.05	29.40	29.06	28.50	27.84	27.16	26.34	25.93	26.03	26.39	27.45	27.85
13	29.10	29.37	29.09	28.55	27.75	27.11	26.47	25.90	26.05	26.42	27.47	27.88
14	29.12	29.35	29.08	28.59	27.70	27.03	26.48	25.84	26.16	26.39	27.48	27.94
15	29.15	29.30	29.11	28.61	27.68	27.11	26.46	25.83	26.18	26.34	27.56	27.94
16	29.13	29.32	29.14	28.58	27.66	27.07	26.40	25.80	26.16	26.41	27.62	27.92
17	29.14	29.39	29.15	28.48	27.64	27.00	26.33	25.93	26.17	26.45	27.65	27.87
18	29.11	29.37	29.15	28.35	27.69	26.95	26.34	25.90	26.17	26.48	27.68	27.87
19	29.18	29.33	29.10	28.35	27.68	26.91	26.28	25.77	26.15	26.58	27.65	27.89
20	29.24	29.32	29.07	28.38	27.64	26.88	26.35	25.70	26.17	26.59	27.68	27.93
21	29.28	29.32	29.00	28.42	27.59	26.86	26.30	25.66	26.24	26.63	27.66	27.95
22	29.28	29.34	29.00	28.33	27.52	26.96	26.22	25.65	26.22	26.60	27.69	27.93
23	29.23	29.31	29.04	28.31	27.45	26.89	26.14	25.65	26.21	26.65	27.75	27.90
24	29.21	29.34	29.04	28.27	27.50	26.83	26.09	25.83	26.18	26.70	27.75	27.89
25	29.27	29.36	e29.00	28.18	27.53	26.75	26.05	25.84	26.16	26.81	27.74	27.94
26	29.27	29.25	e28.96	28.22	27.46	26.73	26.02	25.80	26.18	26.92	27.70	27.90
27	29.28	29.20	e28.92	28.29	27.37	26.69	26.17	25.75	26.20	26.94	27.74	27.94
28	29.29	29.17	e28.88	28.30	27.29	26.67	26.13	25.70	26.27	26.98	27.74	27.98
29	29.32	29.12	e28.84	28.25	27.27	26.80	26.05	25.69	26.24	27.10	27.81	27.95
30	29.30		e28.80	28.14	27.27	26.71	26.05	25.69	26.21	27.08	27.88	27.91
31	29.28		e28.76		27.28		26.00	25.83		27.08		27.95

e Estimated.

153. Sam Damon Estate. Moanalua Gardens. Lat. 21°21'05", long. 157°53'40". Drilled domestic and irrigation artesian 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, Apr. 1917; lowest 19.39 above msl, Sept. 26, 1945. Records available: 1910-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 24	26.04	58	July 30	23.90	61
Feb. 25	25.84	58	Aug. 27	23.63	59
Mar. 24	25.53	60	Sept. 29	24.06	61
Apr. 22	24.87	61	Oct. 28	24.37	60
May 29	24.18	60	Nov. 25	24.78	59
June 26	23.92	61	Dec. 22	24.69	57

187B. U. S. Navy. At Aiea. Lat. 21°22'40", long. 157°56'05". Drilled industrial artesian 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 25.06 above msl, Feb. 23, 1937; lowest 15.06 above msl, Aug. 19, 1945. Records available: 1923, 1928-52.

Jan. 24	23.12	123	July 28	20.92	120
Feb. 25	22.44	125	Aug. 25	21.55	133
Mar. 24	22.04	127	Sept. 24	20.18	120
Apr. 22	21.59	116	Oct. 28	21.40	120
May 29	20.86	123	Nov. 25	21.58	124
June 26	20.62	123	Dec. 22	21.37	116

190. U. S. Navy. McGraw Peninsula. Lat. 21°22'47", long. 157°56'38". Drilled unused artesian 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, 1929-52.

Jan. 24	23.12	236	July 28	20.80	245
Feb. 25	22.04	241	Aug. 25	20.65	250
Mar. 24	22.03	238	Sept. 24	20.31	255
Apr. 22	21.58	241	Oct. 28	21.49	250
May 29	20.56	241	Nov. 25	21.51	233
June 26	20.62	238	Dec. 22	21.37	233

193. L. L. McCandless Estate. In Waimalu Valley. Lat. 21°23'37", long. 157°56'52". Drilled domestic artesian 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, Mar. 1916; lowest 14.65 above msl, Sept. 25, 1945. Records available: 1902, 1910-52.

Jan. 24	22.24	287	July 28	19.74	295
Feb. 25	21.48	287	Aug. 25	19.42	295
Mar. 24	21.05	287	Sept. 24	19.03	295
Apr. 22	20.49	292	Oct. 28	20.27	285
May 29	19.88	287	Nov. 25	20.59	262
June 26	19.75	290	Dec. 22	20.29	257

201. B. P. Bishop Estate. At Pearl City. Lat. 21°23'35", long. 157°58'20". Drilled irrigation artesian 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, Feb. 1916; lowest 14.18 above msl, Aug. 28, 1946. Records available: 1910-52.

Jan. 24	20.40	1200	July 28	19.24	1020
Feb. 25	19.85	1160	Aug. 25	18.87	934
Mar. 24	19.49	1250	Sept. 25	18.49	900
Apr. 22	18.85	1010	Oct. 28	19.68	984
May 29	18.32	1050	Nov. 25	19.70	827
June 26	18.15	1010	Dec. 22	18.50	875

244. B. P. Bishop Estate. At Waipahu. Lat. 21°23'18", long. 158°00'32". Drilled domestic artesian 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, Feb. 1916; lowest 14.80 above msl, July 26, 1945. Records available: 1910-21, 1923-52.

Jan. 24	24.41	107	July 28	19.77	114
Feb. 25	23.07	111	Aug. 25	18.57	110
`lar. 24	23.07	109	Sept. 24	18.37	110
Apr. 22	21.21	109	Oct. 28	21.17	108
`lay 29	20.17	109	Nov. 25	21.23	109
June 26	19.87	111	Dec. 22	20.87	103

266. Hawaii Meat Co. At Honouliuli. Lat. 21°21'55", long. 158°01'52". Drilled irrigation artesian 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, Apr. 1918; lowest 12.54 above msl, Sept. 24, 1945. Records available: 1910-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 24	24.40	164	July 28	18.25	210
Feb. 25	21.66	171	Aug. 25	20.40	220
Mar. 24	20.98	173	Sept. 24	19.86	230
Apr. 22	19.68	192	Oct. 28	22.75	200
May 29	18.66	202	Nov. 25	19.87	194
June 26	18.44	205	Dec. 22	19.45	197

276. Ewa Plantation Co. At Gilbert. Lat. 21°20'16", long. 158°06'35". Drilled battery of four irrigation artesian wells in basalt of Koolau 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, Feb. 1909; lowest 11.51 above msl, Oct. 1945. Records available: 1905, 1908-52.

Jan.	13.54	545	July	11.83	578
Feb.	13.06	573	Aug.	11.75	579
Mar.	12.76	577	Sept.	11.93	580
Apr.	12.30	576	Oct.	12.16	550
May	12.03	575	Nov.	12.34	567
June	11.96	580	Dec.	12.24	561

286. Waialua Agricultural Co. At Kawaihapai. Lat. 21°34'46", long. 158°10'49". Drilled unused artesian 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: 1929-52.

Jan. 23	18.11	144	July 23	17.42	140
Feb. 27	18.08	140	Aug. 27	18.93	137
Mar. 27	17.69	135	Sept. 26	18.93	140
Apr. 24	17.37	133	Oct. 30	19.23	133
May 28	17.29	130	Nov. 24	18.00	130
June 25	17.45	137	Dec. 23	17.92	134

308. J. F. Mendonca. At Mokuleia. Lat. 21°34'35", long. 158°09'11". Drilled irrigation artesian 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: 1924-52.

Jan. 23	19.62	101	July 29	19.42	112
Feb. 27	19.52	107	Aug. 27	18.22	112
Mar. 27	19.02	105	Sept. 26	18.42	108
Apr. 24	19.14	105	Oct. 30	19.92	102
May 28	19.02	109	Nov. 24	19.62	99
June 25	19.12	109	Dec. 23	19.45	103

326. Waialua Agricultural Co. At 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, Dec. 1914; lowest 9.19 above msl, Apr. 24, 1946. Records available: 1911-21, 1924-52.

Jan. 23	12.39	119	July 23	11.29	114
Feb. 27	11.86	111	Aug. 27	11.07	108
Mar. 27	11.70	113	Sept. 26	11.06	108
Apr. 24	11.17	109	Oct. 30	11.92	108
May 28	10.95	109	Nov. 24	12.09	105
June 25	11.00	118	Dec. 23	12.04	102

337. Territory of Hawaii. At Waialee. Lat. 21°41'30", long. 158°01'25". Drilled unused artesian 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: 1929-52.

Jan. 23	13.99	123	July 23	13.52	114
Feb. 27	13.81	121	Aug. 27	13.63	108
Mar. 27	13.77	125	Sept. 26	13.42	106
Apr. 24	13.50	123	Oct. 30	13.74	112
May 28	13.54	129	Nov. 24	13.90	32
June 25	13.51	142	Dec. 23	13.72	72

356. Kahuku Plantation Co. At Kahuku. Lat. 21°40'54", long. 157°57'04". Drilled industrial artesian 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, Jan. 1916; lowest 9.28 above msl, July 23, 1947. Records available: 1908, 1911-18, 1921, 1924-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 23	12.76	308	July 23	10.18	320
Feb. 27	10.18	308	Aug. 27	9.91	310
Mar. 27	10.33	308	Sept. 26	9.71	320
Apr. 24	9.68	308	Oct. 30	12.45	310
May 28	9.41	349	Nov. 24	12.90	324
June 25	9.55	323	Dec. 23	12.83	315

396. Kahuku Plantation Co. At Hauula. Lat. 21°36'22", long. 157°54'36". Drilled domestic and irrigation artesian 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 17.02 above msl, May 28, 1946. Records available: 1911-19, 1921, 1924-52.

Jan. 23	19.85	74	July 23	18.34	77
Feb. 27	19.13	73	Aug. 27	18.31	75
Mar. 27	19.27	73	Sept. 26	18.10	77
Apr. 24	18.58	71	Oct. 30	18.92	76
May 28	18.05	71	Nov. 24	19.46	72
June 25	18.44	72	Dec. 23	19.44	72

405. M. E. Foster Estate. At Kahana. Lat. 21°33'27", long. 157°52'44". Drilled domestic artesian 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 14.90 above msl, Oct. 28, 1946. Records available: 1936-52.

Jan. 23	17.33	40	July 23	16.96	41
Feb. 27	17.12	40	Aug. 27	16.16	41
Mar. 27	17.56	41	Sept. 26	15.46	40
Apr. 24	17.78	40	Oct. 30	16.66	39
May 28	17.26	40	Nov. 24	16.96	41
June 25	16.96	40	Dec. 23	17.26	39

406. Mrs. F. M. Swanzy. At Kaaawa. Lat. 21°32'41", long. 157°51'00". Drilled irrigation artesian 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: 1929-52.

Jan. 23	15.32	251	July 23	14.82	265
Feb. 27	15.23	246	Aug. 27	14.56	260
Mar. 27	15.41	244	Sept. 26	14.35	265
Apr. 24	15.42	251	Oct. 30	14.32	270
May 28	15.07	256	Nov. 24	14.42	253
June 25	14.92	246	Dec. 23	14.63	253

T-1. Waialua Agricultural Co. Kaukonahua Gulch. Lat. 21°32'15", long. 158°05'40". Drilled observation water-table well in basalt of Waianae volcanic series, diameter 1 inch, depth 291 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: 1938-52.

Jan. 2	15.88	31	June 2	17.58	31
Feb. 4	17.83	21	July 3	18.08	31
28	17.83	21	Aug. 2	19.98	31
Apr. 2	18.08	21	Sept. 10	17.66	31
May 2	15.89	21	Oct. 6	17.78	21

T-2. Waialua Agricultural Co. Near Anahulu Canyon. Lat. 21°35'52", long. 158°05'16". Drilled observation 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: 1938-52.

Jan. 2	5.11	21	June 2	5.64	135
Feb. 4	6.79	31	July 3	5.41	145
28	5.11	41	Aug. 2	5.51	114
Apr. 2	5.51	41	Sept. 10	5.51	104
May 2	4.81	104	Oct. 6	5.91	62

T-5. Honolulu Suburban Water System. Near Makaiwa Gulch. Lat. 21°20'55", long. 158°07'05". Drilled observation 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: 1939-52.

Date	Water level	Chloride ppm	Date	Water level	Chloride ppm
Jan. 26, 1951	4.58	419	Feb. 25, 1952	4.83	513
Feb. 26	4.58	385	Mar. 28	4.59	528
Mar. 27	5.48	408	Apr. 21	4.48	523
Apr. 27	4.60	423	May 22	4.62	534
June 18	4.31	456	June 24	4.10	534
July 23	4.55	489	July 22	4.18	520
Aug. 28	4.51	494	Aug. 28	4.17	530
Sept. 26	4.52	514	Sept. 25	4.24	530
Oct. 26	4.73	523	Oct. 31	4.40	520
Nov. 28	4.78	523	Nov. 26	4.42	515
Dec. 21	5.05	503	Dec. 19	4.32	510
Jan. 24, 1952	5.08	503			

T-15. Honolulu Suburban Water System. In Nanakuli Valley. Lat. 21°23'50", long. 158°07'20". Drilled observation 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: 1940-52.

Jan. 29	2.63	96	July 22	2.47	96
Feb. 25	2.52	96	Aug. 28	2.43	94
Mar. 28	2.79	95	Sept. 25	2.48	98
Apr. 21	2.76	94	Oct. 31	2.54	100
May 22	2.62	99	Nov. 26	2.57	95
June 24	2.55	96	Dec. 19	2.39	93

T-20. U. S. Navy. Near Ewa. Lat. 21°21'36", long. 158°03'45". Drilled observation artesian 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: 1942-52.

Jan. 24	18.50	210	July 22	16.41	220
Feb. 25	18.04	215	Aug. 28	15.87	210
Mar. 28	17.62	218	Sept. 25	16.04	205
Apr. 21	17.30	205	Oct. 31	16.78	195
May 29	16.80	208	Nov. 26	17.20	200
June 24	16.71	210	Dec. 19	17.07	203

T-24. Honolulu Board of Water Supply. In Manaiki Gulch. Lat. 21°21'27", long. 157°53'10". Drilled observation artesian 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 22.78 above msl, Oct. 7, 1950. Records available: 1945-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.57	25.85	25.47	25.23	24.55	24.05	23.81	23.84	23.68	23.56	24.40	24.79
2	25.58	25.84	25.50	25.19	24.51	24.07	23.83	23.83	23.69	23.55	24.43	24.78
3	25.58	25.87	25.48	25.16	24.47	24.03	23.86	23.86	23.69	23.51	24.47	24.75
4	25.58	25.86	25.41	25.13	24.51	23.99	23.89	23.87	23.67	23.51	24.50	24.69
5	25.60	25.81	25.39	25.09	24.52	23.96	23.94	23.86	23.65	23.53	e24.50	24.67
6	25.64	25.76	25.38	25.11	24.48	23.96	24.00	23.85	23.65	23.56	24.51	24.68
7	25.67	25.74	25.38	25.11	24.44	23.93	24.05	23.84	23.67	23.54	24.52	24.71
8	25.67	25.69	25.37	25.09	24.41	23.97	24.03	23.84	23.69	23.52	24.54	24.73
9	25.65	25.66	25.41	25.05	24.37	23.98	24.02	23.85	23.69	23.51	24.56	24.72
10	25.67	25.69	25.42	25.03	24.36	23.94	24.02	23.87	23.69	23.50	24.58	24.73
11	25.66	25.71	25.37	25.04	24.37	23.92	24.00	23.85	23.66	23.51	24.57	24.71
12	25.69	25.68	25.35	25.04	24.38	23.90	24.00	23.84	23.64	23.55	24.52	24.70
13	25.73	25.65	25.34	25.07	24.32	23.89	24.03	23.80	23.64	23.58	24.53	24.68
14	25.76	25.60	25.36	25.07	24.30	23.84	24.05	23.77	23.64	23.57	24.54	24.69
15	25.76	25.58	25.32	24.99	24.28	23.89	24.01	23.75	23.64	23.53	24.55	24.69
16	25.77	25.58	25.35	24.94	24.26	23.92	24.02	23.73	23.64	23.57	24.59	24.66
17	25.76	25.64	25.38	24.89	24.24	23.89	23.99	23.73	23.63	23.66	24.62	24.61
18	25.76	25.65	25.37	24.86	24.24	23.84	23.97	23.74	23.62	23.70	24.61	24.57
19	25.76	25.61	25.32	24.83	24.27	23.84	23.95	23.70	23.58	23.80	24.62	24.56
20	25.79	25.62	25.30	24.83	24.26	23.82	23.95	23.70	23.58	23.85	24.63	24.56

T-24--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	25.86	25.58	25.30	24.82	24.20	23.78	24.03	23.69	23.59	e23.90	24.64	24.57
22	25.88	25.57	25.27	24.77	24.16	23.83	24.02	23.65	23.59	e23.95	24.64	24.58
23	25.86	25.58	25.28	24.71	24.13	23.88	23.95	23.66	23.57	24.02	24.67	24.55
24	25.86	25.62	25.31	24.68	24.13	23.84	23.91	23.67	23.54	24.08	24.72	24.55
25	25.88	25.62	25.27	24.64	24.17	23.80	23.89	23.67	23.52	24.16	24.73	24.56
26	25.88	25.57	25.25	24.62	24.23	23.77	23.87	23.66	23.51	24.23	24.71	24.57
27	25.91	25.54	25.25	24.65	24.15	23.74	23.90	23.65	23.51	24.26	24.71	24.58
28	25.91	25.50	25.24	24.67	24.08	23.74	23.92	23.62	23.52	24.28	24.73	24.62
29	25.90	25.47	25.21	24.60	24.04	23.76	23.90	23.61	23.52	24.29	24.75	24.63
30	25.88		25.22	24.58	24.03	23.77	23.89	23.62	23.55	24.34	24.78	24.63
31	25.86		25.26		24.03		23.87	23.64		24.36		24.60

e Estimated.

T-25. Honolulu Board of Water Supply. In Waimalu Valley, near Pearl Harbor. Lat. 21°23'35", long. 157°56'48". Drilled observation artesian 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 17.27 above msl, Oct. 28, 1949. Records available: 1945-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.55	20.15	19.70	19.40	18.85	18.62	18.37	18.46	18.48	17.92	19.05	19.15
2	20.46	20.30	19.75	19.32	18.82	18.60	18.40	18.50	18.42	17.90	19.12	19.09
3	20.44	20.30	19.55	19.27	18.85	18.55	18.48	18.60	18.36	17.87	19.17	19.04
4	20.32	20.12	19.50	19.26	19.00	18.52	18.63	18.52	18.30	17.92	19.10	19.06
5	20.40	19.99	19.70	19.35	18.93	18.52	18.72	18.52	18.26	17.98	18.97	19.12
6	20.43	19.90	19.65	19.45	18.90	18.52	18.70	18.50	18.35	17.94	19.00	19.17
7	20.37	19.82	19.65	19.37	18.82	18.52	18.60	18.50	18.40	17.95	19.08	19.26
8	20.35	19.85	19.65	19.35	18.82	18.60	18.52	18.48	18.45	17.92	19.15	19.27
9	20.35	20.00	19.75	19.25	18.76	18.57	18.48	18.47	18.42	17.87	19.20	19.25
10	20.25	20.05	19.65	19.26	18.80	18.55	18.48	18.50	18.27	17.85	19.10	19.20
11	20.25	19.86	19.60	19.45	18.85	18.52	18.47	18.45	18.27	17.92	19.02	19.17
12	20.25	19.76	19.52	19.45	18.77	18.51	18.47	18.42	18.25	18.05	18.95	19.10
13	20.30	19.72	19.47	19.45	18.75	18.50	18.50	18.40	18.25	17.96	18.93	19.17
14	20.27	19.65	19.50	19.37	18.72	18.55	18.47	18.37	18.32	17.94	18.98	19.15
15	20.25	19.70	e19.50	19.27	18.72	18.63	18.51	18.38	18.25	18.02	19.08	19.00
16	20.20	19.90	e19.50	19.23	18.67	18.58	18.52	18.37	18.33	18.25	19.20	18.95
17	20.15	19.98	e19.50	19.17	18.67	18.52	18.52	18.45	18.10	18.42	19.15	18.92
18	20.17	19.86	e19.50	19.14	18.72	18.48	18.50	18.42	18.08	18.51	18.95	18.85
19	20.50	e19.84	e19.50	19.13	18.70	18.47	18.49	18.32	18.05	18.61	19.00	18.85
20	20.60	e19.81	e19.50	19.21	18.67	18.46	18.61	18.32	18.05	18.67	19.12	19.00
21	20.52	e19.78	e19.50	19.15	18.65	18.55	18.55	18.32	18.09	18.71	19.18	19.05
22	20.45	19.75	e19.50	19.08	18.63	18.72	18.50	18.30	18.06	18.73	19.22	18.97
23	20.40	19.90	e19.50	19.05	18.61	18.60	18.47	18.27	18.03	18.74	19.26	18.92
24	20.37	19.95	e19.50	18.97	18.63	18.50	18.43	18.31	18.00	18.73	19.25	18.95
25	20.40	19.80	e19.50	19.02	18.66	18.45	18.47	18.27	17.97	18.85	19.20	19.05
26	20.42	19.62	e19.50	19.06	18.63	18.42	18.55	18.26	17.97	18.96	19.09	19.02
27	20.43	19.55	e19.50	19.13	18.62	18.37	18.62	18.23	17.96	18.98	19.18	19.10
28	20.42	19.48	19.50	19.08	18.58	18.37	18.52	18.22	18.01	18.85	19.14	19.12
29	20.37	e19.59	19.65	19.00	18.57	18.42	18.48	18.20	17.95	18.77	19.26	18.97
30	20.33		19.52	18.92	18.55	18.41	18.49	18.22	17.92	18.90	19.26	18.87
31	20.22		.....		18.56		18.48	18.32		18.95		18.90

e Estimated.

T-27. Honolulu Board of Water Supply. At Pearl City. Lat. 21°23'55", long. 157°58'30". Drilled observation 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 17.86 above msl, Oct. 25, 1948. Records available: 1946-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21.95	21.85	21.00	20.66	19.87	19.62	19.26	19.11	19.02	18.42	19.82	20.10
2	21.95	21.90	21.12	20.57	19.82	19.60	19.22	19.12	19.01	18.40	19.95	20.00
3	21.95	21.95	21.05	20.50	19.80	19.53	19.25	19.22	18.92	18.38	19.98	19.92
4	21.90	21.82	20.90	20.44	19.92	19.49	19.40	19.22	18.85	18.42	19.90	19.86
5	21.87	21.66	20.93	20.43	19.92	19.47	19.57	19.17	18.82	18.50	19.85	19.85

T-27--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	21.90	21.52	20.93	20.55	19.83	19.46	19.60	19.15	18.86	18.48	19.80	19.90
7	21.92	21.40	20.92	20.52	19.80	19.47	19.50	19.12	18.92	18.45	19.80	20.00
8	21.92	21.35	20.95	20.45	19.77	19.55	19.35	19.12	18.99	18.40	19.90	20.04
9	21.85	21.42	21.06	20.37	19.72	19.53	19.27	19.12	19.05	18.36	20.02	19.98
10	21.72	21.52	21.07	20.37	19.70	19.50	19.25	19.16	18.93	18.35	20.02	19.92
11	21.70	21.45	20.96	20.50	19.75	19.46	19.22	19.11	18.85	18.42	19.95	19.87
12	21.67	21.30	20.90	20.55	19.72	19.43	19.17	19.07	18.81	18.52	19.87	19.82
13	21.75	21.20	20.85	20.60	19.67	19.43	19.22	19.00	18.80	18.52	19.80	19.83
14	21.75	21.12	20.82	20.55	19.67	19.42	19.21	18.97	18.83	18.48	19.80	19.87
15	21.67	21.06	20.80	20.43	19.62	19.50	19.18	18.96	18.77	18.48	19.90	19.85
16	21.60	21.15	20.90	20.35	19.62	19.47	19.17	18.96	18.70	18.65	20.04	19.75
17	21.56	21.32	20.92	20.27	19.62	19.43	19.16	19.05	18.65	18.91	20.03	19.65
18	21.55	21.30	20.90	20.25	19.65	19.42	19.17	19.00	18.61	19.15	19.92	19.56
19	21.65	21.17	20.85	20.22	19.66	19.42	19.22	18.93	18.56	19.31	19.87	19.60
20	21.82	21.17	20.77	20.27	19.63	19.40	19.32	18.87	18.56	19.45	19.90	19.75
21	21.90	21.15	20.75	20.25	19.61	19.37	19.35	18.87	18.57	19.55	19.97	19.85
22	21.95	21.11	20.75	20.15	19.57	19.50	19.30	18.80	18.55	19.64	20.02	19.87
23	21.96	21.20	20.85	20.09	19.57	19.47	19.25	18.72	18.50	19.70	20.10	19.70
24	21.96	21.30	20.80	20.06	19.56	19.43	19.17	18.75	18.47	19.77	20.15	19.60
25	22.00	21.22	20.67	20.00	19.65	19.37	19.17	18.72	18.43	19.85	20.08	19.67
26	22.04	21.10	20.62	19.96	19.67	19.33	19.16	18.67	18.43	19.95	19.97	19.73
27	22.06	20.96	20.65	20.09	19.62	19.32	19.23	18.64	18.48	19.95	20.00	19.77
28	22.06	20.86	20.67	20.07	19.55	19.32	19.22	18.61	18.53	19.85	20.02	19.87
29	22.03	20.87	20.70	20.00	19.50	19.37	19.17	18.65	18.46	19.76	20.05	19.85
30	21.97		20.80	19.92	19.50	19.32	19.16	18.75	18.42	19.75	20.14	19.72
31	21.92		20.75		19.52		19.12	18.87		19.75		e19.73

e Estimated.

T-28. Honolulu Board of Water Supply. In Halemano Gulch, near Waialua. Lat. 21°34'40", long. 158°06'07". Drilled observation 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: 1947-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.01	12.12	11.98	11.87	11.13	11.24	11.14	11.37	11.53	11.19	12.11	12.00
2	11.99	12.10	12.04	11.82	11.08	11.23	11.19	11.45	11.59	11.26	12.16	11.92
3	11.99	12.07	12.00	11.75	11.09	11.13	11.41	11.56	11.47	11.21	12.15	11.88
4	11.97	12.05	11.92	11.73	11.26	11.09	11.52	11.61	11.28	11.33	12.09	11.81
5	11.96	11.99	11.89	11.70	11.27	11.05	11.52	11.52	11.19	11.62	11.95	11.80
6	11.95	.....	11.92	11.78	11.18	11.05	11.51	11.49	11.29	11.56	11.89	11.92
7	11.96	.....	11.90	11.74	11.16	11.07	11.41	11.45	11.51	11.37	11.94	11.99
8	11.97	11.65	11.94	11.71	11.18	11.23	11.21	11.54	11.64	11.28	12.08	11.95
9	11.98	11.76	11.96	11.66	11.16	11.13	11.16	11.58	11.59	11.25	12.12	11.84
10	11.98	11.87	11.93	11.61	11.16	11.02	11.14	11.72	11.36	11.24	12.01	11.79
11	11.96	11.78	11.84	11.72	11.34	10.98	11.15	11.67	11.23	11.39	11.88	11.81
12	11.94	11.64	11.74	11.70	11.27	10.97	11.12	11.51	11.19	11.57	11.87	11.85
13	11.95	11.53	11.73	11.74	11.17	10.98	11.18	11.43	11.36	11.50	11.85	12.00
14	11.96	11.49	11.75	11.69	11.15	10.94	11.21	11.45	11.55	11.36	11.83	12.07
15	11.96	11.50	11.83	11.69	11.11	11.10	11.21	11.46	11.49	11.28	11.96	12.01
16	11.99	11.67	11.92	11.53	11.08	11.06	11.32	11.42	11.33	11.41	12.02	11.87
17	12.01	11.84	11.91	11.46	11.12	11.05	11.43	11.59	11.25	11.60	11.97	11.83
18	12.03	11.77	11.85	11.44	11.34	10.98	11.47	11.50	11.21	11.77	11.86	11.77
19	12.11	11.67	11.79	11.44	11.29	10.99	11.52	11.33	11.21	.....	11.77	11.78
20	12.21	11.75	11.76	11.55	11.19	11.01	11.63	11.26	11.35	.....	11.81	11.90
21	12.28	11.84	11.71	11.48	11.15	11.06	11.65	11.22	11.54	.....	11.86	11.96
22	12.32	11.89	11.81	11.41	11.14	11.23	11.58	11.19	11.46	.....	12.02	11.98
23	12.33	11.90	11.86	11.40	11.16	11.23	11.45	11.18	11.27	.....	12.10	11.99
24	12.29	11.96	11.83	11.31	11.23	11.15	11.31	11.29	11.16	12.08	12.05	12.03
25	12.29	11.96	11.81	11.25	11.36	11.11	11.17	11.29	11.11	12.08	11.97	12.04
26	12.28	11.91	11.85	11.22	11.26	11.05	11.14	11.16	11.08	12.08	11.96	12.03
27	12.27	11.90	11.86	11.37	11.14	10.97	11.40	11.11	11.27	12.08	12.03	12.02
28	12.25	11.89	11.91	11.31	11.06	11.02	11.43	11.08	11.51	12.09	12.00	12.01
29	12.20	11.90	11.93	11.19	11.03	11.20	11.43	11.08	11.41	12.06	12.03	11.98
30	12.17		11.97	11.16	11.01	11.16	11.46	11.10	11.29	12.00	12.07	11.99
31	12.15		11.91		11.05		11.41	11.28		12.04		12.01

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 17.06 above msl, Oct. 28, 1949. Records available: 1949-52.

Daily mean water level, above msl, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.03	24.55	22.40	21.25	19.92	19.90	19.06	18.67	19.50	17.90	21.10	21.40
2	25.05	24.80	23.05	21.00	19.80	19.85	18.97	18.65	19.30	17.87	21.70	20.70
3	25.05	24.85	22.45	20.82	19.75	19.55	19.00	18.80	19.05	17.87	21.30	20.25
4	25.10	24.00	21.90	20.65	20.20	19.40	19.70	18.85	18.65	17.92	20.70	20.00
5	25.12	23.50	21.72	20.60	20.15	19.30	19.95	18.75	18.50	18.05	20.35	19.90
6	25.15	23.05	21.65	21.25	19.90	19.21	20.01	18.72	18.53	18.10	20.10	20.50
7	25.17	22.75	21.55	21.20	19.77	19.25	19.75	18.67	18.65	18.00	20.10	21.15
8	25.12	22.35	22.25	20.90	19.70	19.75	19.45	18.67	19.25	17.90	21.00	20.80
9	24.40	23.00	22.95	20.70	19.62	19.70	19.20	18.70	19.40	17.82	21.75	20.30
10	23.75	23.70	22.35	20.65	19.62	19.42	19.10	18.85	18.90	17.85	21.25	20.00
11	23.50	23.05	21.90	21.45	20.00	19.30	19.03	18.85	18.65	18.15	20.95	19.80
12	23.85	22.45	21.55	21.50	20.00	19.23	18.98	18.70	18.52	18.55	20.50	19.70
13	24.35	22.10	21.40	21.85	19.77	19.17	19.10	18.57	18.47	18.55	20.20	20.20
14	23.85	21.95	21.30	21.45	19.72	19.16	19.10	18.50	18.42	18.32	20.10	20.70
15	23.20	21.85	21.95	20.95	19.67	19.55	18.95	18.47	18.33	18.30	21.00	20.30
16	22.90	22.60	22.70	20.70	19.63	19.50	18.87	18.65	18.26	18.70	21.70	19.80
17	22.70	23.45	22.15	20.52	19.57	19.32	18.86	18.95	18.20	19.90	21.25	19.55
18	22.65	22.85	21.75	20.42	20.00	19.25	18.83	18.80	18.13	20.60	20.50	19.35
19	23.50	22.30	21.53	20.37	20.00	19.27	18.82	18.57	18.10	21.05	20.15	19.24
20	24.25	22.20	21.43	20.90	19.75	19.23	19.10	18.45	18.06	21.40	20.12	19.90
21	e24.43	22.15	21.35	20.75	19.63	19.25	19.15	18.42	18.06	21.65	20.42	20.85
22	e24.61	22.05	21.80	20.35	19.55	19.55	19.02	18.37	18.06	21.80	21.00	20.40
23	e24.79	22.70	22.35	20.16	19.51	19.60	18.91	18.37	18.02	21.90	21.75	19.80
24	e24.97	23.40	21.85	20.15	19.55	19.32	18.82	18.45	17.95	21.95	21.25	19.60
25	25.15	22.85	21.35	20.04	20.10	19.17	18.75	18.45	17.90	22.00	20.70	20.25
26	25.25	22.25	21.10	20.05	19.95	19.11	18.72	18.32	17.92	22.12	20.45	20.50
27	25.25	21.90	21.00	20.60	19.65	19.06	18.95	18.27	18.06	21.40	21.00	20.75
28	25.15	21.65	20.90	20.60	19.50	19.05	18.95	18.22	18.05	20.95	20.95	21.45
29	25.05	21.60	21.60	20.30	19.35	19.25	18.82	18.20	18.05	20.60	21.30	20.90
30	24.80		22.20	20.07	19.30	19.25	18.76	18.24	17.95	20.35	21.90	20.45
31	24.65		21.70		19.30		18.72	18.50		20.35		20.15

e Estimated.

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 7.5 by 7.5 feet, vertical depth of 30-degree inclined shaft 563 feet, lined with concrete in upper part, pump chamber at bottom of shaft. Highest water level 284.13 above msl, Sept. 4, 1937; lowest 273.17 above msl, Mar. 11, 1946. Records available: 1936-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	281.09	Mar. 24	280.55	June 25	281.36	Oct. 12	281.37
13	280.82	Apr. 4	280.64	July 6	281.45	19	281.24
16	280.88	18	280.80	13	281.40	26	281.20
24	280.67	22	280.86	20	281.51	Nov. 2	281.11
30	280.70	28	280.88	27	281.58	9	280.98
Feb. 1	280.59	May 4	280.89	Aug. 10	281.62	16	280.92
10	280.61	22	281.12	24	281.59	23	280.75
18	280.63	27	281.19	31	281.68	30	280.68
25	280.57	June 1	281.21	Sept. 10	281.53	Dec. 7	280.57
Mar. 6	280.48	8	281.28	15	281.48	14	280.42
9	280.53	15	281.21	21	281.48	21	280.34
18	280.52	20	281.33	Oct. 5	281.37	28	280.20

Shaft 7. Honolulu Board of Water Supply. 16th and Claudine Sts. Lat. 21°17'20", long. 157°47'35". Dug public-supply water-table well in basalt of Koolau volcanic series, size 8 by 8 feet, vertical depth of 30-degree inclined shaft 150 feet, pump chamber and sump at bottom of shaft, shaft and chamber lined with concrete; infiltration tunnel, size 5 by 7 feet, length 67 feet. Land-surface datum is 160 feet above msl. Highest water level 10.43 above msl, Oct. 29, 1937; lowest 8.79 above msl, June 6, 1947. Records available: 1945-52.

Shaft 7--Continued.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	9.48	Apr. 3	9.46	July 11	9.22	Oct. 10	9.26
7	9.48	10	9.37	18	9.22	17	9.28
14	9.42	18	9.38	25	9.24	24	9.29
21	9.54	25	9.33	Aug. 1	9.23	31	9.30
28	9.48	May 2	9.35	8	9.26	Nov. 7	9.31
Feb. 3	9.50	9	9.31	15	9.26	14	9.32
10	9.43	16	9.35	22	9.26	21	9.34
15	9.44	23	9.30	29	9.26	27	9.37
20	9.50	30	9.29	Sept. 5	9.28	Dec. 5	9.34
27	9.48	June 8	9.28	12	9.30	12	9.37
Mar. 4	9.52	13	9.29	19	9.27	19	9.34
11	9.47	20	9.22	26	9.26	25	9.37
20	9.52	28	9.24	Oct. 3	9.26	31	9.32
27	9.48	July 4	9.20				

NEVADA

By J. L. Poole

Scope of Water-Level Program

The observation-well program in Nevada was continued in 1952 in cooperation with the Office of the State Engineer. Measurements of water levels were made in 283 wells, 12 of which were equipped with recording gages. Water levels and artesian pressures were measured in almost all wells in March and September and quarterly or monthly in heavily pumped areas and in some valleys in which ground-water investigations were in progress. Additional basic hydrologic data were collected as a part of the program of reconnaissance studies in undeveloped valleys throughout the State.

Precipitation

The State of Nevada received an average precipitation of 9.22 inches, or about 107 percent of normal, during the year 1952. The greatest increase occurred in the first three months. However, the remainder of the calendar year also showed above-average precipitation, with a fairly even distribution of the increase throughout the State. In March snow-stored water averaged about 200 percent of normal in the drainage basin of the Humboldt River in north-central Nevada and in the basins of eastern Nevada. The Spring Mountains, recharge area to Las Vegas and Pahrump Valleys in southern Nevada, contained over 200 percent of normal of snow water as of the April 1 snow survey. Snow surveys of the Sierra Nevada snow courses indicated over 200 percent of normal of snow-stored water in the Truckee, Carson, and Walker River basins.

Runoff

The runoff in Nevada streams during the water year beginning October 1, 1951, and ending September 30, 1952, was considerably above normal. Representative of the runoff in the northern part of the State is the year's total for the Humboldt River at Palisade, Eureka County. Total runoff was 629,790 acre-feet, which was 232 percent of the 44-year average of 271,490 acre-feet recorded at this station. A total of 296,200 acre-feet, or 156 percent of the 14-year average of 189,680 acre-feet, was recorded for the West Walker River at Coleville, Calif., 45 miles south of Carson City, Nev. Runoff at this station was representative for the Sierra Nevada region.

Interpretation of Water-Level Fluctuations

Ground-water levels in the valleys of northern and western Nevada were at near-normal stages in March 1952. The early advent of warm weather in April hastened the runoff from record snowpacks, however, and by September water levels were substantially above normal stages, especially in the valley of the Humboldt River, its tributaries, and valleys fed by major streams heading in the Sierra Nevada. In eastern and central Nevada water levels were above normal, as indicated by both March and September measurements, except in Pahranagat Valley, Lincoln County, where a slight decline was observed.

In southern Nevada water levels were at record low stages in many of the observation wells. In Fish Lake Valley, Esmeralda County, a steady but relatively slow rate of decline has been noted since periodic measurements of water level were begun in 1947. The decline is believed to result from a substantial increase in the amount of ground water pumped for irrigation during recent years.

Artesian pressures in 15 selected observation wells in Las Vegas Valley averaged 3.64 feet lower in August 1952 than in August 1951. This decline is representative of conditions in the heavily pumped area in and adjacent to the city of Las Vegas and indicates an increasing rate of decline as compared with that of previous years. The average decline in wells 5 to 10 miles from the center of intensive development was approximately 2 feet during the same period. It is believed that the average annual lowering of artesian pressure in the valley is nearer the latter figure.

In Pahrump Valley, Clark and Nye Counties, artesian pressures in and near areas of substantial ground-water withdrawal were approximately 1.5 feet lower in February 1952 than in February 1951. A comparison of August measurements indicates a greater decline, probably on the order of 4 feet. Owing to local withdrawal of ground water for irrigation, however, the latter figure does not represent the average decline during the year.

Pumpage

Withdrawals of ground water from Las Vegas Valley have ranged from 22,100 acre-feet in 1941 to 40,400 acre-feet in 1952, including from 1,000 to 1,500 acre-feet discharged by springs owned by the Las Vegas Land and Water Co. The 1952 withdrawal represented an increase of about 20 percent over that of 1951.

In Pahrump Valley, Clark and Nye Counties a detailed inventory of ground-water withdrawal was not made in 1952. The decline in artesian pressures indicates, however, that withdrawals in 1952 were equal to or slightly in excess of the 18,000 acre-feet used in 1951. Discharge from springs was approximately one-third of the total withdrawal.

Throughout the remainder of the State no inventory was made of ground-water withdrawals in individual valleys. Inventories made in the years 1941-51, however, indicate but small variations in the annual use of ground water. On this basis, and from records of the Office of the State Engineer which show a slight increase in the number of irrigation wells in the State in 1952, it is estimated that the total withdrawal of ground water in 1952 was approximately 100,000 acre-feet.

Well-Numbering System

The number assigned to a well in this report is both an identification and 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 numeral of a well indicates the township. If the township is south of Mount Diablo base the letter "S" appears before the township number. The second numeral, separated from the township number by a slant, is the range number east of Mount Diablo meridian. The third numeral, separated from the range number by a dash, is the section number. One of the first four letters of the alphabet following the section number denotes the quarter section, a second letter, the quarter-quarter section, and a third letter, the quarter-quarter-quarter section, or 10-acre tract, if known. The letters are assigned in a counterclockwise order, "a" designating the northeast quadrant. 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 was first recorded. Thus, well number S10/60-4dab1 is used to designate the first well selected in the NW¼NE¼SE¼ sec. 4, T. 10 S., R. 60 E. Similarly, well number 12/23-22ac3 is used to designate the third well recorded in the SW¼NE¼ 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 preceding the first entry in each column of each mixed table. Readings between minus (-) signs are below the plane of reference.

Clark County

Indian Spring Valley

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 1952.

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 122.70 below lsd, May 21, 1952; lowest 124.09 below lsd, Mar. 18, 1946. Records available: 1946-52. Feb. 5, 122.76; May 21, 122.70.

S17/59-16bc1. Formerly S17/59-20bc1. U. S. Bureau of Land Management. Drilled stock well in alluvium of Quaternary age, diameter 6 inches, depth 300 feet. Highest water level 27.25 below lsd, May 14, 1952; lowest 31.01 below lsd, Sept. 12, 1944. Records available: 1944-52. Feb. 26, 27.40; May 14, 27.25; Aug. 26, 27.34; Nov. 14, 27.59.

S17/59-34a1. Desert Game Refuge. Drilled unused well in alluvium of Quaternary age, diameter 12 inches, depth 150 feet. Highest water level 22.87 below lsd, Feb. 28, 1947; lowest 24.19 below lsd, Aug. 9, 1945. Records available: 1945-52. Feb. 26, 23.21; May 14, 23.35. Measurement discontinued.

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, 1948-52. Feb. 25, +6.90; May 15, +3.65; Aug. 26, +0.95.

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 82.37 below lsd, Nov. 4, 1952. Records available: 1944-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	73.40	74.50	74.40	73.38	77.22	.....	78.72	77.90	80.73	81.02	81.05	78.50
2	73.96	73.82	74.55	73.05	77.44	.....	78.80	78.71	80.83	81.08	81.62	78.42
3	73.53	73.95	.....	73.50	76.86	77.85	79.54	78.68	80.73	81.83	82.26	79.26
4	74.30	74.75	.....	73.67	77.52	78.06	78.90	79.03	80.04	81.87	82.37	80.23
5	72.39	74.00	.....	73.79	77.75	.....	78.87	.....	80.14	80.93	81.38	80.18
6	73.54	74.01	.....	73.84	77.11	78.71	78.98	.....	80.85	81.19	80.47	80.35
7	72.14	73.94	74.08	73.86	76.40	78.85	78.94	.....	80.10	81.91	80.78	79.87
8	71.71	74.04	73.25	74.07	76.54	77.85	79.78	.....	80.89	81.17	80.88	80.67
9	71.72	74.12	72.81	74.16	76.32	78.63	79.02	.....	80.08	81.20	80.80	80.26
10	72.35	73.88	.....	74.30	76.44	78.71	78.96	.....	80.02	81.82	81.97	80.26
11	72.20	74.85	.....	75.22	76.14	78.62	78.98	80.16	80.25	82.06	81.91	80.35
12	73.03	73.30	.....	74.49	76.30	78.16	79.68	79.47	80.35	81.94	82.17	80.47
13	73.37	72.83	73.76	74.36	77.15	78.86	79.17	80.34	80.48	81.88	82.13	80.98
14	73.05	72.64	74.17	74.42	76.54	78.20	79.84	80.46	81.22	81.94	81.52	80.44
15	73.63	72.50	74.42	74.47	76.16	78.27	79.04	80.54	81.28	81.95	81.82	81.01
16	74.34	72.99	73.64	74.47	76.09	78.85	78.64	80.39	81.22	81.90	80.64	80.50
17	73.98	73.31	74.33	75.38	76.47	79.03	78.55	80.01	81.29	82.16	.....	.....
18	73.16	73.64	74.00	74.96	76.37	79.13	78.66	80.22	81.29	81.48	.....	79.43
19	73.62	72.63	74.36	74.62	76.32	78.38	79.26	80.41	80.70	81.38	.....	79.24
20	72.47	73.18	.....	74.68	77.18	78.29	79.38	79.56	81.28	81.44	.....	78.76
21	72.48	72.32	74.52	74.98	77.49	78.32	78.58	79.59	81.49	81.43	80.03	78.66
22	73.02	72.17	74.59	75.38	76.86	78.37	79.40	79.61	81.45	82.20	79.84	78.45
23	72.38	72.50	73.91	76.36	76.85	78.30	79.45	79.53	81.42	82.10	79.60	78.36
24	72.19	74.05	73.38	76.56	76.86	78.93	79.18	79.44	80.80	81.70	79.06	78.23
25	72.79	72.67	73.36	76.84	76.87	79.01	79.46	79.89	80.80	81.13	79.48	78.76
26	72.24	72.25	72.87	75.97	76.91	79.41	80.26	79.15	81.59	80.79	79.61	79.54
27	72.27	72.14	72.73	76.70	77.03	.....	80.34	79.70	80.62	80.12	78.80	79.08
28	74.12	74.44	72.49	77.04	77.00	.....	80.21	79.80	80.79	80.76	79.27	79.17
29	73.44	74.92	72.44	.....	77.37	80.63	78.58	79.84	80.98	81.11	78.60	79.26
30	73.52		72.31	.....	78.24	.....	78.40	80.71	80.46	81.82	79.17	80.03
31	73.60		72.60		77.61		78.19	80.78		81.15		79.43

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 11.6 above lsd, Aug. 30, 1952. Records available: 1946-52.

Daily noon water level, above lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	h19.2	....	19.5	17.7	16.3	....	13.5	....	....	....	....
2	....	....	....	19.0	17.5	16.3	....	13.5	....	....	....	....
3	....	....	....	19.0	17.5	16.3	....	13.7	....	h13.5	....	....
4	h19.0	....	....	18.8	17.7	16.3	....	13.7	....	....	....	h14.4
5	....	....	....	18.8	17.7	16.3	....	14.5	....	....	....	....
6	....	....	h19.0	18.5	17.7	16.1	....	14.5	h12.0	....	....	....
7	....	....	....	18.3	17.7	15.8	14.5	14.5	....	....	h13.7	....
8	....	h19.2	....	18.0	17.5	15.6	14.5	14.5	....	....	....	....
9	....	....	....	17.5	17.5	15.3	14.5	15.3	....	....	....	....
10	....	....	....	17.5	17.5	15.1	14.5	15.3	....	h12.9	....	....
11	h19.3	h19.4	....	17.4	17.5	14.9	14.5	15.3	....	....	....	h14.1
12	....	....	h19.5	17.4	17.6	14.5	14.5	13.9	....	....	....	....
13	....	....	....	17.4	17.7	14.5	14.5	13.9	h13.2	....	....	....
14	....	....	....	17.4	17.7	14.5	14.5	13.8	....	....	h13.5	....
15	....	....	....	17.0	17.7	14.5	14.6	13.8	....	....	....	....

S19/60-27bdc1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	....	....	....	17.0	17.7	14.5	14.6	13.8	....	....	....	....
17	....	....	....	17.0	17.8	14.3	14.6	13.7	....	h13.3	....	....
18	h19.1	h19.4	....	17.0	17.9	14.3	14.5	13.6	....	....	....	h14.4
19	....	....	....	17.0	17.8	14.3	15.2	....	h13.6	....	....	....
20	....	....	....	17.0	17.9	14.3	15.0	....	....	....	....	....
21	....	....	h19.8	17.0	17.5	14.5	13.3	....	....	....	h14.1	....
22	....	....	....	17.0	17.3	14.4	14.0	....	....	....	....	h14.7
23	....	....	....	17.0	17.1	14.4	14.0	....	....	....	....	....
24	....	....	....	17.0	16.9	14.5	13.7	....	....	h13.5	....	....
25	h19.6	h19.3	....	17.0	16.7	14.5	13.8	h12.6	....	....	....	....
26	....	....	....	16.8	16.5	14.5	13.8	....	h13.7	....	....	....
27	....	....	....	16.9	16.4	....	14.4	....	....	....	....	....
28	....	....	19.5	17.0	16.2	....	14.3	....	....	....	h14.5	....
29	....	....	19.5	17.3	16.0	....	13.3	....	....	....	....	h15.0
30	....		19.5	17.3	16.2	....	13.4	h11.6	....	....	....	....
31	....		19.5		16.2		13.4	....		h13.8		....

h Tape measurement.

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 8.78 below lsd, Oct. 22, 23, 1952. Records available: 1946-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.25	2.60	2.44	2.30	4.49	5.62	7.38	6.93	8.20	7.83	7.96	6.72
2	2.25	2.61	2.60	2.19	4.52	5.62	7.45	6.73	8.20	7.85	8.14	6.57
3	2.42	2.74	2.76	2.67	4.60	5.64	7.51	6.73	8.10	7.90	8.18	6.68
4	2.50	2.77	....	2.96	4.64	5.69	7.54	6.78	8.10	7.94	8.24	6.87
5	2.62	2.78	....	3.28	4.74	5.86	7.60	7.03	8.06	7.91	8.10	6.92
6	2.62	2.82	....	3.41	4.83	5.94	7.64	6.93	8.07	8.00	7.87	6.95
7	2.58	2.78	2.67	3.64	4.78	6.40	7.64	6.92	8.11	8.07	7.62	7.09
8	2.45	2.80	2.60	3.80	4.80	6.48	7.32	6.93	8.10	8.17	7.62	7.20
9	2.49	2.84	2.41	3.87	4.84	6.50	7.18	7.02	8.08	8.37	7.66	7.47
10	2.20	2.73	2.17	3.86	4.78	6.70	7.24	7.01	7.91	8.40	7.86	7.49
11	2.04	2.51	2.31	4.25	4.63	6.79	7.20	7.00	8.09	8.32	7.95	7.52
12	1.96	2.33	2.39	4.46	4.60	6.98	7.24	7.11	7.90	8.18	8.00	7.61
13	2.15	2.40	2.30	4.38	4.63	6.48	7.24	7.08	7.80	8.12	8.06	7.50
14	2.20	2.29	2.44	4.46	4.67	6.74	7.27	7.05	7.77	8.08	8.08	7.55
15	2.38	2.19	2.52	4.54	4.62	6.96	7.23	7.07	7.85	8.41	7.91	7.48
16	2.43	1.99	2.50	4.48	4.63	6.94	7.17	7.05	7.76	8.48	8.07	7.55
17	2.65	2.11	2.50	4.46	4.87	6.98	7.15	7.04	7.67	8.74	7.98	7.37
18	2.52	2.39	2.62	4.50	4.87	7.04	7.41	6.90	7.61	8.75	7.92	7.37
19	....	2.36	2.58	4.34	4.81	7.21	7.46	7.03	7.67	8.72	7.61	7.24
20	....	2.17	....	4.38	4.73	7.18	7.73	7.09	7.51	8.74	7.49	6.88
21	2.15	2.09	2.70	4.51	4.98	6.92	....	7.27	7.61	8.76	7.28	6.84
22	2.14	2.05	2.77	4.68	5.08	6.86	7.13	7.31	....	8.78	7.20	6.67
23	2.11	1.97	2.81	4.71	5.15	6.81	7.20	7.31	....	8.78	7.08	6.51
24	1.95	2.27	2.56	4.74	5.45	6.87	7.40	7.30	....	8.37	....	6.41
25	1.79	2.52	2.67	4.41	5.50	6.84	7.49	7.36	....	8.06	....	6.35
26	1.97	2.25	2.45	4.27	5.71	7.01	7.48	7.52	....	7.80	....	6.34
27	2.04	2.00	2.37	4.27	5.86	7.15	7.55	7.63	7.66	7.70	....	6.52
28	2.25	2.11	2.21	4.34	5.86	7.15	7.58	7.85	7.66	7.63	6.78	6.62
29	2.34	2.44	2.13	4.36	5.85	7.23	7.53	7.95	7.78	7.82	6.78	6.71
30	2.40		2.16	4.45	5.61	7.14	7.18	8.08	7.84	7.84	6.59	6.78
31	2.48		2.22		5.58		6.99	8.16		7.99		6.85

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 75.83 below lsd, Nov. 12, 1952. Records available: 1947-52. Feb. 8, 72.00; May 8, 72.82; Aug. 26, 75.20; Nov. 12, 75.83.

S20/60-36dbb1. M. D. Kidder (State Engineer No. 553). Drilled unused artesian well, diameter 8 inches, depth 385 feet, 8-inch casing to 262, 6-inch casing to 345, 4-inch casing to 381. Land-surface datum is 2,228.2 feet above msl. Highest water level 3.00 below lsd, summer 1925; lowest 62.95 below lsd, Sept. 5-6, 1952. Records available: 1925, 1927, 1931-32, 1935-36, 1938-41, 1945-52.

S20/60-36dbb1--Continued.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	53.10	52.49	52.80	54.10	54.46	59.08	62.00	61.83	62.38	61.06	60.27	57.63
2	53.10	52.41	.....	54.28	54.80	59.16	60.14	.....	62.68	61.11	60.11	57.54
3	52.87	52.43	52.78	54.19	55.40	58.72	61.26	61.89	62.60	60.93	60.06	57.42
4	52.54	52.50	.....	54.00	55.30	59.08	61.13	61.90	62.85	60.90	60.27	57.77
5	52.86	52.63	.....	54.66	55.60	59.30	61.31	62.15	62.95	60.76	60.26	57.02
6	52.62	52.67	52.86	54.50	55.84	59.58	61.11	62.12	62.95	60.76	60.15	57.50
7	52.88	52.60	52.80	54.48	55.79	59.53	61.30	62.10	62.46	60.92	59.93	57.30
8	53.10	52.57	52.32	54.30	56.00	59.42	61.43	62.41	62.73	60.78	59.78	57.39
9	53.16	52.57	52.09	54.72	56.39	59.57	61.24	62.48	62.80	60.72	59.83	57.81
10	52.86	52.28	52.02	53.86	56.46	59.78	61.34	62.31	62.65	60.88	59.84	57.83
11	52.77	52.23	51.72	54.10	56.26	59.77	61.55	62.41	62.50	60.70	59.76	57.62
12	52.79	52.28	51.89	54.50	56.70	59.89	61.41	62.58	62.57	60.68	59.56	57.26
13	52.74	52.21	51.94	54.40	57.10	60.03	61.55	62.54	62.19	60.84	59.50	58.41
14	52.77	52.00	52.20	54.37	57.14	60.28	61.44	62.64	62.15	60.76	59.28	57.02
15	52.72	52.24	51.95	54.90	57.30	60.22	61.53	62.64	62.31	60.88	59.02	57.31
16	52.60	52.21	51.77	55.42	56.66	60.28	61.52	62.15	62.34	60.59	58.97	57.05
17	52.73	52.12	51.88	55.48	56.84	60.35	61.68	62.47	62.55	60.74	58.80	57.29
18	52.36	52.32	51.84	55.86	.....	60.33	61.67	62.50	62.67	60.42	59.42	57.37
19	.....	52.50	51.84	55.70	.....	60.44	61.86	62.40	62.33	60.54	58.80	56.56
20	.....	52.38	52.18	54.40	.....	.....	61.92	62.54	60.53	60.95	58.40	56.53
21	52.47	52.40	51.98	54.27	.....	.....	61.65	62.70	60.06	60.76	58.49	56.54
22	52.53	52.49	52.16	.....	58.10	60.55	61.93	62.71	59.95	60.86	58.33	56.49
23	52.47	52.50	52.18	55.00	58.99	60.77	62.05	62.70	60.05	60.79	58.93	56.51
24	52.38	53.15	52.20	55.48	58.18	60.73	62.04	62.71	60.12	60.50	58.22	56.57
25	52.31	53.10	52.92	54.41	58.20	60.82	62.09	62.65	60.47	61.04	58.27	56.40
26	52.40	52.89	53.10	54.62	58.74	60.74	61.64	62.60	60.44	60.74	58.29	56.38
27	52.59	53.00	53.78	54.56	59.30	60.79	61.70	62.63	60.47	60.25	58.14	56.29
28	52.51	53.34	53.50	53.60	59.01	60.90	62.15	62.74	60.44	60.08	58.23	56.17
29	52.61	53.50	54.10	53.52	59.13	60.86	61.36	62.47	60.57	59.89	57.83	56.37
30	52.83		53.70	53.57	59.13	60.96	60.96	62.41	60.53	60.16	57.44	56.21
31	52.65		54.06		59.13		.....	62.22		60.15		56.17

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 56.22 below lsd, Aug. 26, 1952. Records available: 1944-52. Feb. 21, 39.14; May 9, 42.40; Aug. 26, 56.22; Nov. 12, 55.94.

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 44.90 below lsd, Nov. 12, 1952. Records available: 1944-52. Feb. 15, 43.86; May 9, 43.88; Aug. 26, 44.60; Nov. 12, 44.90.

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 18.39 below lsd, Nov. 13, 1952. Records available: 1944-52. Feb. 15, 14.24; May 9, 15.85; Aug. 27, 18.20; Nov. 13, 18.39.

S20/61-18bcc1. Sky Haven Airport (State Engineer No. 505). At southeast corner of hangar. Drilled irrigation and domestic artesian well, diameter 6 inches, depth 412 feet. Highest water level 1.84 below lsd, Jan. 23, 1945; lowest 24.68 below lsd, Nov. 12, 1952. Records available: 1944-52. Feb. 8, 18.99; May 8, 20.84; Aug. 26, 24.57; Nov. 12, 24.68.

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 7.77 below lsd, Aug. 26, 1952. Records available: 1939-52. Feb. 11, +0.80; May 14, -2.45; Aug. 26, -7.77; Sept. 26, -5.82; Oct. 31, -6.12; Nov. 12, -4.93.

S20/61-19bcc1. Replaces well S21/61-18bcc1. Jones (State Engineer No. 4). Drilled unused artesian well, depth 244 feet, diameter 12 inches. Land-surface datum is 2,200 feet above msl. Highest water level 0.19 above lsd, Mar. 17, 1944; lowest 28.20 below lsd, Aug. 21, 1952. Records available: 1944-47, 1952.

S20/61-19bcc1--Continued.

Daily noon water level from recorder graph*

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	20.87	24.46	25.64	26.49	27.05	26.88	26.08	24.13
2	.....	21.18	24.60	26.35	27.05	27.25	27.25	26.09	24.06
3	.....	21.42	24.82	26.54	26.85	27.20	26.31	25.97	23.95
4	.....	22.07	24.87	25.99	26.67	28.10	26.81	25.93	24.10
5	.....	21.80	24.63	26.94	27.65	28.13	26.14	25.90	23.58
6	.....	21.73	24.67	26.09	26.82	27.87	26.71	25.57	23.62
7	.....	.....	24.78	26.90	26.97	27.11	26.91	.....	23.58
8	.....	22.23	25.45	26.79	27.71	27.94	26.40	25.77	24.13
9	.....	22.32	24.91	26.22	27.49	27.40	26.20	25.50	24.03
10	.....	22.33	25.11	26.34	27.11	27.12	.....	.....	23.96
11	.....	22.55	24.69	26.83	27.28	27.28	26.39	.....	24.02
12	.....	22.84	24.92	26.26	27.59	27.15	26.26	.....	23.70
13	.....	22.96	24.98	26.97	27.81	26.93	26.43	.....	23.63
14	.....	22.71	25.69	26.29	27.69	27.06	27.09	25.02	23.73
15	.....	22.97	25.19	26.43	27.21	27.43	.....	24.86	23.66
16	.....	22.82	25.45	26.33	27.07	27.73	.....	24.74	23.60
17	.....	22.78	26.15	26.47	27.45	27.61	26.24	24.86	23.44
18	.....	22.73	25.16	26.32	27.10	27.32	26.44	24.77	23.46
19	.....	23.21	25.64	27.09	27.02	27.07	26.51	24.53	23.27
20	.....	23.65	25.53	26.91	26.97	.....	.....	24.33	23.12
21	.....	23.62	25.57	26.53	28.20	25.35	.....	24.27	23.32
22	21.35	23.62	25.58	26.78	27.25	25.45	.....	24.28	23.14
23	.....	23.57	26.05	26.55	27.68	25.61	.....	24.12	23.20
24	21.48	24.25	26.31	26.99	27.12	.....	.....	24.19	23.13
25	21.09	24.69	26.55	27.37	27.81	.....	26.07	24.44	23.23
26	21.05	.....	25.84	26.47	27.40	25.62	25.98	24.31	23.22
27	21.08	.....	25.80	26.95	27.57	25.67	25.99	24.26	23.07
28	.....	.....	26.39	27.32	27.98	25.66	25.82	24.26	23.09
29	.....	24.61	26.31	26.55	26.86	25.85	25.78	24.13	.....
30	.....	24.36	26.07	26.53	27.52	25.87	26.08	24.11	22.98
31		24.90		26.54	26.75		26.08		22.98

* No record for January, February, and March.

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 18.18 below lsd, Aug. 27, 1952. Records available: 1944-52. Feb. 15, 5.92; May 9, 7.71; Aug. 27, 18.18; Nov. 13, 12.40.

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 20.44 below lsd, Aug. 26, 1952. Records available: 1944-52. Feb. 15, 5.68; May 8, 7.92; Aug. 26, 20.44; Nov. 13, 13.83.

S20/61-28aba1. A. Zaugg. Dug stock water-table well, diameter 5 feet, depth 10 feet. Highest water level 7.44 below lsd, Apr. 27, 1951; lowest 9.75 below lsd, Sept. 28, 1945. Records available: 1945-52. Jan. 25; 8.08; Feb. 15, 7.98; Mar. 21, 7.65; Apr. 24, 7.47; May 20, 7.67; Aug. 27, dry. Measurement discontinued.

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 8.9 above lsd, Aug. 13, 1952. Records available: 1940-52. Feb. 18, +26.8; May 5, +24.2; Aug. 13, +8.9; Nov. 13, +17.4.

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 3.5 above lsd, Aug. 13, 1952. Records available: 1940-52. Feb. 18, +19.4; May 5, +17.0; Aug. 13, +3.5; Nov. 13, +10.8; Nov. 14, +11.2.

S20/61-29dbb1. John Papus (State Engineer No. 380). Drilled unused artesian well, diameter 8 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 16.1 above lsd, Aug. 26, 1952. Records available: 1943-52. Feb. 8, +35.0; May 8, +28.4; Aug. 26, +16.1; Nov. 12, +24.2.

S20/61-30bbb2. City of Las Vegas (State Engineer No. 110). Drilled municipal artesian well, diameter 8 inches, depth 830 feet. Land-surface datum is 2,201 feet above msl. Highest water level flowing, Jan. 28, 1946; lowest 23.22 below lsd, Aug. 23, 1951. Records available: 1945-52. May 8, 21.34. Measurement discontinued.

S20/61-30bcc1. U. S. Geol. Survey. Drilled test and observation water-table well, diameter 2 inches, depth 24 feet, cased to 20. Highest water level 20.15 below lsd, May 16, 1946; lowest dry, Aug. 23, Nov. 8, 1951, Feb. 26, 1952. Records available: 1946-52. Feb. 26, dry. Measurement discontinued.

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 7.6 above lsd, Aug. 26, 1952. Records available: 1950-52. Feb. 19, +28.3; May 8, +22.5; Aug. 26, +7.6; Nov. 12, +20.6.

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: 1939-52. Feb. 21, +32.3; May 16, +30.5; Aug. 28, +19.2; Nov. 12, +20.9.

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 16.8 above lsd, Sept. 6, 1952. Records available: 1945-52.

Daily noon water level, above lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	h36.9	....	35.7	35.3	28.2	24.7	....	17.9	21.2	23.7	....
2	....	....	....	35.6	34.7	28.4	24.5	....	17.7	21.1	23.9	....
3	....	....	h36.7	35.4	34.4	28.4	24.5	....	17.3	20.7	23.9	....
4	h36.7	....	....	35.4	34.5	28.3	23.6	....	17.1	20.9	24.3	....
5	....	....	....	35.2	34.2	27.9	23.5	....	17.0	20.7	24.2	....
6	....	....	....	34.7	33.9	28.0	23.5	....	16.8	20.7	24.2	....
7	....	....	....	35.5	32.7	28.0	23.1	19.0	16.9	20.5	24.7	....
8	....	h37.5	....	35.5	32.6	27.7	22.9	17.9	17.0	20.4	25.2	h29.3
9	....	....	....	34.3	33.4	27.6	23.1	17.9	17.3	20.7	25.7	....
10	....	....	h37.0	33.2	33.0	27.6	....	18.1	17.2	20.7	25.9	....
11	h35.6	h36.8	....	33.5	32.7	27.7	....	18.2	17.7	20.9	26.3	....
12	....	....	....	34.2	32.7	27.5	....	18.1	17.7	20.9	26.6	....
13	....	....	....	33.7	32.2	27.2	....	18.0	18.1	21.1	26.7	....
14	....	....	....	33.5	32.2	27.1	22.6	17.9	17.9	20.9	27.1	....
15	....	....	....	34.5	32.0	26.7	22.5	18.1	18.0	21.5	27.2	h29.9
16	....	....	....	34.5	32.0	26.5	22.6	18.2	....	....	27.5	....
17	....	....	....	33.7	31.8	26.7	....	18.1	....	....	27.5	....
18	h36.2	h36.5	....	33.5	31.7	26.6	....	18.0	18.2	....	27.7	....
19	....	....	h37.0	33.9	31.5	26.2	....	17.9	18.7	....	28.1	....
20	....	....	....	34.0	31.6	25.7	....	17.9	19.5	....	28.5	....
21	....	....	....	34.2	31.6	25.4	....	....	19.7	22.2	29.0	....
22	....	....	....	34.4	31.2	25.5	....	18.0	20.1	22.4	29.0	h30.4
23	....	....	....	34.7	31.1	25.3	....	17.7	20.7	22.1	29.1	....
24	....	....	....	34.3	30.9	....	....	17.9	20.7	22.1	....	....
25	h36.9	h36.2	....	34.7	30.0	24.9	....	18.0	21.0	22.1	....	....
26	....	....	....	34.7	29.7	24.8	....	18.0	21.0	22.7	....	....
27	....	....	....	34.7	29.7	24.7	....	18.2	20.9	22.9	....	....
28	....	....	36.3	34.9	29.5	24.7	....	18.2	21.2	23.1	....	....
29	....	....	36.2	35.1	29.0	24.8	....	18.3	21.2	23.1	h29.2	h30.9
30	....		35.9	35.3	28.5	24.7	....	18.0	21.2	23.4	....	....
31	....		35.9		28.5		....	18.3		....		....

h Tape measurement.

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: 1944-52. Feb. 20, +22.7; May 8, +19.1; Aug. 27, +6.4; Nov. 12, +17.4.

S20/62-3bbd1. Las Vegas Army Air Field. Drilled unused well, diameter 8 inches, depth 242 feet, cased to 200, perforations 120-200. Highest water level 50.17 below lsd, May 27, 1948; lowest 69.27 below lsd, May 9, 1952. Records available: 1945, 1947-52. Feb. 21, 62.05, nearby well being pumped; May 9, 69.27, nearby well being pumped; Nov. 12, 68.05.

S20/62-19bcc1. Byron Thornton (State Engineer No. 443). Drilled domestic and irrigation well, diameter 8 inches, depth 150 feet. Highest water level 29.58 below lsd, May 5, 1945; lowest 34.83 below lsd, Nov. 16, 1951. Records available: 1945-52. Feb. 4, 34.18; May 5, 33.98.

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 17.04 below lsd, May 12, 1952; lowest 25.32 below lsd, Dec. 28, 1945. Records available: 1945-52. Feb. 20, 17.83; May 12, 17.04; Aug. 28, 17.84; Nov. 6, 17.18; Nov. 12, 17.12.

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 9.8 above lsd, Aug. 27, 1952. Records available: 1944-52. Feb. 21, +35.1; May 18, +29.2; Aug. 27, +9.8; Nov. 11, +18.5.

S21/61-4aad1. Opaco Lumber Co. (State Engineer No. 386). Drilled unused artesian well, diameter 10 inches, depth 793 feet, cased to 770, perforations from 338-438 and 642-770. Highest water level 46.5 above lsd, Feb. 19, 1948, Feb. 21, 1952; lowest 17.0 above lsd, Aug. 21, 1944. Records available: 1944-52. Feb. 21, +46.5; May 13, +37.7; Aug. 27, +18.8; Nov. 12, +28.6.

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 13.50 below lsd, Aug. 27, 1952. Records available: 1940-52. Feb. 8, 4.53; May 14, 7.06; Aug. 27, 13.50; Nov. 7, 11.90; Nov. 12, 11.53.

S21/61-15bbb1. T. T. Schofield. Dug domestic and irrigation water-table well, diameter 5 feet, depth 9 feet. Highest water level 3.12 below lsd, Nov. 11, 1952; lowest 7.94 below lsd, Sept. 16, 1945. Records available: 1945-52. Feb. 15, 5.17; May 7, 5.02; Aug. 28, 3.85; Nov. 11, 3.12.

S21/61-18bcc1. Henry Deadrich (State Engineer No. 29). Drilled unused artesian well, diameter 8 inches, depth 292 feet. Highest water level 21.45 below lsd, Nov. 21, 1930; lowest 52.07 below lsd, Sept. 27, 1951. Records available: 1930, 1938-42, 1946-52. Measurement discontinued.

Daily noon water level from recorder graph

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 1	49.87	Jan. 27	49.53	Feb. 20	49.37	Mar. 24	49.30
2	49.90	28	49.91	21	49.34	25	49.41
3	49.89	29	49.41	22	49.38	26	49.42
4	49.80	30	49.39	23	49.42	27	49.53
5	49.80	31	49.38	24	49.55	28	49.48
6	49.73	Feb. 1	49.42	25	49.63	29	49.48
7	49.64	2	49.32	26	49.58	30	49.55
8	49.69	3	49.43	27	49.47	31	49.63
9	49.85	4	49.42	28	50.50	Apr. 1	49.71
10	49.69	5	49.39	29	50.52	2	49.67
11	49.61	6	49.41	Mar. 1	49.39	3	49.74
12	49.60	7	49.34	2	49.44	4	49.75
13	49.56	8	49.32	3	49.58	5	49.76
14	49.60	9	49.34	7	49.53	6	49.80
15	49.57	10	49.34	8	49.48	7	49.80
16	49.56	11	49.34	9	49.40	8	49.83
17	49.60	12	49.33	10	49.38	9	49.93
18	49.42	13	49.39	11	49.38	10	49.82
21	49.47	14	49.39	12	49.47	11	49.80
22	49.49	15	49.38	13	49.30	12	49.91
23	49.49	16	48.79	14	49.37	13	49.91
24	50.41	17	49.26	21	49.36	14	49.92
25	50.37	18	49.34	22	49.43	15	49.98
26	50.43	19	49.37	23	49.43	16	50.07

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 5.3 above lsd, Aug. 28, 1952. Records available: 1940-52. Feb. 7, +20.4; May 6, +18.2; Aug. 15, +5.6; Aug. 28, +5.3; Sept. 22, +8.7; Oct. 23, +10.4; Nov. 11, +13.7.

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 22.01 below lsd, Nov. 18, 1952. Records available: 1944-52.

Jan. 21	20.99	Apr. 17	20.54	July 15	21.63	Oct. 17	21.74
Feb. 19	20.78	May 14	20.39	Aug. 15	21.92	Nov. 18	22.01
Mar. 20	20.71	June 17	20.62	28	21.50	Dec. 17	21.72

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 8.7 above lsd, Aug. 28, 1952. Records available: 1940-52. Feb. 19, +23.3; May 7, +19.2; Aug. 28, +8.7; Nov. 11, +13.1.

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 7.42 below lsd, Nov. 11, 1952. Records available: 1944-46, 1950-52. Feb. 7, 4.64; May 8, 5.57; Aug. 28, 7.32; Nov. 11, 7.42.

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 9.65 below lsd, Apr. 22, 1948. Records available: 1938-52. Feb. 7, 5.25; May 7, 6.72; Aug. 28, 9.20; Nov. 11, 9.58.

S21/61-34ccc1. Public domain. Dug unused water-table well, diameter 5 feet, depth 25 feet. Highest water level 23.03 below lsd, Apr. 30, 1945; lowest 25.11 below lsd, Aug. 10, 1949. Records available: 1944-51. Measurement discontinued.

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 14.24 below lsd, Aug. 29, 1952. Records available: 1944-52. Feb. 7, 7.52; May 8, 8.75; Aug. 29, 14.24; Nov. 11, 12.88.

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 12.56 below lsd, Nov. 11, 1952. Records available: 1946-52. Feb. 19, 11.50; May 8, 11.14; Aug. 28, 12.32; Nov. 11, 12.56.

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 4.20 below lsd, Aug. 28, 1952. Records available: 1945-52. Feb. 19, +2.04; May 17, +1.10; Aug. 28, -4.20; Nov. 6, -3.90.

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 29.2 above lsd, Aug. 13, 1948. Records available: 1944-52. Feb. 19, +37.3; May 12, +35.0; Aug. 28, +30.1; Nov. 12, +33.2.

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; lowest 5.05 below lsd, Aug. 19, 1947. Records available: 1945-52. Feb. 20, 4.24; May 13, 4.14; Sept. 4, 4.59; Nov. 20, 4.39; Dec. 16, 4.30.

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 18.4 above lsd, Aug. 25, 1944; lowest 2.70 above lsd, Aug. 15, 1947. Records available: 1944-52. Feb. 19, +11.3; May 13, +12.6; Aug. 28, +3.5; Nov. 11, +3.5

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 88.24 below lsd, July 22, 1952. Records available: 1938-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	81.91	81.98	82.90	83.13	83.59	85.52	86.04	.....	86.98	.....	84.85	86.34
2	81.95	.....	83.10	83.08	83.50	85.41	86.49	.....	87.88	85.82	84.97	86.34
3	81.93	.....	.....	83.00	83.54	85.75	85.68	.....	87.31	.....	85.04	86.33
4	.....	.....	.....	83.12	83.65	85.48	85.44	.....	87.39	.....	85.02	86.44
5	.....	.....	.....	83.19	83.65	85.37	85.20	.....	87.22	.....	85.01	86.30
6	.....	.....	.....	83.16	.....	85.05	85.20	.....	87.11	.....	85.01	86.32
7	.....	82.29	83.14	83.11	.....	85.00	87.24	.....	86.94	.....	85.68	86.29
8	.....	82.45	83.33	83.16	84.42	84.99	87.97	.....	86.84	85.50	87.52	85.55
9	.....	82.55	83.08	83.27	84.86	85.01	88.09	.....	86.15	.....	87.10	85.30
10	.....	82.59	83.13	83.09	84.99	.....	87.98	.....	85.80	85.56	87.56	85.09
11	81.78	82.64	83.18	83.30	85.12	84.86	88.02	86.47	85.76	85.38	88.15	84.88
12	81.76	82.68	83.15	83.49	84.42	84.88	88.08	86.60	85.70	85.38	87.90	84.78
13	81.70	82.74	82.84	83.48	84.32	84.72	88.18	87.57	85.64	85.39	87.34	84.60
14	81.81	82.74	82.98	83.47	84.25	84.71	86.10	87.01	85.70	.....	86.24	84.52
15	81.78	82.72	82.92	83.55	83.03	84.69	85.99	87.00	85.50	85.46	85.83	84.42
16	81.76	82.63	82.83	83.54	83.97	84.71	86.07	86.92	85.46	85.55	85.58	84.44
17	81.88	82.54	83.04	83.63	83.78	84.76	85.76	86.89	85.45	85.30	85.55	84.44
18	81.62	82.62	83.11	83.64	83.99	84.76	85.70	86.85	.....	85.21	85.46	84.36
19	81.84	82.66	83.11	.....	84.13	84.70	87.00	86.65	.....	85.88	85.35	84.31
20	81.69	82.55	83.17	.....	84.15	84.69	86.60	86.87	.....	85.47	85.22	84.14

S22/61-4bcc1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	81.74	82.71	83.03	.....	84.25	84.69	.....	86.80	.....	85.88	85.13	84.27
22	81.80	82.82	83.08	.....	84.21	84.77	88.24	86.68	.....	86.02	85.16	84.16
23	81.83	82.91	82.85	83.54	84.18	84.84	87.68	87.04	.....	86.11	85.09	.....
24	81.75	83.08	82.96	.....	84.27	83.07	86.83	86.92	.....	85.46	85.08	.....
25	81.78	83.14	82.97	.....	84.24	84.85	86.32	86.34	.....	85.17	85.05	.....
26	81.91	83.09	.....	83.37	84.24	84.87	86.08	86.08	86.38	85.15	85.01	.....
27	82.01	83.03	82.91	83.48	86.54	84.96	85.92	86.06	85.83	85.10	85.08	.....
28	81.98	83.02	83.01	83.55	86.76	84.96	85.75	86.64	85.96	85.20	85.03	.....
29	81.88	83.02	82.44	83.55	86.22	84.96	85.67	86.81	85.70	85.04	85.87	84.03
30	81.86		83.00	83.63	87.60	84.99	85.53	86.93	.....	84.94	86.13	84.01
31	81.88		83.07		85.98		85.55	86.97		84.88		84.09

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 98.84 below lsd, Nov. 11, 1952. Records available: 1944-52. Feb. 7, 97.98; May 7, 98.13; Aug. 29, 98.39; Nov. 11, 98.84.

S22/61-16ccc1. Dalton Buck. Drilled unused well, diameter 10 inches. Highest water level 83.63 below lsd, Sept. 22, 1944; lowest 88.44 below lsd, Aug. 29, 1952. Records available: 1944-52. Feb. 7, 88.07; May 7, 88.13; Aug. 29, 88.44; Nov. 11, 88.32.

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 38.48 below lsd, Sept. 12, 1952. Records available: 1944-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.41	30.81	29.81	32.60	33.92	35.79	.....	37.78	38.28	36.28	36.59	34.36
2	31.39	30.72	30.11	32.68	34.20	35.87	.....	37.76	38.31	36.38	36.46	34.30
3	31.30	30.80	30.30	32.93	34.92	35.70	.....	37.62	38.31	36.38	35.78	34.46
4	31.15	30.75	30.15	33.46	35.16	35.95	.....	37.70	38.34	36.67	35.25	34.45
5	31.14	30.67	30.15	.....	35.20	35.87	.....	37.90	38.36	36.76	35.05	34.09
6	31.07	30.58	30.03	.....	35.22	35.63	36.55	37.91	38.34	36.41	35.02	34.17
7	31.08	30.45	29.98	33.85	34.90	35.86	36.71	37.81	38.31	36.42	35.03	34.13
8	31.21	30.46	29.95	33.63	34.52	35.89	36.75	37.90	.....	36.32	34.98	33.82
9	31.40	30.48	29.95	33.70	34.59	.....	36.85	37.93	38.37	35.85	35.04	33.88
10	31.05	30.50	29.90	33.61	34.71	.....	36.83	37.90	38.31	36.03	35.21	33.69
11	31.00	30.50	29.98	34.26	34.70	35.22	37.17	37.79	38.43	36.28	35.27	33.61
12	30.97	30.52	30.07	34.75	.....	35.60	37.32	37.91	38.48	36.21	35.10	33.63
13	30.75	30.55	29.95	34.46	.....	36.00	36.73	38.01	38.10	35.84	34.62	33.48
14	31.06	30.50	30.06	34.62	.....	36.41	36.50	37.92	38.05	36.05	35.21	33.33
15	31.00	30.45	29.89	34.96	34.91	36.51	36.90	38.05	38.22	36.06	34.62	.....
16	30.93	30.22	.....	35.10	34.44	36.52	37.25	38.01	38.34	35.30	.....	.....
17	31.03	30.18	29.83	35.19	34.18	36.12	37.33	38.01	38.48	35.33	34.42	.....
18	30.87	30.36	29.95	34.72	34.55	36.32	36.44	37.97	38.27	35.67	34.36	.....
19	31.05	30.37	30.20	34.97	34.05	36.23	37.51	38.05	38.16	35.49	34.81	.....
20	30.86	30.26	30.21	35.34	34.16	36.55	37.40	38.08	.....	35.15	34.92	.....
21	30.93	30.23	30.08	34.92	35.02	36.68	37.61	37.99	37.13	34.91	34.83	33.37
22	31.02	30.24	30.25	35.11	35.40	36.34	37.66	38.10	37.15	.....	34.98	33.20
23	30.95	30.26	30.48	34.82	35.62	36.75	37.69	38.07	37.12	.....	34.71	33.12
24	30.80	30.35	29.81	35.20	35.20	36.89	37.71	.....	37.23	.....	34.75	33.09
25	30.79	30.39	29.97	35.15	34.92	36.39	37.31	.....	37.20	.....	34.90	33.12
26	30.96	30.22	29.88	34.81	34.35	36.33	37.46	.....	37.13	.....	34.78	33.09
27	31.04	30.13	30.42	34.71	34.69	36.21	37.30	38.22	37.16	.....	34.72	32.87
28	30.99	30.12	30.16	.....	34.55	36.40	37.37	38.23	36.80	36.05	34.65	32.90
29	30.79	30.05	30.30	34.06	34.59	36.75	37.64	38.12	36.35	38.00	34.43	32.93
30	30.77		30.87	34.00	35.83	.....	37.69	38.26	36.21	35.99	34.37	32.78
31	30.76		.....		35.87		37.66	38.28		35.97		32.87

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: 1948-52. Mar. 13, 18.53; Sept. 18, 11.08; Dec. 23, 14.39.

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 3.96 below lsd, Sept. 26, 1950. Records available: 1942, 1948-52. Mar. 13, 0.95.

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: 1948-52. Mar. 13, 1.44; Sept. 18, 0.51; Dec. 23, 1.31.

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: 1950-52. Mar. 13, 2.81; Sept. 18, 2.12; Dec. 23, 2.57.

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 10.09 below lsd, Nov. 4, 1949. Records available: 1948-52. Mar. 13, 9.57; Sept. 18, 8.20; Dec. 23, 8.83.

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, 1948-52. Mar. 17, 11.04.

Elko County

Clover Valley

34/63-21a1. Leslie Davis. Dug unused water-table well, diameter 9 feet, cribbed with concrete. Highest water level 12.38 below lsd, Sept. 29, 1952; lowest 12.58 below lsd, Aug. 25, 1948, Mar. 27, 1951. Records available: 1948-52. Sept. 29, 12.38.

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: 1948-52. Sept. 29, 7.10.

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. Records available: 1949-52. Sept. 29, 8.09; Nov. 5, 8.38; Nov. 25, 8.39.

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 9.77 below lsd, Dec. 21, 1949. Records available: 1949-52. Sept. 29, 7.10; Nov. 5, 7.33; Nov. 25, 7.41.

Goshute-Antelope Valley

34/67-6a2. Western Pacific Railroad 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: 1948-52. Sept. 30, 29.26.

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. Sept. 30, 42.75.

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: 1938-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 19	5.25	Apr. 21	3.19	Sept. 2	5.37	Oct. 19	6.96
Feb. 25	5.75	May 19	3.06	19	5.64	Nov. 19	6.08
Mar. 24	5.37	June 17	3.47	29	6.89	Dec. 18	6.10

33/53-20d2. C. E. Lee. Dug domestic water-table well, diameter 24 inches, depth 18 feet. Highest water level 10.60 below lsd, June 28, 1951; lowest 13.90 below lsd, Dec. 26, 1951. Records available: 1951-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	13.50	Apr. 26	11.40	July 28	11.60	Oct. 28	12.20
Mar. 4	13.70	May 28	10.90	Aug. 28	11.90	Nov. 28	13.40
26	11.70	June 26	10.70	Sept. 28	12.10	Dec. 26	11.60

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: 1944-52.

Jan. 28	5.20	Apr. 26	3.10	July 28	4.60	Oct. 28	5.70
Mar. 4	5.20	May 28	2.90	Aug. 28	4.90	Nov. 28	4.20
26	2.50	June 26	4.10	Sept. 28	5.20	Dec. 26	3.40

35/56-30c1. Fernald. Dug unused water-table well, depth 20 feet. Highest water level 5.20 below lsd, May 28, 1950; lowest 16.20 below lsd, Jan. 26, 1950. Records available: 1938-52.

Jan. 28	12.40	Apr. 26	12.10	July 28	9.50	Oct. 28	14.20
Mar. 4	13.10	May 28	9.10	Aug. 28	14.00	Dec. 26	13.90
26	9.75	June 26	9.30	Sept. 28	14.00		

37/59-26a1. Deeth. Dug unused water-table well, diameter 4 feet, depth 14 feet. Highest water level 3.30 below lsd, Mar. 21, 1942; lowest 10.20 below lsd, Nov. 26, 1949. Records available: 1938-52.

Jan. 28	7.80	Apr. 26	3.10	July 28	6.90	Oct. 26	8.30
Mar. 4	7.30	May 28	2.90	Aug. 28	8.30	Nov. 28	9.40
26	4.40	June 26	3.65	Sept. 28	8.40	Dec. 26	9.50

Lamoille Valley

33/56-8d1. Moffat. Known as 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 9.60 below lsd, Sept. 19, 1949, Sept. 28, 1952. Records available: 1944-52.

Jan. 28	7.70	May 28	5.50	Aug. 28	9.50	Nov. 28	9.00
Mar. 26	6.70	June 26	5.70	Sept. 28	9.60	Dec. 26	9.00
Apr. 26	6.90	July 28	8.00				

33/57-22d1. Sutacha. Drilled unused water-table well, diameter 18 inches, depth 60 feet. Highest water level 33.50 below lsd, May 28, 1949; lowest 44.00 below lsd, May 28, 1951. Records available: 1948-52.

Jan. 28	38.40	May 28	38.10	Aug. 28	38.70	Nov. 28	37.70
Mar. 5	38.40	June 26	39.60	Sept. 28	38.75	Dec. 26	38.60
Apr. 26	38.05	July 28	39.40	Oct. 28	38.10		

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: 1934-52.

Jan. 28	6.80	May 28	1.40	Aug. 28	3.50	Nov. 28	6.10
Feb. 27	6.90	June 26	1.50	Sept. 28	4.90	Dec. 26	6.00
Apr. 26	4.70	July 28	2.10	Oct. 28	8.50		

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. Records available: 1934-52. Apr. 26, 1.25; May 28, 1.90; June 26, 2.80; July 28, 3.80; Aug. 28, dry.

33/58-18c1. John Patterson. Dug unused water-table well, diameter 5 feet, depth 13 feet. Highest water level 1.0 below lsd, May 15, 1938; lowest 12.5 below lsd, Mar. 1, 1935. Records available: 1934-52.

Jan. 28	3.40	May 28	2.75	Aug. 28	2.90	Nov. 28	4.30
Feb. 26	6.40	June 26	2.75	Sept. 28	4.00	Dec. 26	5.70
Apr. 26	2.70	July 28	2.70	Oct. 28	4.00		

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: 1934-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	12.40	Apr. 26	8.10	July 28	2.70	Oct. 28	11.30
Feb. 26	12.60	May 28	2.70	Aug. 28	4.00	Nov. 28	12.00
Mar. 26	10.90	June 26	1.70	Sept. 28	5.40	Dec. 26	14.20

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: 1934-52.

Jan. 28	19.10	Apr. 26	10.00	July 28	6.30	Oct. 28	16.10
Feb. 26	17.70	May 28	4.50	Aug. 28	2.90	Nov. 28	18.30
Mar. 26	16.60	June 28	5.20	Sept. 28	9.90	Dec. 26	19.60

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: 1944-52.

Jan. 28	45.80	May 28	40.30	Sept. 28	46.00	Nov. 28	43.10
Mar. 5	46.10	June 26	48.90	Oct. 28	46.20	Dec. 26	43.20
Apr. 26	38.45	July 28	64.40				

35/58-3cb1. Randolph. Dug unused water-table well, diameter 5 feet, depth 8 feet. Highest water level flowing, June 1, 1943; lowest 8.75 below lsd, Sept. 4, 1934. Records available: 1934-52. May 28, 1.50, estimated; June 26, 1.90; July 28, 5.10; Aug. 28, 6.00; Sept. 28, 6.60; Oct. 28, 6.70.

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. Sept. 29, 37.18.

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 7.44 below lsd, Sept. 15, 1949. Records available: 1948-52. Sept. 29, 6.80.

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 10.90 below lsd, Sept. 15, 1949. Records available: 1948-52. Sept. 29, 9.35.

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 4.38 below lsd, Sept. 15, 1949. Records available: 1949-52. May 21, 1.43; Sept. 29, 3.87.

32/60-29c2. U. S. Geol. Survey. Driven observation water-table well, diameter $1\frac{1}{2}$ inches, depth 15 feet, cased to 15. Highest water level 3.65 below lsd, Mar. 28, 1951; lowest 6.95 below lsd, Sept. 15, 1949. Records available: 1949-52. May 21, 4.12; Sept. 29, 6.53.

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 7.77 below lsd, Sept. 14, 1949. Records available: 1948-52. Sept. 29, 7.26.

Esmeralda County

Fish Lake Valley

1S/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: 1949-52. Mar. 27, 13.92; Sept. 8, 14.32.

1S/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 29.92 below lsd, Sept. 10, 1951. Records available: 1945-52. Mar. 27, 32.51, pumping; Sept. 8, 30.35.

2S/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 46.14 below lsd, Sept. 8, 1952. Records available: 1949-52. Mar. 27, 45.29; Sept. 8, 46.14.

2S/35-28d1. E. L. Cord. Cord No. 3. Circle L Ranch. Drilled irrigation water-table well, diameter 12 inches, reported depth 110 feet. Highest water level 46.2 below lsd, July 20, 1945; lowest 56.64 below lsd, Sept. 20, 1950. Records available: 1945, 1949-50, 1952. Mar. 27, 53.84; Sept. 8, 56.20.

2S/35-33a1. E. L. Cord. Cord No. 1. Circle L Ranch. Drilled irrigation water-table well, diameter 12 inches, depth 120 feet. Highest water level 51.91 below lsd, Dec. 12, 1946; lowest 62.47 below lsd, Nov. 30, 1949. Records available: 1946-47, 1949-50. No measurement made in 1952.

2S/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 feet. Highest water level 50.07 below lsd, Mar. 27, 1952; lowest 53.65 below lsd, Mar. 22, 1950. Records available: 1950, 1952. Mar. 27, 50.07.

2S/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, 1949-50. No measurement made in 1952.

3S/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 23.54 below lsd, Sept. 10, 1951. Records available: 1949-52. Mar. 27, 23.31; Sept. 8, 23.10.

3S/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 48.88 below lsd, Sept. 10, 1951. Records available: 1949-52. Mar. 27, 48.75; Sept. 8, 48.26.

3S/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 48.12 below lsd, Sept. 8, 1952. Records available: 1949-52. Mar. 27, 48.00; Sept. 8, 48.12.

3S/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 46.95 below lsd, Sept. 8, 1952. Records available: 1950-52. Mar. 27, 46.86; Sept. 8, 46.95.

3S/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. Mar. 27, 23.60; Sept. 8, 22.60.

3S/35-14c2. C. Parkinson. Drilled irrigation water-table well, diameter 12 inches. Highest water level 29.34 below lsd, Sept. 8, 1952; lowest 30.45 below lsd, Sept. 10, 1951. Records available: 1950-52. Mar. 27, 29.92; Sept. 8, 29.34.

3S/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, 1947-52. Mar. 27, 41.24; Sept. 8, 40.94.

3S/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: 1949-52. Mar. 27, 3.35; Sept. 8, 9.87.

3S/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: 1946-52. Mar. 27, 14.42; Sept. 8, 17.02.

Tonopah and vicinity

3/40-2c1. Miller's 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: 1948-52. Mar. 24, 39.28; Sept. 8, 39.11.

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. Oct. 1, 24.86.

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: 1949-52. Oct. 1, 93.96.

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. No measurement made in 1952.

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 7.70 below lsd, Sept. 13, 1950. Records available: 1948-52. Sept. 29, 7.08.

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 4.95 below lsd, Sept. 15, 1948. Records available: 1948-52. Sept. 29, 3.90.

31/49-5c1. Wm. Connelly. Beowawe. Dug domestic water-table well, diameter 4 feet, depth 10 feet. Land-surface datum is 4,898.3 feet above msl. Highest water level 6.58 below lsd, Mar. 29, 1951; lowest 7.89 below lsd, Sept. 9, 1949. Records available: 1948-52. Sept. 29, 7.41.

Diamond Valley

19/53-5a1. A. C. Florio. Drilled stock water-table well, diameter 6 inches. Highest water level 176.07 below lsd, Dec. 18, 1952; lowest 180.04 below lsd, Sept. 13, 1949. Records available: 1947-52. Oct. 1, 176.79; Dec. 11, 176.21; Dec. 18, 176.07; Dec. 27, 176.14.

19/53-13b1. Owner unknown. Eureka. Dug unused water-table well, size 4 by 8 feet, depth 19 feet. Highest water level 14.74 below lsd, July 14, 1948; lowest dry, Sept. 11, 1951. Records available: 1948-52. Oct. 1, 15.99.

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: 1947-52. Feb. 7, 74.63; Oct. 1, 74.47; Dec. 11, 74.49; Dec. 18, 74.30; Dec. 27, 74.29.

20/53-31d1. A. C. Florio. Drilled stock well, diameter 6 inches. Highest water level 157.11 below lsd, Oct. 1, 1952; lowest 165.90 below lsd, Sept. 13, 1949. Records available: 1947-52. Oct. 1, 157.11; Dec. 11, 158.04; Dec. 18, 157.89; Dec. 27, 157.84.

21/53-5c1. A. C. Florio. Drilled stock water-table well, diameter 4 feet, depth 42 feet. Highest water level 28.72 below lsd, June 15, 1948; lowest 28.98 below lsd, Sept. 13, 1949. Records available: 1947-52. Oct. 1, 28.86.

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 8.39 below lsd, Mar. 15, 1951. Records available: 1949-52. Mar. 15, 1951, 8.39; Sept. 11, 1951; 8.18; Oct. 1, 1952, 7.33.

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 7.68 below lsd, Sept. 11, 1951. Records available: 1949-52. Oct. 1, 6.40.

Kobeh Valley

21/49-17b1. Pete Etchegaray. Drilled stock water-table well, diameter 6 inches, depth 60 feet. Highest water level 40.78 below lsd, Sept. 13, 1949; lowest 42.85 below lsd, Sept. 11, 1951. Records available: 1948-51. No measurement made in 1952.

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 33.12 below lsd, Feb. 28, 1951; lowest 47.12 below lsd, Sept. 13, 1949. Records available: 1946-52. Mar. 28, 35.88; Sept. 11, 38.30.

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: 1946-52. Mar. 26, 37.71; Sept. 11, 33.30.

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: 1946-52. Mar. 28, 21.43; Sept. 11, 20.35.

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 12.69 below lsd, Dec. 15, 1949. Records available: 1947, 1949-52. Mar. 26, 11.17; Sept. 11, 11.02.

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 7.60 below lsd, Dec. 16, 1949. Records available: 1947-52. Mar. 28, 5.66; Sept. 11, 6.02.

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 54.92 below lsd, May 14, 1951; lowest 58.75 below lsd, Dec. 21, 1948. Records available: 1947-52. Mar. 26, 57.22; Sept. 11, 56.90.

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 19.54 below lsd, Nov. 22, 1950. Records available: 1947-52. Mar. 26, 17.29; Sept. 11, 17.08.

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: 1949-52. Mar. 28, 20.14; Sept. 11, 12.27.

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: 1949-52. Mar. 28, 32.23; Sept. 11, 23.63.

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: 1947-52. Mar. 26, 12.15; Sept. 11, 11.57.

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, 1949-52. Mar. 28, 6.75.

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 28.04 below lsd, Sept. 11, 1952; lowest 36.67 below lsd, Nov. 24, 1950. Records available: 1945-52. Sept. 11, 28.04.

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. No measurement made in 1952.

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 7.65 below lsd, Sept. 10, 1952; lowest 15.81 below lsd, Sept. 14, 1948. Records available: 1948-52. Sept. 10, 7.65.

39/39-11b1. George Miller, Sr. Drilled unused water-table well, diameter 8 inches, depth 15 feet. Land-surface datum is 4,334 feet above msl. Highest water level 6.62 below lsd, July 26, 1951; lowest 9.95 below lsd, Sept. 15, 1949. Records available: 1947-51. Measurement discontinued.

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: 1947-52. Sept. 10, 6.55.

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 9.50 below lsd, Sept. 19, 1950. Records available: 1945-52. Sept. 10, 6.60.

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. No measurement made in 1952.

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: 1945-52. Mar. 27, 43.30; Sept. 10, 39.60.

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: 1945-52. Sept. 10, 6.55.

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: 1945-52. Sept. 10, 7.23.

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: 1947-52. Sept. 10, 9.25.

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 10.95 below lsd, Oct. 25, 1948. Records available: 1945-52. Mar. 27, 2.30; Sept. 10, 6.40.

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 9.90 below lsd, Oct. 20, 1949. Records available: 1945-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 27	3.67	June 21	3.64	Sept. 10	7.42	Nov. 30	e7.00
Apr. 25	2.71	July 31	5.57	29	7.85	Dec. 29	7.80
May 28	2.95	Sept. 4	7.35	Oct. 30	7.30		

e Estimated.

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: 1946-52. Mar. 27, 7.50; Sept. 10, 8.14.

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 14.60 below lsd, Mar. 18, 1947. Records available: 1945-52. Mar. 27, 6.47; Sept. 10, 7.55.

Quinn River Valley

42/37-33b2. Hassenyager. Drilled irrigation water-table well, diameter 18 inches, depth 95 feet. Highest water level 36.54 below lsd, Apr. 21, 1948; lowest 40.42 below lsd, July 18, 1948. Records available: 1948-52. Mar. 27, 38.28; Sept. 10, 37.20.

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 34.11 below lsd, Mar. 29, 1951. Records available: 1947-52. Mar. 27, 34.15; Sept. 10, 30.41.

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: 1946-52. Mar. 27, 10.97; Sept. 10, 10.52.

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: 1947-52. Mar. 27, 44.30; Sept. 10, dry.

Lander County

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: 1947-52. Sept. 11, 13.54.

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 12.15 below lsd, Sept. 14, 1950. Records available: 1947-52. Sept. 11, 11.76.

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: 1947-52. Sept. 11, 136.41.

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 6.44 below lsd, Sept. 19, 1951. Records available: 1947-52. Sept. 11, 6.18.

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 27.68 below lsd, Sept. 19, 1951. Records available: 1947-52. Sept. 11, 27.20.

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 19.94 below lsd, Sept. 19, 1951. Records available: 1947-52. Sept. 11, 18.60.

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 25.45 below lsd, Sept. 14, 1950. Records available: 1947-52. Sept. 11, 24.40.

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: 1946-52. Sept. 11, 4.64.

32/45-9ab1. Owner unknown. Drilled unused water-table well, diameter 4 inches, uncased. 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: 1946-52. Sept. 11, 7.40.

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 9.48 below lsd, Sept. 9, 1949. Records available: 1949-52. July 10, 4.08; July 22, 4.97; Sept. 11, 7.74; Sept. 23, 8.06.

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: 1949-52. July 10, 1.11; July 22, 1.45; Sept. 11, 2.60; Sept. 23, 2.89.

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: 1946-52. Apr. 3, 6.24; Sept. 11, 7.42.

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: 1946-52. Sept. 11, 4.50.

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 2.38 below lsd, Apr. 11, 1946; lowest 6.64 below lsd, Sept. 9, 1947. Records available: 1945-52. Sept. 10, 5.69.

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. Records available: 1945-52. Apr. 3, 3.91; Sept. 11, 9.20.

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. No measurement made in 1952.

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 19.22 below lsd, Sept. 11, 1952; lowest 19.89 below lsd, Aug. 15, 1950. Records available: 1947-52. Sept. 11, 19.22.

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: 1947-52. Apr. 3, 10.75; Sept. 11, 11.10.

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 41.10 below lsd, Sept. 13, 1951; lowest 43.21 below lsd, Sept. 6, 1949. Records available: 1946-51. No measurement made in 1952.

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: 1947-52. Mar. 25, 36.85; Sept. 10, 36.00.

Meadow Valley

1S/68-28c1. C. Ronnow. Drilled irrigation well, diameter 12 inches, reported depth 75 feet. Highest water level 44.03 below lsd, Apr. 25, 1946; lowest 49.29 below lsd, Sept. 27, 1948. Records available: 1945-52. Mar. 25, 43.15.

1S/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. Mar. 25, 33.97.

1S/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. 12, 1950. Records available: 1946-52. Mar. 25, 31.46; Sept. 11, 34.05.

2S/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: 1946-52. Mar. 25, 4.55; Sept. 11, 5.90.

2S/68-5c1. Stock yard 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 10.55 below lsd, Apr. 5, 1946; lowest 13.90 below lsd, Sept. 13, 1951. Records available: 1946-47, 1949-52. Mar. 25, 11.32; Sept. 11, 13.17.

2S/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 21.30 below lsd, Sept. 12, 1950. Records available: 1946-52. Mar. 25, 18.25; Sept. 11, 21.16.

2S/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: 1946-52. Mar. 25, 12.94; Sept. 11, 15.65.

2S/68-8b5. U. S. Geol. Survey. Drilled test and observation well in alluvium of Quaternary age, diameter 6 inches, depth 110 feet, cased to 110. Highest water level 10.72 below lsd, Mar. 20, 1950; lowest 15.23 below lsd, Sept. 13, 1951. Records available: 1949-52.

Daily noon water level from recorder graph

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 25	11.97	Apr. 13	10.88	May 5	11.87	July 26	14.45
26	11.96	14	10.89	6	11.90	27	14.50
27	11.93	15	10.91	7	11.92	Aug. 22	14.92
28	11.90	16	10.98	July 8	13.66	23	14.90
29	11.88	17	11.09	9	13.73	24	14.91
Mar. 1	11.81	19	11.29	10	13.84	25	14.98
3	10.97	20	11.38	11	13.93	26	15.06
4	10.96	21	11.48	12	14.03	27	15.11
5	10.93	22	11.52	13	14.09	28	15.16
6	10.94	23	11.56	14	14.12	Sept. 9	h15.00
7	10.92	24	11.61	15	14.18	11	h14.80
8	10.91	25	11.64	21	14.19	29	14.03
9	10.90	30	11.76	22	14.31	30	14.13
10	10.89	May 1	11.78	23	14.40	Dec. 10	13.00
25	h10.96	2	11.79	24	14.40	11	12.98
Apr. 11	10.88	3	11.82	25	14.44	12	12.96
12	10.90	4	11.86				

h Tape measurement.

3S/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. Mar. 25, 18.34.

3S/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: 1946-52. Mar. 25, +2.45; Sept. 11, +1.76.

Pahranagat Valley

4S/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 56.33 below lsd, Sept. 11, 1952. Records available: 1946, 1948-52. Mar. 25, 44.87; Sept. 11, 56.33, nearby well being pumped.

4S/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. Mar. 25, 52.56.

4S/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, 1948-52. Mar. 25, 61.41; Sept. 11, 61.45.

5S/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, 1948-52. Mar. 25, 64.05; Sept. 11, 64.09.

6S/61-18d2. Gardner Chism. Drilled unused well, diameter 6 inches, depth 41 feet. Highest water level 5.55 below lsd, Mar. 14, 1951; lowest 8.41 below lsd, Sept. 20, 1949. Records available: 1946-52. Mar. 25, 6.29; Sept. 11, 7.93.

6S/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: 1946-52. Mar. 25, 12.90; Sept. 11, 15.00.

6S/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, 1948-52. Mar. 25, 21.08; Sept. 11, 20.48.

7S/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: 1946-52. Mar. 25, 13.94; Sept. 11, 15.33.

8S/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 25.74 below lsd, Sept. 11, 1952. Records available: 1946-52. Mar. 25, 21.90; Sept. 11, 25.74.

8S/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: 1946-52. Mar. 25, 2.96; Sept. 11, 6.80.

8S/62-31b1. John Richards. Drilled unused well, diameter 10 inches, depth 66 feet. Highest water level 18.60 below lsd, Apr. 18, 1947; lowest 20.51 below lsd, Sept. 30, 1948. Records available: 1945-48, 1950-52. Mar. 25, 18.29; Sept. 11, 19.40.

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. Apr. 1, 17.49.

18/25-31a1. Southern Pacific Co. Appian. Drilled unused well, diameter 6 inches. Highest water level 30.59 below lsd, Dec. 21, 1950; lowest 36.05 below lsd, Mar. 30, 1950. Records available: 1949-52. Apr. 1, 35.71; Sept. 17, 31.93.

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. No measurement made in 1952.

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: 1948-52. Mar. 24, 37.82; Sept. 17, 28.20.

14/25-28d1. School District. Drilled unused well, diameter 6 inches, depth 38 feet. Highest water level 2.43 below lsd, June 16, 1950; lowest 6.00 below lsd, Mar. 26, 1951. Records available: 1947-52. Apr. 1, 5.87; Sept. 17, 3.60.

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 7.35 below lsd, Aug. 20, 1948. Records available: 1945, 1947-52. Apr. 1, 4.10; Sept. 17, 4.54.

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: 1947-52. Apr. 1, 52.29; Sept. 17, 51.51.

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: 1948-52. Mar. 17, 66.87; Dec. 23, 65.83.

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 49.54 below lsd, Dec. 23, 1952; lowest 55.44 below lsd, May 26, 1950. Records available: 1949-52. Sept. 17, 52.23; Dec. 23, 49.54.

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. No measurement made in 1952.

11/23-1ab1. C. G. Smith. Dug stock water-table well, diameter 4 feet, depth 30 feet. Highest water level 20.42 below lsd, Sept. 17, 1952; lowest 22.35 below lsd, May 26, 1950. Records available: 1949-52. Mar. 17, 21.51; Sept. 17, 20.42; Dec. 23, 20.68.

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 45.99 below lsd, Sept. 17, 1952; lowest 50.55 below lsd, Mar. 26, 1951. Records available: 1948-52. Mar. 17, 49.63; Sept. 17, 45.99; Dec. 23, 46.20.

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: 1949-52. Mar. 17, 11.99; Sept. 17, 8.40; Dec. 23, 9.82.

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: 1949-52. Mar. 17, 36.4; Sept. 17, 37.8; Dec. 23, 37.7.

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: 1948-52. Mar. 17, 70.41; Sept. 17, 55.51; Dec. 23, 66.36.

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 28.7 above lsd, Sept. 10, 1951; lowest 21.6 above lsd, Oct. 15, 1949. Records available: 1948-52.

Daily noon water level, above lsd, from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.9	26.8	26.0	....	25.9	25.3	27.5	25.4	28.3	28.5	26.3	26.0
2	26.9	26.1	26.1	....	26.1	25.2	27.8	25.4	28.2	28.5	26.2	26.3
3	26.8	26.5	26.1	....	25.8	25.2	27.5	26.4	28.1	28.5	26.3	26.2
4	26.7	26.1	26.5	....	25.8	25.3	27.5	27.8	28.0	28.5	26.4	26.0
5	26.8	26.6	26.2	....	25.8	25.4	27.4	27.6	27.9	28.5	26.4	26.0
6	27.3	26.7	26.1	....	25.8	25.0	27.7	27.9	28.1	28.5	26.4	26.0
7	27.1	26.6	....	....	25.8	25.2	27.5	....	28.2	28.5	26.2	26.1
8	27.2	26.6	....	....	25.7	25.3	27.7	....	27.9	28.6	26.3	26.2
9	26.8	26.5	....	....	25.6	25.1	27.7	....	28.1	28.4	26.2	26.3
10	27.0	26.8	....	....	25.8	25.1	27.6	....	28.1	28.4	26.3	26.4
11	26.8	26.2	....	....	25.8	25.1	27.7	....	28.0	28.4	26.4	26.3
12	26.8	26.1	....	....	25.7	24.9	27.5	....	27.6	28.4	26.4	26.2
13	26.9	26.2	....	....	25.6	25.0	27.4	....	28.2	28.4	26.4	26.2
14	26.9	26.1	....	....	25.7	25.3	27.4	....	28.0	28.4	26.3	26.3
15	26.9	26.7	....	....	25.4	25.0	27.4	27.9	28.1	28.4	26.3	26.3
16	26.8	26.6	....	....	25.5	25.0	27.7	27.9	28.2	28.4	26.2	26.2
17	27.1	26.1	....	....	25.6	25.1	27.8	28.1	28.1	28.4	26.2	26.3
18	26.8	26.1	....	....	25.7	25.3	27.8	27.7	28.1	28.4	26.2	26.3
19	27.1	26.2	....	....	25.8	25.0	27.7	27.9	28.2	....	26.3	26.2
20	27.0	26.5	....	....	25.5	25.4	27.8	28.0	28.4	....	26.3	26.2
21	27.5	26.2	....	....	25.3	25.4	27.9	27.7	28.5	....	26.2	26.2
22	27.2	26.3	....	....	25.4	25.4	27.9	27.7	28.5	....	26.2	26.3
23	27.2	26.5	....	....	25.3	25.3	27.6	27.7	28.3	....	26.1	26.2
24	27.1	26.5	....	....	25.6	25.3	27.0	27.5	28.5	....	26.2	26.3
25	26.5	26.5	....	....	25.4	26.9	25.3	27.6	28.4	....	26.2	26.3
26	27.1	26.5	....	....	25.4	27.4	25.7	27.9	28.2	....	26.3	26.2
27	26.9	27.0	....	....	25.5	27.4	25.7	27.9	28.5	....	26.1	26.2
28	26.9	26.8	....	26.0	25.7	27.4	25.8	27.7	28.5	....	26.0	26.2
29	27.0	26.6	....	25.9	25.3	27.6	25.7	27.9	28.5	26.5	26.1	26.3
30	26.5		....	26.1	25.3	27.5	25.5	27.9	28.5	26.4	26.1	26.2
31	26.9		....		25.4		25.4	28.2		26.3		26.3

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 28.00 above lsd, Nov. 29, 1950; lowest 24.90 above lsd, May 11, 1949. Records available: 1948-52. Mar. 17, 27.4.

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 54.62 below lsd, Dec. 23, 1952; lowest 62.19 below lsd, Nov. 15, 1949. Records available: 1948-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	59.06	59.24	59.61	.....	56.55	56.36	55.60	55.35	55.83	55.27	55.03
2	.....	59.20	59.40	59.66	57.95	56.58	56.36	55.56	55.38	55.85	55.33	55.13
3	.....	59.19	59.36	59.66	57.88	56.64	56.38	55.51	55.39	55.88	55.35	55.26
4	.....	59.18	59.37	59.64	57.76	56.60	56.30	55.44	55.43	55.89	55.33	55.16
5	.....	59.20	59.40	59.63	57.60	56.54	56.26	55.41	55.48	55.88	55.34	55.09
6	58.77	59.14	59.31	59.60	57.50	56.54	56.24	55.22	55.51	55.85	55.36	55.08
7	58.86	59.14	59.40	59.63	57.38	56.56	56.25	55.07	55.52	55.79	55.39	55.21
8	58.99	59.16	59.36	59.70	57.34	56.52	56.22	55.02	55.53	55.74	55.42	55.34
9	58.95	59.19	59.45	59.65	57.27	56.67	56.25	54.97	55.55	55.73	55.43	55.37
10	58.86	59.17	59.45	59.60	.....	56.60	56.20	54.92	55.60	55.72	55.46	55.38
11	58.82	59.17	59.44	59.68	.....	56.69	56.23	54.84	55.67	55.73	55.27	55.44
12	58.82	59.25	.....	59.68	.....	56.62	56.16	54.85	55.73	55.69	55.19	55.44
13	58.85	59.25	.....	59.62	.....	56.56	56.13	54.88	55.75	55.63	55.15	55.35
14	58.84	59.24	59.41	59.70	56.77	56.62	56.06	54.86	55.76	55.61	55.12	55.20
15	58.86	59.21	59.45	59.65	56.78	56.66	55.98	54.85	55.77	55.55	55.14	55.11
16	58.97	59.11	59.47	59.59	56.72	56.54	55.85	54.84	55.77	55.53	55.18	55.01
17	59.02	59.19	59.50	59.50	56.69	56.48	55.76	54.83	55.77	55.50	55.21	54.93
18	58.96	59.25	59.48	59.41	56.64	56.45	55.70	54.84	55.80	55.50	55.22	54.89
19	59.02	59.28	59.49	59.33	56.60	56.45	55.68	54.85	55.82	55.47	55.14	54.79
20	58.96	59.21	59.60	59.28	56.50	56.39	55.66	54.89	55.79	55.43	55.03	54.83
21	59.02	59.28	59.60	59.20	56.46	56.38	55.61	54.95	55.21	55.39	.....	54.77
22	59.05	59.29	59.60	59.10	56.41	56.35	55.59	55.00	55.77	55.37	.....	54.71
23	59.02	59.35	59.59	58.99	56.32	56.34	55.54	55.03	55.74	55.33	.....	54.62
24	58.97	59.36	59.56	58.85	56.31	56.30	55.53	55.07	55.73	55.34	54.94	54.67
25	59.05	59.33	59.59	58.72	56.31	56.35	55.56	55.11	55.73	55.31	54.97	54.71
26	59.17	59.29	59.59	58.45	56.34	56.36	55.54	55.14	55.73	55.35	54.99	54.68
27	59.18	59.34	59.55	58.38	56.37	56.30	55.53	55.18	55.74	55.34	54.95	54.73
28	59.13	59.33	59.53	58.30	56.40	56.33	55.52	55.21	55.78	55.30	54.95	54.84
29	59.08	59.23	59.53	58.24	56.41	56.43	55.55	55.25	55.83	55.27	54.98	54.82
30	59.08		59.59	58.10	56.40	56.35	55.60	55.29	55.85	55.25	55.03	54.77
31	59.15		59.64		56.48		55.65	55.32		55.24		55.01

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 40.71 below lsd, Sept. 17, 1952; lowest 47.80 below lsd, May 11, 1949. Records available: 1948-52. Sept. 17, 40.71.

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: 1948-52. Mar. 17, 3.54; Sept. 17, 2.82; Dec. 23, 2.54.

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: 1948-52. Mar. 17, 29.93; Apr. 25, 30.19; Sept. 17, 33.08.

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 10.2 above lsd, Nov. 29, 1950, Mar. 26, 1951; lowest 8.9 above lsd, Sept. 6, 1951. Records available: 1948-52. Sept. 17, +10.0; Dec. 23, +10.2.

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: 1948-52. Mar. 17, 47.52; Sept. 17, 48.04; Dec. 23, 47.40.

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: 1948-52. Mar. 24, 185.10; Sept. 8, 185.40.

Soda Spring Valley

8/34-28c1. Basic Magnesium Plant. Drilled unused well, diameter 8 inches. Highest water level 136.83 below lsd, Sept. 10, 1951; lowest 137.72 below lsd, Mar. 20, 1950. Records available: 1949-52. Mar. 24, 136.86; Sept. 8, 136.88.

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. No measurement made in 1952.

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 89.64 below lsd, Oct. 16, 1952. Records available: 1947-52. Feb. 5, 86.36; Oct. 16, 89.64.

S19/53-10cbb1. Dickey & Harris. Drilled unused well, diameter 18 inches, depth 250 feet. Highest water level 90.32 below lsd, Apr. 1, 1947; lowest 94.15 below lsd, Nov. 26, 1952. Records available: 1946-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14	93.25	Mar. 25	93.24	May 21	93.52	Oct. 16	93.67
Feb. 12	93.24	Apr. 15	93.36	Aug. 29	94.15	Nov. 26	94.15

S19/53-16daa1. Stavers. Drilled irrigation well, diameter 8 inches, reported depth 700 feet. Highest water level 38.93 below lsd, Mar. 17, 1945; lowest 45.82 below lsd, Feb. 12, 1952. Records available: 1945, 1947-52. Feb. 12, 45.82. Measurement discontinued.

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 feet. Highest water level 41.27 below lsd, Apr. 1, 1947; lowest 51.19 below lsd, Nov. 26, 1952. Records available: 1947-52. Jan. 15, 47.22; Feb. 5, 47.13; Mar. 25, 47.11; Apr. 15, 48.56; May 21, 48.56; Oct. 16, 51.07; Nov. 26, 51.19.

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 38.15 above lsd, Aug. 29, 1952. Records available: 1948-52. Feb. 12, +41.55; May 21, +43.85; Aug. 29, +38.15.

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 40.67 below lsd, Sept. 7, 1952. Records available: 1945, 1948-52.

Daily noon water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.69	31.59	32.69	33.73	37.79	38.58	.....	.....	40.57	40.19	37.63	37.37
2	31.69	31.53	32.81	33.71	36.21	38.65	.....	.....	40.60	40.18	37.51	37.32
3	31.68	31.56	32.88	33.73	36.75	38.71	.....	.....	40.61	40.15	37.43	37.30
4	31.64	31.56	32.90	33.73	37.60	38.65	.....	.....	40.62	40.14	37.37	37.26
5	31.63	31.53	32.94	33.74	37.51	38.60	.....	.....	40.63	40.12	37.33	37.16
6	31.59	31.54	32.94	33.75	37.80	38.55	38.41	.....	40.64	40.12	37.29	37.14
7	31.55	31.53	32.98	33.76	37.76	38.56	38.68	.....	40.67	40.12	39.26	37.11
8	31.59	31.54	33.02	33.79	38.33	38.54	38.85	.....	40.64	40.12	39.23	37.11
9	31.67	31.57	33.05	33.78	38.15	38.60	38.94	.....	40.41	40.12	37.22	37.10
10	31.58	31.59	33.07	33.81	38.10	38.65	39.01	.....	40.32	40.02	37.21	37.12
11	31.55	31.62	33.09	33.88	38.10	38.58	39.03	.....	40.28	40.20	37.38	37.07
12	31.55	31.65	33.10	33.95	38.10	.....	38.70	.....	40.22	40.38	37.29	37.09
13	31.54	31.67	33.08	33.97	38.03	.....	39.03	.....	40.18	40.48	37.21	37.25
14	31.61	31.79	33.08	34.14	38.02	.....	39.11	.....	40.15	40.46	37.22	37.18
15	31.57	31.80	33.08	34.14	37.97	.....	38.96	.....	40.00	40.31	37.04	37.07
16	31.59	31.79	33.10	34.10	38.10	.....	39.03	.....	40.00	40.18	37.15	37.01
17	31.67	31.79	33.17	34.68	38.10	.....	39.21	.....	40.03	40.16	37.27	37.01
18	31.60	31.85	33.20	34.86	38.10	.....	38.96	.....	40.04	40.01	37.37	37.01
19	31.62	31.86	33.28	35.10	38.10	.....	38.79	.....	40.09	.....	37.46	37.10
20	31.60	31.92	33.36	35.10	38.10	.....	39.01	.....	40.08	.....	37.55	37.02

S20/53-24caa1--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	31.62	31.98	33.42	34.35	38.22	.....	38.82	.....	40.08	.....	37.64	37.02
22	31.67	32.07	33.43	34.10	38.22	.....	38.56	.....	40.06	.....	37.87	37.10
23	31.66	32.22	33.45	35.06	36.91	.....	38.92	.....	40.06	.....	37.88	37.01
24	31.61	32.38	33.42	35.10	36.73	.....	39.03	.....	40.29	.....	37.88	37.01
25	31.58	32.48	33.48	35.10	36.69	.....	39.04	.....	40.43	.....	37.88	37.01
26	31.61	32.54	33.48	36.68	36.64	.....	39.02	.....	40.50	.....	37.67	37.01
27	31.65	32.59	33.54	36.95	38.16	.....	39.00	.....	40.42	.....	37.60	37.01
28	31.63	32.65	33.54	37.05	38.19	.....	39.35	.....	40.32	.....	37.54	37.01
29	31.59	32.69	33.56	37.06	38.26	.....	39.75	40.43	40.28	.....	37.47	37.01
30	31.59		33.63	37.00	38.42	.....	39.82	40.38	40.23	37.87	37.42	36.70
31	31.58		33.74		38.51		39.86	40.48		37.75		36.68

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, 1947-52. Feb. 14, 26.05; May 21, 25.67; Dec. 12, 26.65.

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: 1947-52. Feb. 14, 21.65; May 21, 21.27; Aug. 29, 22.10; Dec. 12, 22.06.

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 36.64 below lsd, Aug. 29, 1952. Records available: 1946-52. Feb. 14, 31.31; May 6, 30.85; Aug. 29, 36.64; Nov. 26, 34.88.

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 20.55 below lsd, Dec. 13, 1952. Records available: 1946-52. Feb. 14, 19.73; May 6, 19.85; Aug. 29, 20.05; Nov. 26, 20.45; Dec. 13, 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: 1948-52. Mar. 26, 12.36; Sept. 9, 12.62.

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, 1947-52. May 22, 30.24; Sept. 9, 30.55.

10/60-36b1. U. S. Bureau of Land Management. Drilled stock well, diameter 8 inches, reported depth 80 feet. Highest water level 41.22 below lsd, Sept. 9, 1952; lowest 42.54 below lsd, Mar. 15, 1950. Records available: 1947-52. May 22, 41.35; Sept. 9, 41.22.

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 7.05 below lsd, Nov. 30, 1948. Records available: 1946, 1948-52. Mar. 13, 0.98; Sept. 18, 6.43.

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 7.14 below lsd, Nov. 30, 1948. Records available: 1946, 1948-52. Mar. 13, 2.14; Sept. 18, 6.47.

15/20-8d1. Catholic Cemetery. Dug unused water-table well, diameter 8 feet, depth 17 feet, cribbed with stone. Highest water level 9.27 below lsd, Mar. 13, 1952; lowest 12.05 below lsd, Sept. 26, 1950. Records available: 1946, 1948-52. Mar. 13, 9.27; Sept. 18, 10.90.

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: 1948-52. Mar. 13, 9.62; Sept. 18, 10.38.

15/20-17a1. Simone Lompa & Rinaldo Cremetti. Drilled unused well, diameter 10 inches, reported depth 590 feet, reported cased to 590. Highest water level 4.03 below lsd, Mar. 13, 1952; lowest 12.04 below lsd, Sept. 26, 1950. Records available: 1946, 1948-52. Mar. 13, 4.03; Sept. 18, 7.79.

15/20-17c1. State Children's 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. Mar. 13, 1.84; Sept. 18, 12.77.

Pershing County

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 76.28 below lsd, Sept. 9, 1952; lowest 76.44 below lsd, Sept. 15, 1949. Records available: 1946-52. Sept. 9, 76.28.

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 79.98 below lsd, Mar. 30, 1951. Records available: 1947-52. Sept. 9, 79.96.

33/37-24a1. Lloyd Sweeney. Dug and drilled unused well, size 6 by $7\frac{1}{2}$ 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: 1945-52. Sept. 9, 8.00.

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: 1945-52. Sept. 9, 11.72.

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 30.65 below lsd, Oct. 19, 1950. Records available: 1945-52. Sept. 9, 29.08.

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 12.77 below lsd, Oct. 19, 1950. Records available: 1946-52. Sept. 11, 11.10.

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 70.13 below lsd, Sept. 9, 1952. Records available: 1945-52. Mar. 26, 68.78; Sept. 9, 70.13; Nov. 3, 69.43.

32/33-28d1. Cliff and Cecil Campbell. Humboldt. Drilled irrigation well. Highest water level 34.37 below lsd, Apr. 26, 1950; lowest 35.72 below lsd, May 15, 1952. Records available: 1950-52. May 15, 35.72.

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: 1947-52. Mar. 28, 36.80; Sept. 9, 24.26.

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. Mar. 29, 28.18; Sept. 9, 27.50.

Washoe County

Spanish Springs Valley

21/20-26b1. Owner unknown. Drilled unused well, diameter 6 inches, depth 96 feet. Highest water level 66.14 below lsd, Jan. 9, 1951; lowest 71.61 below lsd, Jan. 26, 1949. Records available: 1948-49, 1951. No measurement made in 1952.

Steamboat Valley

17/20-5d1. Feretto Estate. Dug domestic water-table well in weathered andesite, depth 17 feet. Highest water level 13.40 below lsd, Mar. 20, 1943; lowest 16.98 below lsd, Dec. 23, 1946. Records available: 1942-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	13.56	Apr. 23	14.53	July 21	14.38	Oct. 22	15.60
Feb. 27	14.17	May 23	13.88	Aug. 22	14.96	Nov. 25	15.60
Mar. 21	14.18	June 24	13.78	Sept. 19	14.80	Dec. 18	15.18

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: 1948-52. Jan. 2, 89.78; Mar. 21, 89.20; June 24, 88.88; Sept. 19, 88.67; Dec. 18, 88.45.

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: 1948-52. Jan. 2, 30.58; June 24, 29.36; Sept. 19, 29.80; Dec. 18, 29.87.

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: 1948-52. Jan. 2, 18.54; Mar. 21, 14.60; June 24, 13.53; Sept. 19, 15.00; Dec. 18, 13.94.

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: 1948-52.

Jan. 2	17.74	Mar. 21	17.71	July 21	14.68	Oct. 22	13.90
28	18.20	Apr. 23	17.83	Aug. 22	13.76	Nov. 25	15.03
Feb. 27	17.36	June 24	15.49	Sept. 19	13.73	Dec. 18	16.20

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. Oct. 22, 23.09.

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 37.49 below lsd, Apr. 23, 1952. Records available: 1949-52. Mar. 21, 36.35; Apr. 23, 37.49.

18/19-12ba2. L. H. Pickens Drilled domestic well, diameter 6 inches, reported depth 87 feet. Land-surface datum is 4,586.8 feet above msl. Highest water level 15.23 below lsd, Sept. 19, 1949; lowest 25.79 below lsd, Apr. 18, 1950. Records available: 1948-52. Sept. 19, 18.25.

18/19-12bd1. Mrs. B. Menzi. Drilled domestic and stock well, diameter 6 inches, depth 152 feet. Land-surface datum is 4,594.7 feet above msl. Highest water level 33.09 below lsd, Sept. 19, 1949; lowest 40.30 below lsd, May 16, 1950. Records available: 1949-51. No measurement made in 1952.

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 33.27 below lsd, Mar. 21, 1952. Records available: 1949-52.

Jan. 2	31.57	Mar. 21	33.27	Sept. 19	29.97	Nov. 25	30.37
28	32.38	July 21	31.32	Oct. 22	29.82	Dec. 18	30.70
Feb. 27	32.78	Aug. 22	30.33				

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 127.67 below lsd, Nov. 15, 1949; lowest 133.60 below lsd, Feb. 27, 1952. Records available: 1949-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Feb. 27	133.60	June 24	133.38	Sept. 19	132.15	Nov. 25	132.05
Apr. 23	132.05	Aug. 22	132.55	Oct. 22	131.42	Dec. 18	130.47

18/19-12cb5. Vuksan. Drilled domestic well, diameter 6 inches, reported depth 160 feet, cased to 160. Land-surface datum is 4,741.7 feet above msl. Highest water level 111.70 below lsd, May 19, 1949; lowest 137.08 below lsd, July 21, 1952. Records available: 1949-52. Jan. 2, 132.00; Jan. 9, 131.80; Feb. 27, 131.90; Mar. 21, 131.97; July 21, 137.08.

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. No measurement made in 1952.

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: 1949-52. Sept. 19, 4.31.

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. No measurement made in 1952.

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 14.20 below lsd, Apr. 18, 1950. Records available: 1949-52.

Feb. 27	11.91	June 24	9.00	Sept. 19	7.44	Nov. 25	8.76
Mar. 21	12.57	Aug. 22	7.37	Oct. 22	6.43	Dec. 18	9.74

18/20-7bc2. Joe Maffi. Drilled domestic well, diameter 6 inches. Land-surface datum is 4,566.34 feet above msl. Highest water level 9.82 below lsd, May 28, 1949; lowest 19.92 below lsd, Apr. 18, 1950. Records available: 1949-51. No measurement made in 1952.

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 30.75 below lsd, Mar. 14, 1950. Records available: 1948-52.

Jan. 28	29.39	Apr. 23	31.50	Aug. 22	22.13	Nov. 25	25.14
Feb. 27	28.72	June 24	23.55	Sept. 19	21.79	Dec. 18	25.34
Mar. 21	30.05	July 21	22.78	Oct. 22	21.18		

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: 1949-52.

Jan. 28	12.80	Apr. 23	14.43	Aug. 22	10.67	Nov. 25	11.14
Feb. 27	13.22	June 24	11.97	Sept. 19	9.86	Dec. 18	9.90
Mar. 21	13.86	July 21	11.01	Oct. 22	8.81		

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: 1942-52.

Jan. 28	7.50	Apr. 23	7.68	July 21	3.00	Oct. 22	2.16
Feb. 27	8.07	May 23	5.42	Aug. 22	2.76	Nov. 25	4.07
Mar. 21	8.62	June 24	3.77	Sept. 19	1.83	Dec. 18	5.09

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: 1949-52.

Jan. 28	32.12	Apr. 23	32.96	July 21	28.77	Oct. 22	30.21
Feb. 27	31.52	May 23	29.45	Aug. 22	29.33	Nov. 25	30.86
Mar. 21	31.91	June 24	28.88	Sept. 19	29.66	Dec. 18	31.38

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: 1942-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 28	40.88	Apr. 23	39.27	July 21	36.73	Oct. 22	39.87
Feb. 27	40.68	May 23	37.16	Aug. 22	37.61	Nov. 25	40.80
Mar. 21	41.15	June 24	35.74	Sept. 19	38.71	Dec. 18	41.25

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: 1947-52. Mar. 25, 25.82; Sept. 10, 23.88.

Newark Valley

18/55-31d1. Owner unknown. Dug stock water-table well, diameter 36 inches, depth 43 feet. Highest water level 33.38 below lsd, Oct. 1, 1952; lowest 34.65 below lsd, Dec. 21, 1946. Records available: 1946-52. Oct. 1, 33.38.

19/56-30d2. Don Eldridge. Dug stock water-table well, diameter 42 inches, depth 37 feet, concrete-cribbed. Highest water level 31.63 below lsd, Oct. 1, 1952; lowest 33.38 below lsd, June 19, 1950. Records available: 1948-52. Oct. 1, 31.63.

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 8.73 below lsd, June 19, 1950. Records available: 1948-52. Oct. 1, 8.45.

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. Records available: 1948-51. Oct. 1, 17.41.

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: 1947-52. Sept. 10, 15.11.

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: 1947-52. Sept. 10, 13.68.

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: 1948-52. Sept. 10, 24.13.

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: 1948-52. Sept. 10, 41.96.

Steptoe Valley

15/64-7a1. Lloyd Sorenson. Drilled irrigation well, diameter 16 inches, reported depth 200 feet. Highest water level 34.91 below lsd, Sept. 10, 1952; lowest 39.06 below lsd, Mar. 14, 1951. Records available: 1948-52. Sept. 10, 34.91.

16/63-1b1. Owner unknown. Drilled unused well, diameter 6 inches. Highest water level 61.67 below lsd, Sept. 30, 1952; lowest 68.58 below lsd, Sept. 12, 1951. Records available: 1949-52. May 21, 65.64; Sept. 30, 61.67.

16/63-14a1. Bill Goodman. Drilled unused well, diameter 10 inches, reported depth 130 feet. Highest water level 22.16 below lsd, Sept. 30, 1952; lowest 28.54 below lsd, Oct. 3, 1949. Records available: 1947, 1949-52. Sept. 30, 22.16.

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 14.30 below lsd, Mar. 14, 1951; lowest 21.20 below lsd, July 5, 1949. Records available: 1949-52. Sept. 30, 14.08.

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, 1949-52. Sept. 30, 14.56.

White River Valley
(See also Nye County)

11/61-35a1. Public domain. Drilled stock well, diameter 6 inches. Highest water level 10.53 below lsd, Mar. 25, 1949; lowest 13.08 below lsd, Sept. 11, 1951. Records available: 1947-52. Sept. 9, 12.40.

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: 1947-52. May 22, 60.52; Sept. 9, 59.83.

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: 1947-52. May 21, 44.35; Sept. 9, 43.56.

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: 1947-52. May 20, 26.45.

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: 1947-52. Sept. 9, 14.58.

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: 1947-52. Mar. 26, 23.30; May 22, 22.50; Sept. 9, 22.61.

NEW MEXICO

By C. S. Conover, W. E. Hale, H. O. Reeder,
J. R. Willett, and R. E. Smith

Scope of Water-Level Program

The program of measuring water levels in observation wells was continued in 1952 in conjunction with studies of the ground-water conditions, mainly in areas of ground-water irrigation, in cooperation with the State Engineer of New Mexico. Because of the importance of the ground-water supplies, the development of ground water in most of the large irrigated areas has been placed under regulation by the State Engineer to avoid ruinous overdevelopment. The measurement of water levels constitutes an important part of the ground-water program in the irrigated areas. Water levels are measured in many observation wells each January or February when the major part of the recovery from pumping effects of the previous pumping season has taken place and comparison with water levels of previous years can best be made. These winter measurements indicate the amount of ground water in storage, and by comparison with those of previous years show the net changes of ground-water storage that occurred during the intervening period. The net changes in storage are the result of changes in recharge as influenced mainly by the distribution and amount of precipitation and runoff, and discharge which is mainly pumpage for irrigation. The winter measurements are not published in this volume, but have been used in preparing the maps which show the areal changes in water levels. In addition to measurements made in January or February, measurements are made also in selected wells generally at 2-month intervals in order to note seasonal changes in water levels caused by precipitation and changes in pumping schedules and to aid in interpreting the net yearly changes in water levels. About 2,750 measurements of water level were made in 1952 in about 1,320 observation wells exclusive of those in the Virden Valley in Hidalgo County where measurements were made by the Arizona office. Water-level measurements were made seasonally, generally at 2-month intervals, in about 425 of the observation wells. Recording gages were maintained on 34 wells listed in this report.

Precipitation and Pumpage

Estimates of the amount of ground water pumped during the year in each area are made to determine the part played by the artificial withdrawal on the seasonal and yearly changes in water levels. An estimated 339,000 acres of land were irrigated entirely with water derived from wells. In 1952, 30,000 acres normally using surface water received supplemental water from wells for irrigation of lands in the declared ground-water basins, (with the exception of the Virden basin,) including the Grants-Bluewater and House areas and Playas Valley in New Mexico. This acreage required an estimated 877,000 acre-feet of water, an average duty of 2.4 acre-feet of water per acre. Both the acreage and the amount of water pumped in 1952 represent an increase over that in 1951 when an estimated 356,000 acres required an estimated 850,000 acre-feet of water derived from wells. The year 1952 was dry, but in general the precipitation in various areas was above that received in 1951. Precipitation in the Pecos Valley south of Roswell was about 55 percent of normal, on the High Plains 62 to 95 percent of normal, in the southwest, in Hidalgo and Luna County, 85 to 104 percent of normal.

Summary of Changes of Water Levels

Water levels in most of the observation wells reached their lowest winter-time levels on record by the end of 1952. The net annual declines of ground-water level were large in most areas as a result of heavy pumpage caused by continuing deficient rainfall and some increase in irrigated acreage.

Well-Numbering System

The system of numbering wells in New Mexico, used in all counties (except in the Virden Valley of the Gila River in Hidalgo County, and the thermal wells in the Truth or Consequences area in Sierra County), is based on the common system of subdivision of public lands into sections. By means of it, the well number, in addition to designating the well, locates its position to the nearest 10-acre tract in the land net. The well 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 denotes the range east or west of the New Mexico principal meridian; and the third denotes the section. In a county such as Roosevelt County, where wells are 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 located both east and west of the meridian, an E is added to the second segment of the well number of those east of the meridian. In counties lying 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 three digits, denotes the particular 10-acre tract in which the well is situated. For this purpose, the section is divided into four quarters, numbered 1, 2, 3, and 4, in the normal reading order, for the northwest, northeast, southwest, and southeast quarters, respectively. The first digit of the fourth segment gives the quarter section. Similarly, the quarter section is divided into four 40-acre tracts numbered in the same manner, and the second digit denotes the 40-acre tract. Finally, the 40-acre tract is divided into four 10-acre tracts, and the third digit denotes the 10-acre tract. Thus, well 12.36.24.123 in Lea County is in the $SW\frac{1}{4}NE\frac{1}{4}NW\frac{1}{4}$ sec. 24, T. 12 S., R. 36 E. If a well cannot be located 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 the last segment of whose numbers end in one or two zeros correspond to wells whose numbers in earlier reports are the same except for the omission of the last one or two zeros. Letters a, b, c, ...are added to the last segment to designate the second, third, fourth and succeeding wells in the same 10-acre tract.

The following diagram shows the method of numbering the tracts within a section.

111	112	121	122	211	212	221	222
	(1)		(2)		(1)		(2)
113	114	123	124	213	214	223	224
		[1]				[2]	
131	132	141	142	231	232	241	242
	(3)		(4)		(3)		(4)
133	134	143	144	233	234	243	244
311	312	321	322	411	412	421	422
	(1)		(2)		(1)		(2)
313	314	323	324	413	414	423	424
		[3]				[4]	
331	332	341	342	431	432	441	442
	(3)		(4)		(3)		(4)
333	334	343	344	433	434	443	444

Well Descriptions and Water-Level Measurements

Water levels in January or February for observation wells measured only once during the year are not included in this report, but have been used in preparing the maps which show the areal changes in water level from January 1952 to January 1953. In water-supply papers of this series preceding 1951, the winter measurements were given for all observation wells.

All measurements, except the mean monthly and mean annual artesian heads in wells in the Roswell basin, are given in feet above or below land-surface datum which approximates closely the land surface at the well. The mean artesian heads are given in feet above mean sea level.

Chaves County

Roswell Basin. --The Roswell basin extends along the west side of the Pecos River from north of Roswell in Chaves County to Lakewood in Eddy County. Most of the basin is in Chaves County but a considerable part lies in northern Eddy County. Water for irrigation is obtained from both shallow water-table wells and deep artesian wells. Discharge from the shallow and artesian aquifers is by means of wells, through springs, and by seepage to the Pecos River. The artesian aquifer also discharges by leakage into the shallow water aquifer. The discharge causes declines in storage which is reflected by lowering of water levels. Conversely, recharge by means of direct precipitation, flood runoff in the plains and mountains to the west of the irrigated area causes an increase in storage with a rise in water levels. In the shallow water aquifer recharge also occurs through return of irrigation water.

Precipitation at stations in the Roswell basin in 1952 was somewhat over 50 percent of normal and comparable with that of 1951. During 1952, precipitation amounted to 8.6 inches at Roswell, 6.3 inches below normal; 6.9 inches at Hagerman, 6.2 inches below normal, and 6.7 inches at Artesia, 5.8 inches below normal. In the plains and mountains to the west, the rainfall was greater but also below normal in 1952. The precipitation at Mayhill was 15.3 inches, 5.3 inches below normal and 11.8 inches at Elk, 5.9 inches below normal. As usual, most of the precipitation occurred during the spring and summer but even under normal conditions the rainfall is not generally sufficient to substantially affect the amount of water required from wells to irrigate the lands in the basin. However, the amount and intensity of precipitation directly affects the recharge to the basin and hence during 1952, conditions for recharge were below normal.

Records of power used in 1952 to pump 1,075 wells, for which there were comparable records in 1951, indicate that about 440,000 acre-feet of water was pumped for irrigation use in 1952 as compared with 400,000 acre-feet in 1951. It is estimated that 161,000 acre-feet of shallow water and 279,000 acre-feet of artesian water were used to irrigate the lands in the basin from about Roswell south. An estimated 28,000 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.

To observe changes in artesian head in the artesian aquifer, recording gages were maintained on 7 observation wells. Bimonthly measurements were made in 4 wells in the intake area for the artesian aquifer in 1952. Changes in storage in the water-table aquifer were observed by measuring of water levels in about 435 shallow wells in January 1952. Most of these measurements were used in preparing figures 44 and 45 showing the change in the shallow ground-water level in the northern and southern part of the Roswell basin from January 1952 to January 1953 but these records are not included herein. Measurements were made at bimonthly intervals in about 70 wells in the Roswell shallow ground-water basin and of these, 7 wells were equipped with recording gages. Records of measurements of water levels in the shallow wells have been published since 1938 and those for the artesian aquifer in the Roswell basin since 1935 in this series of water-supply papers.

Record low mean annual artesian heads occurred in 1952 in the 6 recorder equipped artesian wells in the Roswell basin having long periods of records. The decline in mean annual head from 1951 to 1952 ranged from 2.99 feet in the Greenfield well (13.25.27.211) to 11.91 feet in the Artesia well (18.26.5.330) an overall average decline of about 0.1 foot less than the preceding year, and 0.5 foot less than in 1950. The departure from average in 1952 for the 6 wells ranged from 10.0 feet below average in the Berrendo well (10.24.9.330) to 42.9 feet below average in the Artesia well. The difference in annual artesian heads between the highest on record, which was in 1941 for the Greenfield well and 1942 in the others, and that in 1952, ranged from 14.5 feet in the Berrendo well to 59.7 feet in the Artesia well. The mean monthly and mean annual heads, the departures from average in 1952, and the change of the mean monthly heads in 7 artesian wells are given in the following tables.

Departure in 1952 from average and change from 1951 to 1952 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 number	10.24.9.330		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	1951 to 1952	Departure from average	1951 to 1952	Departure from average	1951 to 1952	Departure from average	1951 to 1952	Departure from average	1951 to 1952	Departure from average	1951 to 1952	Departure from average	1951 to 1952
Jan.	-7.1	-2.44	-7.1	-2.30	-7.6	-2.29	-4.3	+1.94	-9.3	+0.16	....	....	-26.2	+1.49
Feb.	-8.4	-3.77	-8.4	-3.15	-8.4	-3.52	-8.3	-6.03	-10.5	-5.26	....	....	-35.9	-11.92
Mar.	-7.8	-2.77	-8.7	-3.23	-8.7	-3.13	-18.3	+2.15	-14.2	+3.65	....	....	-38.3	-14.43
Apr.	-8.8	-2.95	-8.4	-2.75	-8.7	-3.04	-23.1	-1.90	-17.6	-4.67	....	-4.86	-40.9	-17.00
May	-9.6	-3.21	-10.1	-4.16	-9.9	-3.99	-16.4	-4.00	-12.5	-4.66	....	-5.23	-33.9	-11.08
June	-11.7	-4.52	-11.5	-5.02	-12.4	-5.52	-26.0	-2.07	-21.1	+3.01	....	-5.12	-46.1	-13.80
July	-11.4	-3.11	-11.1	-3.28	-13.5	-3.96	-36.0	-6.98	-33.6	-6.20	....	-3.43	-49.7	-9.99
Aug.	-11.5	-3.22	-10.8	-3.73	-13.8	-4.40	-42.5	-5.66	-39.1	-6.85	....	-4.58	-65.1	-19.27
Sept.	-13.6	-4.32	-13.3	-4.35	-15.8	-5.21	-45.8	-11.50	-45.0	-11.78	....	-4.84	-64.4	-16.28
Oct.	-11.4	-2.11	-11.3	-2.07	-13.1	-1.94	-21.2	+2.93	-23.2	+1.73	....	-4.27	-44.1	-7.28
Nov.	-10.7	-3.30	-10.4	-3.23	-12.1	-3.81	-9.1	-2.38	-9.4	-3.16	....	-4.24	-38.0	-10.56
Dec.	-9.7	-2.76	-9.8	-3.17	-10.9	-3.42	-4.3	-2.31	-6.1	-3.55	....	-4.24	-37.0	-12.76
Annual	-10.0	-3.20	-10.3	-3.38	-11.4	-3.69	-21.1	-2.99	-20.3	-3.13	....	....	-42.9	-11.91
Record began	June 1926		June 1940		July 1940		August 1925		June 1940		March 1951		April 1931	

Mean monthly and mean annual artesian heads in artesian wells in Roswell basin in 1952 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 number	10.24.9.330		10.24.21.212		11.24.29.242		12.25.23.110		13.25.27.211		16.25.11.113		18.26.5.330	
1952	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
Jan.	31	3562.81	31	3561.97	31	3559.52	31	3529.29	26	e3518.48	31	3413.06	27	e3359.90
Feb.	29	3561.41	29	3560.99	29	3558.38	29	3521.09	26	e3509.22	29	3407.83	14	e3347.46
Mar.	31	3560.79	31	3558.57	31	3555.36	31	3500.44	31	3483.60	31	3405.95	29	e3337.97
Apr.	30	3557.79	30	3555.31	30	3551.03	30	3486.63	30	3465.92	30	3399.77	30	3328.50
May	26	e3557.05	31	3554.66	31	3550.61	31	3497.32	31	3480.46	31	3401.41	26	e3338.76
June	30	3554.53	30	3551.80	30	3547.12	30	3486.09	30	3468.26	30	3399.39	12	e3324.30
July	31	3553.80	31	3550.95	31	3545.16	31	3473.26	31	3452.15	31	3394.89	28	e3316.97
Aug.	24	e3552.79	31	3549.66	31	3542.72	31	3463.47	31	3439.60	31	3389.59	31	3296.31
Sept.	30	3552.11	30	3549.48	30	3542.63	30	3468.10	27	e3446.98	30	3387.31	30	3303.46
Oct.	31	3556.30	31	3554.75	31	3549.79	31	3505.90	11	e3491.52	31	3393.44	31	3335.48
Nov.	30	3557.97	30	3557.47	30	3553.37	30	3523.81	25	e3515.34	30	3400.68	30	3346.91
Dec.	31	3559.77	31	3559.01	31	3555.88	31	3530.07	31	3521.06	31	3406.34	31	3349.80
Mean annual		3557.26		3555.38		3550.96		3498.79		3482.72		3399.97		3332.15
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	e3517.5	....	.....	1942	3391.9
Lowest	1952	3557.26	1952	3555.38	1952	3550.96	1952	3498.79	1952	3482.72	....	.....	1952	3332.15
First year of record	1927	3571.2	1941	3566.2	1941	3564.2	1926	3525.7	1941	e3517.5	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	Sept. '52	3552.11	Sept. '52	3549.48	Sept. '52	3542.63	Aug. '52	3463.47	Aug. '52	3439.60	Sept. '52	3387.31	Aug. '52	3296.31
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.

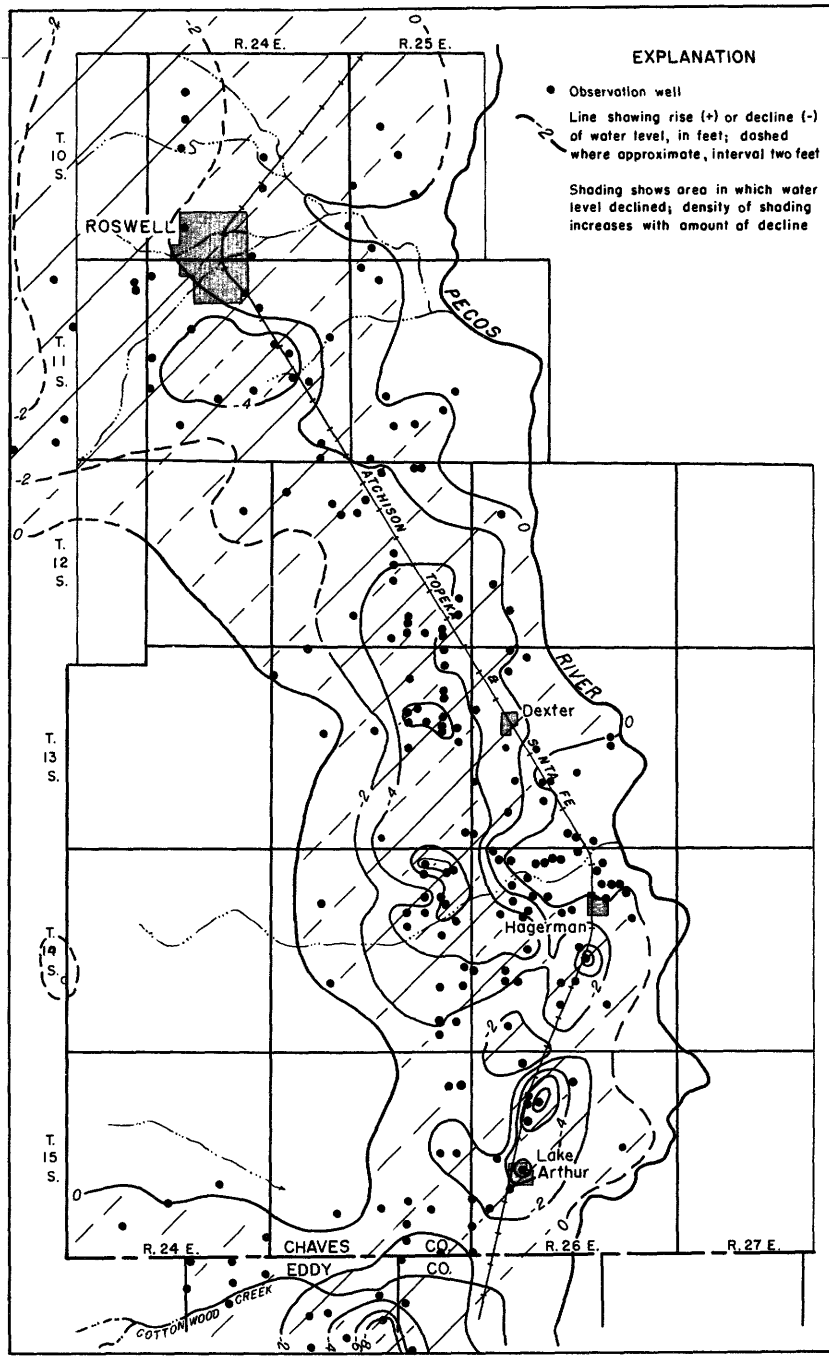


Figure 44.--Change in shallow ground-water level from January 1952 to January 1953 in northern part of Roswell basin, Chaves County, N. Mex.

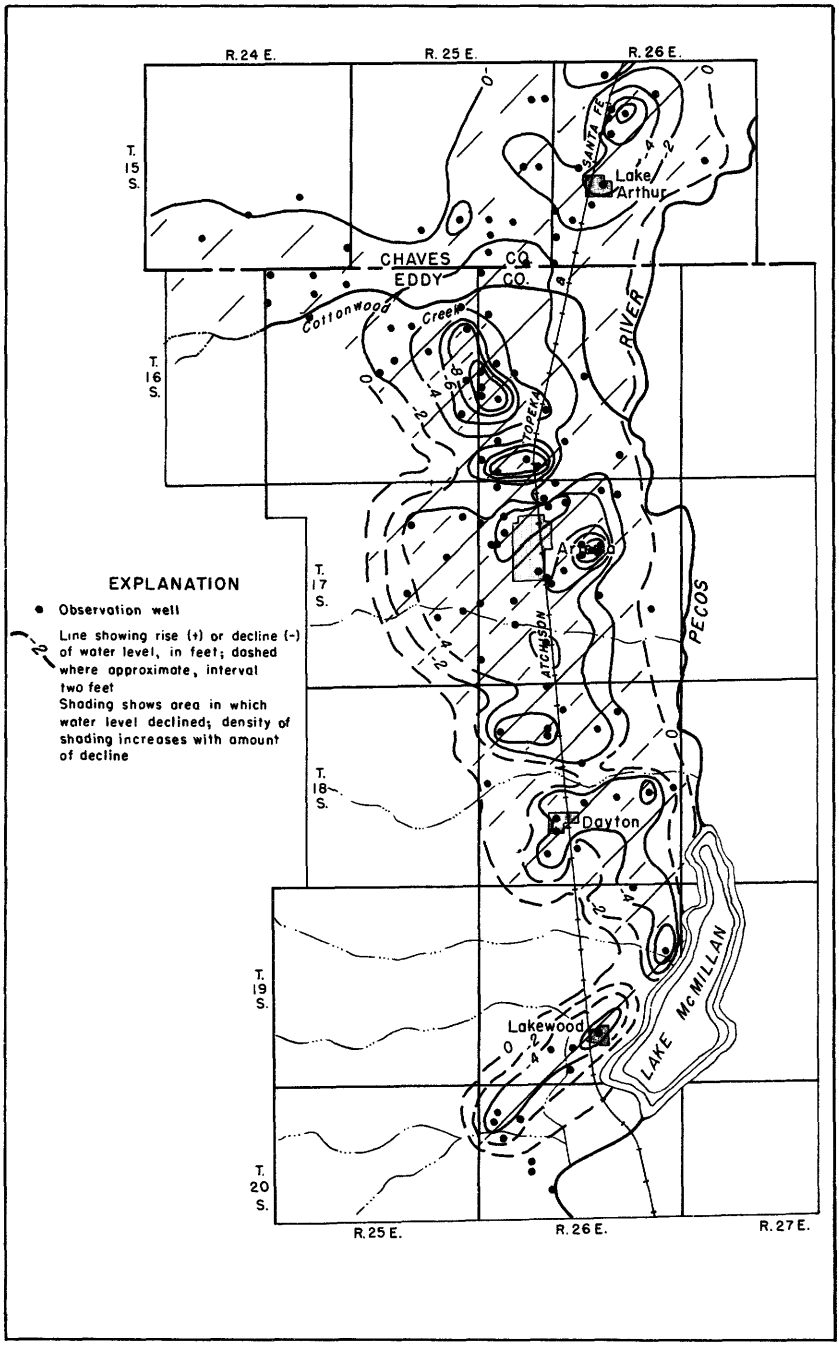


Figure 45.--Change in shallow ground-water level from January 1952 to January 1953 in southern part of Roswell basin, Eddy County, N. Mex.

The four wells approximately 20 miles west of the Pecos River in the intake area of the artesian aquifer in which bimonthly measurements were made in 1952, showed general declines in water level from that in 1951, reaching the lowest observed levels of record in three of the wells. In well 14.23.8.340 (M. D. Kincaid), the lowest water level of record was observed in November near the end of the irrigation season and was 3.3 feet lower than in September 1951, the lowest level observed in the previous year, and about 19.6 feet below the highest observed water level of record in 1943. Similarly, in wells 16.23.15.323 and 18.23.3.242, the lowest water levels of record were observed in November and were 4.3 and 1.3 feet, respectively, below that of the previous year's low. Farther south, in well 19.23.27.111 the lowest observed water level was in May and was 2.2 feet below the lowest observed water level in 1951, but 1.7 feet above the record low observed in July 1949.

In the Salt Creek-Macho Draw area, north of Roswell, the lowest observed water levels in 1952 in 5 wells measured at bimonthly intervals ranged between 3.2 and 7.6 feet below the lowest water level observed in 1951, an average decline of 4.5 feet. The net yearly decline in 17 observation wells was 2.1 feet in this area in 1952 as compared with a decline of 3.1 feet in these same wells the previous year.

From about Roswell south to the Eddy County line, net annual declines in water levels occurred in the shallow ground-water aquifer under most of the area and amounted to more than 2 feet under about 185 square miles as compared with 157 square miles in 1951. Water levels declined more than 4 feet under an area of 45 square miles and more than 6 feet under an area of 4 square miles. In much of the area, water levels reached record lows in 1952. In an area a few miles south of Roswell, water levels have declined between 19 and 21 feet since the record high levels observed in 1942. In the eastern part of T. 13 and 14 S., R. 25 E., the water level has declined in many wells between 28 and 35 feet since 1942. A slight rise in water levels occurred in an area north of Hagerman in 1952 probably due to slight changes in the duration of the pumping season in 1951 and 1952.

In Eddy County, net annual declines in shallow water levels of more than 2 feet occurred under an area of about 105 square miles, more than 4 feet under an area of 59 square miles, more than 6 feet under an area of 15 square miles, and more than 8 feet under an area of 5 square miles in 1952. The largest declines observed occurred in two small areas a few miles north of Artesia and to the east of Artesia. North of Artesia the decline in water level in 1952 more than offset the general rise in this area in 1951, again probably due to slight variations from year to year in the duration of the irrigation season. In the vicinity of Artesia water levels in 1952 were as much as 40 feet lower than the high level of 1942.

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 245.25 below lsd, Nov. 6, 1952. Records available: 1951-52. Jan. 23, 241..26; Mar. 10, 240.95; July 8, 243.85; Nov. 6, 245.25.

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 75.44 below lsd, Sept. 8, 1952. Records available: 1949-52. Jan. 12, 69.87; Mar. 10, 69.82 May 12, 72.28; July 8, 73.59; Sept. 8, 75.44; Nov. 6, 73.95.

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 27.59 below lsd, Jan. 12, 1952. Records available: 1949-52. Jan. 12, 27.59. Measurement discontinued.

8.24.18.144. 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 131.45 below lsd, July 8, 1952. Records available: 1949-52. Jan. 15, 126.62; Mar. 10, 126.75; July 8, 131.45; Nov. 6, 131.41.

8.24.35.432. W. G. 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 61.05 below lsd, Sept. 8, 1952. Records available: 1949-52. Jan. 14, 54.45; Mar. 10, 54.79; May 12, 57.52; July 8, 58.62; Sept. 8, 61.05; Nov. 6, 59.15.

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 104.62 below lsd, Nov. 6, 1952. Records available: 1948-52. Jan. 15, 97.90, pumped recently; Mar. 10, 93.28; May 12, 98.45; July 8, 104.43; Nov. 6, 104.62.

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 128.43 below lsd, June 25, 1952. Records available: 1948-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	125.56	125.07	124.96	125.33	126.59	127.66	107.02	96.85	98.59	.....	119.41	.....
2	125.55	125.06	124.96	125.36	126.63	127.70	105.09	97.32	98.96	.....	119.61	.....
3	125.53	125.05	124.96	125.39	126.67	127.73	103.52	97.83	99.32	111.81	119.79	.....
4	125.51	125.05	124.96	125.44	126.72	127.75	102.29	98.35	99.67	112.02	119.95	.....
5	125.49	125.04	124.97	125.48	125.76	127.79	101.31	98.90	100.05	112.40	120.11h	123.29
6	125.47	125.03	124.97	125.52	126.80	127.81	100.59	99.45	100.43	112.75	120.26	123.30
7	125.45	125.03	124.98	125.56	126.83	127.85	100.05	100.05	100.82	113.10	120.45	123.35
8	125.42	125.00	124.98	125.59	126.87	127.87	99.01	100.58	101.21	113.43	120.61	123.42
9	125.41	124.99	124.98	125.64	126.91	127.91	98.39	98.00	101.59	113.76	120.76	123.41
10	125.39	124.99	124.99	125.68	.....	127.93	97.91	96.83	101.99	114.10	120.92	123.52
11	125.37	124.98	124.99	125.73	.....	127.97	97.62	96.39	102.37	114.42	121.06	123.59
12	125.35	124.98	124.99	125.77	.....	128.00	97.51	96.12	102.78	114.71	121.19	123.64
13	125.33	124.97	125.00	125.81	.....	128.04	97.51	95.86	103.19	115.01	121.31	123.70
14	125.31	124.97	125.00	125.85	.....	128.07	97.24	95.68	103.60	115.27	121.42	123.73
15	125.30	124.97	125.01	125.90	.....	128.10	95.03	95.54	104.07	115.54	121.54	123.79
16	125.29	124.97	125.02	125.94	.....	128.14	94.43	95.47	104.52	115.82	121.66	123.84
17	125.27	124.97	125.03	125.98	.....	128.17	94.08	95.45	105.00	116.12	121.78	.....
18	125.25	124.96	125.05	126.03	.....	128.21	93.86	95.45	105.46	116.40	.....	.....
19	125.24	124.96	125.05	126.09	.....	128.24	93.72	95.45	105.94	116.66	.....h	123.97
20	125.22	124.96	125.07	126.13	.....	128.28	93.65	95.52	.....	116.92	.....	124.00
21	125.19	124.96	125.09	126.17	.....	128.30	93.63	95.63	.....	117.18h	122.27	124.06
22	125.19	124.96	125.10	126.21	.....	128.33	93.63	95.79	.....	117.42	122.31	124.10
23	125.18	124.96	125.12	126.26	.....	128.37	93.72	95.97	.....	117.63	122.41	124.13
24	125.17	124.96	125.13	126.30	127.43	128.40	93.90	96.18	.....	117.88	122.50	124.19
25	125.16	124.96	125.15	126.35	127.46	128.43	94.14	96.38	.....	118.07	122.58	124.22
26	125.14	124.96	125.16	126.39	127.49	125.28	94.41	96.63	.....	118.28	122.67	124.26
27	125.13	124.96	125.19	126.44	127.51	119.05	94.72	96.91	.....	118.48	122.75	124.30
28	125.11	124.96	125.21	126.47	127.55	115.18	95.08	97.22	.....	118.67	122.84	.....
29	125.10	124.96	125.23	126.51	127.57	112.01	95.48	97.56	.....	118.86	122.93	.....
30	125.09		125.26	126.55	127.60	109.31	95.92	97.89	.....	119.04	.....	.....
31	125.08		125.30		127.63		96.38	98.25		119.24		.....

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 59.25 below lsd, Sept. 3, 1952. Records available: 1946-52. Jan. 30, 50.27; May 13, 54.57; July 9, 57.03; Sept. 3, 59.25; Nov. 6, 55.15.

10.24.9.330. Berrendo well. 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 34.63 below lsd, Sept. 10, 1952. Records available: 1926-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	23.09	23.48	23.85	26.42	27.70	28.69	32.15	32.97	32.57	30.58	28.24	26.79
2	23.05	23.44	23.77	26.73	27.95	28.48	32.30	33.15	34.50	30.57	28.13	26.79
3	22.95	23.35	23.68	26.93	28.03	28.70	31.62	32.53	34.57	30.41	28.07	26.64
4	22.90	23.28	23.85	27.97	27.98	30.14	31.32	32.31	34.58	30.31	27.92	26.72
5	22.88	23.37	23.96	27.51	27.83	30.67	31.16	32.54	33.90	30.19	27.88	26.56
6	22.81	23.47	24.18	27.50	28.08	30.76	31.19	32.62	33.60	30.11	27.84	26.48
7	22.75	23.59	24.87	27.37	28.16	30.25	31.05	32.78	33.34	29.98	27.80	26.37
8	22.75	24.75	24.37	28.73	28.27	30.90	30.87	32.72	34.24	29.85	27.79	26.32
9	22.85	24.87	24.24	28.94	28.22	30.73	30.64	31.72	34.50	29.83	27.71	26.28
10	22.92	24.94	24.04	29.12	28.18	30.97	30.61	31.38	34.63	29.75	27.66	26.21
11	22.88	25.03	24.14	27.74	28.03	31.35	30.58	31.23	34.03	29.62	27.64	26.17
12	22.89	24.45	24.24	27.43	27.87	30.40	30.67	30.92	33.62	29.53	27.62	26.18
13	22.87	23.87	24.29	27.24	28.05	30.10	30.38	30.82	34.54	29.44	27.57	26.15
14	22.85	24.91	24.39	27.09	28.04	30.15	30.24	30.90	34.54	29.43	27.53	26.13
15	22.94	25.00	24.53	27.38	28.00	30.14	30.43	30.95	34.10	29.32	27.45	26.05
16	22.95	24.93	24.44	27.52	28.10	29.97	30.37	.....	33.98	29.24	27.39	25.97
17	22.97	23.85	24.38	27.87	.....	30.28	30.42	.....	34.17	29.17	27.34	25.92
18	23.00	23.68	24.57	27.39	.....	30.25	30.51	.....	34.06	29.16	27.44	25.85
19	23.02	23.80	25.22	27.20	.....	30.33	30.54	.....	34.31	29.07	27.55	25.84
20	23.02	23.90	24.98	27.02	.....	30.55	30.51	.....	34.28	28.98	27.50	25.85

10.24.9.330--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	22.96	23.88	24.98	26.90	.....	30.58	30.32	.....	33.82	28.89	27.48	25.80
22	23.08	23.93	25.51	27.04	28.05	30.55	30.69	32.10	31.94	28.87	27.47	25.79
23	23.12	23.98	25.27	27.08	28.05	30.53	31.01	31.78	31.75	28.82	27.26	25.83
24	23.18	24.02	25.13	27.15	28.04	30.54	31.41	31.94	31.58	28.67	27.17	25.83
25	23.16	23.78	26.60	27.24	28.06	30.58	31.38	31.85	31.44	28.57	27.04	25.73
26	23.27	23.70	26.77	27.19	27.89	31.80	31.54	33.24	31.30	28.43	26.99	25.72
27	23.36	23.63	26.44	27.13	28.38	32.00	31.52	32.87	31.08	28.40	28.11	25.73
28	23.27	23.68	26.30	27.03	28.39	32.15	32.05	32.51	30.83	28.43	26.92	25.73
29	23.29	23.79	25.98	27.23	28.52	31.45	32.01	32.52	30.73	28.37	26.87	25.69
30	23.38		26.14	27.49	28.59	31.83	32.55	32.62	30.67	28.31	26.79	25.72
31	23.43		26.03		28.68		32.84	32.82		28.32		25.78

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 32.02 below lsd, Sept. 5, 1952. Records available: 1940-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.98	18.93	19.40	23.20	24.55	25.47	28.83	31.33	30.53	27.03	24.15	21.73
2	18.02	18.88	19.29	23.56	24.93	25.18	28.70	31.43	31.20	26.97	23.88	21.65
3	17.87	18.66	19.13	23.65	24.94	25.86	28.90	30.43	31.48	26.93	23.75	21.63
4	17.84	18.58	19.62	23.89	24.75	26.19	28.89	30.10	31.61	26.82	23.61	21.75
5	17.81	18.78	19.52	24.23	24.56	26.97	28.90	30.97	32.02	26.55	23.54	21.63
6	17.68	18.86	20.08	24.08	24.99	26.42	28.42	31.28	31.48	26.38	23.57	21.52
7	17.62	18.94	20.35	23.77	24.74	27.13	27.91	31.15	31.03	26.18	23.53	21.49
8	17.73	19.03	20.23	24.34	24.92	26.72	27.72	30.80	30.62	26.05	23.45	21.44
9	18.10	19.10	19.75	24.70	24.89	26.38	27.43	29.13	31.54	26.15	23.22	21.50
10	18.28	19.12	19.58	25.16	24.72	27.07	27.59	28.63	31.68	25.91	23.15	21.42
11	18.21	18.89	19.83	23.83	24.18	27.79	27.40	28.42	31.71	25.75	23.12	21.35
12	18.22	19.05	20.12	23.50	24.02	27.71	27.67	28.25	31.27	25.63	23.04	21.38
13	18.20	19.07	20.13	23.65	24.39	27.59	27.32	28.05	31.10	25.50	22.93	21.35
14	18.18	19.15	20.39	23.59	24.40	27.63	27.06	28.29	30.74	25.65	22.94	21.30
15	18.32	19.24	20.60	24.52	24.41	27.19	27.50	28.35	30.17	25.43	22.83	21.21
16	18.33	19.17	20.43	24.31	24.57	26.73	27.35	28.39	30.18	25.28	22.75	21.21
17	18.37	18.96	20.50	24.48	24.90	27.73	27.40	27.78	30.74	25.24	22.67	21.18
18	18.42	18.86	20.65	23.97	24.28	27.55	27.45	27.58	30.39	25.24	22.75	21.13
19	18.48	19.12	21.41	23.67	24.09	28.08	27.47	28.18	30.52	25.08	22.85	21.23
20	18.44	19.34	21.36	23.34	24.18	28.56	27.32	28.43	29.99	25.03	22.83	21.37
21	18.38	19.34	21.45	23.19	24.85	28.13	26.94	29.04	29.38	24.82	22.70	21.26
22	18.57	19.42	21.66	23.40	24.83	28.17	27.75	29.07	28.54	24.77	22.70	21.25
23	18.59	19.38	21.64	23.51	24.90	27.95	28.06	29.50	28.28	24.75	22.42	21.37
24	18.66	19.28	21.41	23.67	24.78	28.10	28.62	29.77	28.07	24.68	22.25	21.33
25	18.68	19.08	22.20	23.87	24.91	28.19	28.38	29.64	28.14	24.43	22.22	21.17
26	18.76	18.94	22.41	23.81	24.61	28.39	28.97	30.09	27.96	24.33	22.17	21.14
27	18.82	18.97	22.53	23.58	25.67	28.79	28.84	30.41	27.73	24.27	22.07	21.25
28	18.64	19.04	22.54	23.44	25.54	29.00	29.32	30.42	27.54	24.51	21.95	21.21
29	18.69	19.24	22.66	23.70	25.79	28.69	30.24	30.26	27.33	24.44	21.92	21.13
30	18.85		22.85	23.97	25.80	28.30	30.32	30.69	27.13	24.33	21.79	21.26
31	18.87		22.67		25.79		30.83	30.78		24.34		21.29

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 36.44 below lsd, Nov. 6, 1952. Records available: 1946-52. Jan. 30, 35.10; Mar. 11, 35.08; May 13, 35.87; July 9, 36.31; Sept. 3, 35.88; Nov. 6, 36.44.

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 36.88 below lsd, Nov. 6, 1952. Records available: 1942-52. Jan. 29, 35.91; Mar. 11, 35.85, pumped recently; May 13, 36.68; July 9, 37.72, pumped recently; Sept. 3, 38.79, pumping; Nov. 6, 36.88.

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 75.20 below lsd, July 9, 1952. Records available: 1947-52. Jan. 29, 66.10; Mar. 11, 67.26; May 13, 72.51; July 9, 75.20; Nov. 7, 72.18.

11.23.3.342. J. L. Mask. Drilled unused irrigation well in limestone member of San Andres formation, diameter 15 inches, depth 595 feet, black lime170-175, gray lime 505-508, brown lime 540-595. Highest water level 159.63 below lsd, Dec. 31, 1952; lowest 164.70 below lsd, Sept. 16, 1952. Records available: 1952.

11.23.3.342--Continued.

Daily highest water level from recorder graph*

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	163.50	164.08	163.74	162.03	160.60
2	.....	163.39	164.21	163.70	162.03	160.54
3	.....	163.45	164.19	163.63	161.99	160.50
4	.....	163.44	164.26	163.59	161.83	160.55
5	.....	163.50	164.34	163.55	161.81	160.46
6	.....	163.58	164.35	163.49	161.77	160.37
7	.....	163.66	164.39	163.47	161.64	160.33
8	.....	163.95	164.34	163.37	161.67	160.35
9	.....	163.65	164.41	163.33	161.66	160.35
10	.....	163.50	164.48	163.28	161.58	160.27
11	.....	163.47	164.56	163.16	161.54	160.22
12	.....	163.43	164.57	163.12	161.43	160.24
13	.....	163.35	164.58	163.04	161.38	160.19
14	162.49	163.35	164.60	163.00	161.38	160.14
15	162.39	163.37	164.55	162.92	161.30	160.07
16	162.36	163.37	164.70	162.87	161.25	160.05
17	162.43	163.35	164.65	162.85	161.24	160.02
18	162.37	163.28	164.58	162.82	161.23	160.01
19	162.40	163.38	164.76	162.73	161.19	159.98
20	162.39	163.45	164.58	162.66	161.20	159.94
21	162.37	163.51	164.57	162.62	161.08	159.85
22	162.50	163.61	164.36	162.60	161.08	159.88
23	162.58	163.66	164.26	162.51	161.00	159.89
24	162.69	163.67	164.20	162.45	160.89	159.90
25	162.73	163.69	164.14	162.38	160.89	159.83
26	162.81	163.86	164.05	162.36	160.89	159.80
27	162.87	163.94	163.97	162.28	160.82	159.75
28	162.83	163.99	163.89	162.22	160.71	159.73
29	163.00	164.24	163.85	162.19	160.73	159.68
30	163.30	164.06	163.78	162.12	160.64	159.69
31	163.25	164.09		162.07		159.63

* No record for January, February, March, April, May, and June.

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 115.50 below lsd, July 9, 1952. Records available: 1950-52. Jan. 27, 106.99; May 13, 123.92, pumping; July 9, 115.50; Nov. 7, 113.87.

11.23.22.343. Byrum Brown. Drilled irrigation artesian well in Chalk Bluff formation and limestone member of San Andres formation. Highest water level 157.90 below lsd, Mar. 6, 1951; lowest 172.27 below lsd, Sept. 7, 1952. Records available: 1951-52. Jan. 26, 160.83; Mar. 11, 161.39; May 13, 166.54; July 9, 169.63; Sept. 7, 172.27. Measurement discontinued.

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. Records available: 1952. Sept. 7, 172.29; Nov. 7, 168.25.

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. Pressure pump operates intermittently. Highest water level 11.14 below lsd, Dec. 10, 1941; lowest 39.13 below lsd, Sept. 3, 1952. Records available: 1937-52. Jan. 29, 18.81, pumped recently; Mar. 11, 25.50; May 13, 27.38; July 9, 40.59, pumped recently; Sept. 3, 39.13.

11.24.14.331. 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 60.88 below lsd, Sept. 3, 1952. Records available: 1947-52. Jan. 29, 37.22; Mar. 11, 42.50; May 14, 47.05; July 9, 56.98; Sept. 3, 60.88; Nov. 7, 42.05.

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 88.50 below lsd, Sept. 3, 1952. Records available: 1938-52. Jan. 29, 71.00; Mar. 11, 73.14; May 14, 78.77, pumped recently; July 9, 84.33, pumped recently; Sept. 3, 88.50; Nov. 7, 78.45.

11.24.29.242. Mountain View. Drilled observation 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 85.92 below lsd, Sept. 11, 1952. Records available: 1940-52.

11.24.29.242--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	67.27	68.33	69.25	74.89	76.44	76.38	81.67	84.38	84.06	80.17	75.48	71.71
2	67.33	68.30	68.88	75.25	76.72	76.15	82.24	84.76	84.78	79.93	75.27	71.64
3	67.15	68.07	68.70	75.44	76.64	77.05	82.17	84.18	84.89	79.83	75.09	71.57
4	67.04	67.93	69.20	75.97	76.05	77.65	81.63	83.70	85.18	79.63	74.87	71.69
5	66.95	68.17	69.37	76.33	75.68	78.05	81.22	84.51	85.45	79.24	74.74	71.50
6	66.78	68.41	69.64	75.94	76.50	78.37	80.98	85.00	85.49	79.03	74.84	71.31
7	66.63	68.47	69.79	75.39	76.65	78.58	80.52	85.18	84.92	78.73	74.81	71.18
8	66.93	68.43	69.82	76.04	76.76	77.97	80.57	85.37	84.53	78.48	74.62	71.16
9	67.29	68.53	69.50	76.36	76.73	77.57	80.22	84.16	85.56	78.32	74.29	71.38
10	67.40	68.22	69.30	76.37	76.57	78.54	80.82	82.75	85.77	77.99	74.15	71.23
11	67.28	68.07	69.88	75.37	75.67	79.17	81.05	82.50	85.92	77.69	74.12	71.08
12	67.38	68.24	70.26	75.03	75.40	79.69	81.44	82.93	85.80	77.34	73.95	71.19
13	67.22	68.48	70.50	74.75	76.00	80.00	80.88	82.88	85.79	77.23	73.76	71.21
14	67.18	68.66	70.84	74.51	76.20	80.39	80.52	83.28	85.22	77.28	73.77	71.10
15	67.42	68.65	71.22	75.53	76.14	79.77	81.11	83.32	84.95	77.12	73.62	70.89
16	67.51	68.57	70.54	75.84	76.20	79.45	81.04	83.38	85.10	76.90	73.30	71.07
17	67.45	68.38	70.29	76.14	76.27	80.39	80.88	82.43	85.43	76.86	73.24	71.13
18	67.48	68.24	71.17	75.61	75.29	80.73	80.97	82.19	85.27	76.72	73.52	71.14
19	67.48	68.66	71.76	75.20	75.10	80.90	81.22	83.02	85.25	76.35	73.60	71.11
20	67.42	68.92	72.23	74.81	75.30	80.89	80.58	83.52	85.15	76.15	73.58	71.26
21	67.35	68.87	72.48	74.59	75.44	80.61	80.24	83.80	84.15	76.16	73.41	70.95
22	67.65	68.99	72.82	75.11	75.81	79.88	81.14	84.29	83.08	76.19	73.37	70.88
23	67.82	68.99	72.34	75.17	75.87	79.55	81.63	84.26	82.63	76.08	72.88	70.96
24	67.82	68.85	72.01	75.34	76.21	80.20	81.83	83.92	82.42	75.95	72.67	71.15
25	67.90	68.62	73.23	75.69	75.58	80.73	82.00	83.49	82.12	75.88	72.63	70.83
26	68.00	68.38	73.40	75.82	75.25	80.88	82.22	84.39	81.92	75.38	72.43	70.73
27	68.03	68.58	73.77	75.28	76.33	81.23	82.13	84.80	81.61	75.32	72.38	70.94
28	67.82	68.70	73.85	75.05	76.17	81.24	81.78	84.86	80.97	75.61	72.14	70.78
29	68.02	69.03	74.14	75.78	76.39	81.03	83.09	84.69	80.78	75.53	72.09	70.63
30	68.13		74.35	76.14	76.57	80.74	83.54	84.84	80.43	75.48	71.84	70.97
31	68.20		73.89		76.90		83.90	84.54		75.70		71.11

11.25.6.421a. Leo Williamson. Drilled unused water-table well in valley fill, diameter 8 inches, depth 85 feet. Highest water level 4.36 below lsd, Sept. 8, 1950; lowest 11.14 below lsd, Sept. 15, 1948. Records available: 1941-52. Jan. 29, 8.18; Mar. 11, 9.19; May 13, 5.30; July 9, 4.87; Sept. 3, 5.50; Nov. 6, 9.14.

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 83.19 below lsd, Nov. 10, 1952. Records available: 1942-52. Jan. 28, 75.93; Mar. 13, 76.68; May 15, 81.90; July 11, 91.42, pumping; Sept. 5, 90.00, pumping; Nov. 10, 83.19.

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 65.57 below lsd, Sept. 3, 1952. Records available: 1937-52. Jan. 26, 57.89; Mar. 11, 57.90; May 14, 61.44; July 10, 63.04; Sept. 3, 65.57; Nov. 7, 62.95.

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 101.33 below lsd, Nov. 7, 1952. Records available: 1947-52. Jan. 25, 95.24; Mar. 12, 101.90, nearby well being pumped; May 14, 98.34; July 10, 110.11, nearby well being pumped; Sept. 3, 112.46, nearby well being pumped; Nov. 7, 101.33.

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 to 790. Land-surface datum is 3,546.19 feet above msl. Highest water level 1.74 below lsd, Jan. 15, 1942; lowest 86.40 below lsd, Sept. 6, 1952. Records available: 1925-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.51	24.08	25.97	65.33	54.13	39.72	71.20	83.44	80.90	61.26	28.06	16.70
2	12.13	23.03	24.30	67.12	56.54	38.43	73.52	83.19	83.83	60.39	27.08	16.14
3	11.83	20.56	24.33	69.63	57.33	42.70	74.65	78.87	85.85	59.85	26.50	15.95
4	11.37	20.25	27.38	71.80	54.26	46.51	75.46	78.15	85.68	57.75	26.98	16.22
5	11.25	22.56	29.70	72.78	53.39	47.76	74.34	80.87	86.32	53.78	28.38	16.00

12.25.23.110--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6	11.38	24.25	31.53	64.37	55.46	49.77	73.34	82.78	86.40	51.08	28.33	16.07
7	11.00	24.54	32.33	63.00	55.50	52.57	72.48	83.76	81.37	47.83	28.48	14.87
8	11.23	25.66	34.05	67.55	55.27	50.52	65.00	84.41	80.29	45.68	25.10	14.44
9	13.53	25.85	32.90	70.72	55.19	49.85	61.97	82.78	81.17	44.03	23.82	14.34
10	13.08	23.87	32.17	71.03	52.48	52.92	67.59	74.67	82.18	41.73	23.06	14.58
11	13.18	22.98	35.54	57.15	46.75	56.62	70.30	75.08	81.57	39.93	22.37	14.70
12	14.25	24.23	37.23	53.12	46.06	58.14	72.95	79.28	80.00	37.62	21.28	14.74
13	14.88	24.52	39.17	53.33	48.79	61.48	70.40	81.74	80.00	37.20	20.85	15.37
14	15.04	25.81	40.60	50.66	50.17	63.78	69.53	82.43	78.54	37.15	21.15	15.19
15	16.25	25.87	42.88	55.16	50.16	59.54	65.98	83.22	78.55	36.74	20.94	14.87
16	17.72	26.75	42.87	58.05	49.38	59.07	64.33	83.42	81.44	35.47	20.03	15.16
17	17.63	25.54	42.40	59.62	49.93	60.30	65.24	80.18	82.45	34.88	19.83	16.14
18	18.02	25.32	46.15	56.94	41.78	63.05	64.48	79.42	83.07	34.78	20.25	17.17
19	18.06	26.08	50.55	56.25	39.60	65.08	65.50	82.45	82.23	33.17	20.22	17.18
20	18.11	26.82	56.08	49.80	41.98	63.53	65.28	84.43	80.23	32.50	20.45	16.09
21	18.37	27.25	57.14	46.50	42.73	65.72	65.69	83.32	76.92	32.95	20.21	15.37
22	19.31	26.45	57.69	51.42	42.33	61.93	68.89	84.77	69.57	32.72	19.77	15.16
23	20.92	26.34	54.90	52.22	45.13	62.33	72.00	84.03	67.37	32.80	18.96	15.26
24	21.02	24.87	54.42	53.35	45.00	67.11	74.80	82.08	68.28	32.36	18.25	15.35
25	20.33	22.23	57.08	52.18	43.20	67.98	76.99	80.51	69.12	31.08	18.50	14.35
26	20.08	21.59	56.33	52.43	42.22	68.90	79.66	81.33	67.87	29.66	18.61	14.03
27	19.47	23.50	60.93	46.63	41.78	71.33	77.18	82.58	66.19	29.32	18.82	14.90
28	19.92	23.98	61.38	44.83	39.74	70.55	77.17	82.75	63.13	30.93	18.58	14.90
29	22.14	25.48	64.08	48.53	39.11	69.32	79.18	83.25	61.78	30.80	18.02	15.27
30	23.22		61.89	50.82	39.34	68.04	80.78	83.79	60.28	30.92	17.18	17.35
31	24.07		61.82		40.22		83.68	81.03		29.51		19.17

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 84.78 below lsd, July 10, 1952. Records available: 1945-52. Jan. 25, 66.62; Mar. 12, 76.33; May 14, 77.53; July 10, 84.78; Nov. 7, 77.36.

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 16.34 below lsd, Nov. 4, 1949. Records available: 1944-52. Jan. 25, 15.48; Mar. 12, 15.27; May 14, 15.61; July 10, 15.62; Sept. 3, 16.31; Nov. 7, 16.34, nearby well being pumped.

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 18.89 below lsd, Nov. 7, 1952. Records available: 1939-52. Jan. 25, 16.07; Mar. 12, 17.67; May 14, 17.62; July 10, 17.71; Sept. 3, 18.86; Nov. 7, 18.89.

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 83.88 below lsd, Nov. 8, 1952. Records available: 1940-52. Jan. 24, 69.11; Mar. 12, 84.19, nearby well being pumped. May 14, 79.22; July 10, 91.69, nearby well being pumped; Sept. 3, 90.59, pumped recently; Nov. 8, 83.88.

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 100.02 below lsd, Sept. 10, 1951. Records available: 1939, 1941-52. Jan. 23, 73.58; Mar. 12, 75.56; May 14, 88.74; July 10, 112.62, pumping; Sept. 3, 126.45, pumping; Nov. 8, 88.14.

13.25.27.211. Greenfield. Drilled observation artesian well in limestone member of San Andres formation, diameter 10 inches, depth 880 feet, depth to artesian aquifers 740 and 795. Land-surface datum is 3,523.76 feet above msl. Highest water level 12.94 above lsd, Jan. 13, 1942; lowest 87.06 below lsd, Aug. 22, 1952. Records available: 1940-52.

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	+2.26	-11.84	-12.07	-63.56	-53.00	-27.85	-66.50	-80.58	-79.94	.....	-13.60	-2.21
2	2.27	9.32	11.15	68.60	56.33	27.00	68.19	81.68	85.54e	-56.95	13.49	2.19
3	2.09	7.32	13.79	68.04	55.31	32.35	71.88	75.37	85.00e	55.80	.....	2.18
4	2.22	7.13	19.38	67.25	48.70	38.62	70.81	76.39	84.62	.....	.....	4.01
5	2.12	9.24	20.51	68.88	46.68	38.53	69.96	80.72	83.48	.....	.....	3.87
6	1.42	11.26	24.87	59.66	49.54	39.51	70.38	82.54	82.18	.....	.....	2.74
7	1.77	13.08	25.93	60.42	52.21	46.84	71.63	82.00	79.85	.....	11.42	1.55
8	1.35	14.38	24.48	67.03	51.28	44.57	52.13	84.51	78.19	.....	9.80	1.16
9	1.68	13.57	21.88	69.62	50.49	44.14	49.16	83.90	78.90	.....	8.67	1.41
10	.27	11.05	21.39	69.82	45.62	52.56	62.57	68.44	77.61	.....	8.38	1.73

13.25.27.211--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	+1.21	-9.98	-26.58	-46.72	-38.60	-56.22	-70.48	-75.55	-77.62	.....	-8.50	-1.07
12	-1.20	11.82	25.73	43.23	38.86	59.54	71.60	79.35	76.20	.....	6.83	.68
13	.20	12.86	30.10	49.53	46.61	58.64	68.12	83.36	76.71	.....	6.29	2.48
14	1.04	16.13	33.06	47.17	44.14	59.17	68.40	83.65	73.02	.....	7.97	1.03
15	4.98	17.17	35.00	53.75	43.14	51.62	66.32	83.93	71.95	.....	7.69	-.51
16	6.11	15.64	31.90	52.13	41.00	50.18	63.88	85.12	81.22	.....	7.07	+.10
17	7.58	13.36	31.62	54.85	40.00	54.86	65.35	82.82	80.15	-23.78	7.12	+.22
18	8.08	12.97	36.72	49.07	30.72	56.04	64.80	81.94	82.24	22.05	6.70	-1.42
19	7.21	15.55	47.12	49.77	29.12	54.25	65.77	85.37	81.63	21.15	6.89	-.62
20	6.78	16.65	49.75	39.39	34.02	52.17	63.34	85.78	78.87	19.92	7.77	+.07
21	5.84	14.72	50.73	39.00	32.78	55.98	63.12	85.32	73.90	19.05	6.97	+.37
22	8.03	13.62	52.94	45.97	32.56	54.05	66.08	87.06	65.12	18.79	5.93	+.57
23	9.05	.....	49.32	45.92	33.98	53.12	70.26	85.86	63.73	18.90	3.18	-.94
24	8.49	.....	50.88	49.67	33.79	57.69	70.98	83.12	66.78	18.97	2.66	1.33
25	8.87	.....	52.08	50.15	32.64	58.34	76.24	82.17	68.04	18.18	3.27	1.34
26	.....	12.56	53.08	48.92	32.03	e62.10	74.88	85.91	66.75	17.19	3.99	1.65
27	.....	11.58	54.63	40.87	30.50	69.44	74.04	85.84	65.34	17.35	4.47	1.13
28	.....	12.73	53.43	39.48	27.65	68.20	74.29	85.73	63.12	.....	2.71	.48
29	.....	14.44	60.90	52.06	27.30	e62.58	78.22	86.20	.....	.....	2.23	1.85
30	11.33		58.47	54.64	29.66	e60.50	81.89	85.38	.....	17.38	1.85	2.98
31	11.83		60.44		31.91		81.78	80.89		16.34		5.50

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 95.28 below lsd, Nov. 8, 1952. Records available: 1948-52. Jan. 22, 91.23; Mar. 12, 91.56; May 14, 92.09; July 10, 93.15; Sept. 3, 94.35; Nov. 8, 95.28.

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 25.24 below lsd, Sept. 23, 1952. Records available: 1939-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.56	20.08	20.44	22.61	22.47	.....	22.51	22.95	24.73	25.02	24.22	24.34
2	20.53	20.07	20.42	22.68	22.45	h21.86	22.58	23.09	24.78	25.01	24.21	24.33
3	20.50	20.07	20.41	22.74	22.41	21.83	22.65	23.18	24.81	25.00	24.21	24.32
4	h20.46	20.07	20.41	22.80	22.38	21.81	22.74	23.27	24.82	24.97	24.20	24.32
5	20.42	20.07	20.43	22.85	22.35	21.81	.....	23.34	24.86	24.94	24.19	24.31
6	20.38	20.07	20.48	22.90	22.32	21.81	.....	23.41	24.86	24.91	24.19	24.30
7	20.35	20.08	20.53	22.94	22.31	21.81	22.94	23.48	24.87	24.89	24.17	24.28
8	20.31	20.10	20.60	22.97	22.31	21.81	22.94	23.56	24.88	24.87	24.16	24.26
9	20.29	20.13	20.65	22.99	22.32	21.81	22.92	23.65	24.88	24.84	24.16	24.25
10	20.27	.....	20.71	23.01	22.36	21.81	22.88	23.72	24.88	24.84	24.16	24.24
11	h20.23	.....	20.78	23.01	22.36	21.81	22.84	23.74	24.90	24.82	24.15	24.22
12	20.20	.....	20.85	22.96	22.32	21.82	22.79	23.74	24.93	24.78	24.15	.....
13	20.16	.....	20.94	22.91	22.28	21.86	22.72	23.74	.....	24.74	24.15	.....
14	20.13	.....	21.02	22.87	22.24	21.90	22.64	23.75	.....	24.70	24.15	.....
15	20.13	h20.54	21.13	22.82	22.20	21.90	22.56	23.75	.....	24.67	24.16	.....
16	20.14	.....	21.26	22.78	22.18	21.88	22.50	23.77	.....	24.65	.....	.....
17	20.16	.....	21.38	22.73	22.18	21.85	22.42	23.78	.....	24.59	.....	.....
18	20.19	.....	21.47	22.68	22.18	21.84	22.31	23.80	.....	24.56	.....	.....
19	20.22	.....	21.48	22.64	22.15	21.83	22.26	23.85	h25.16	24.53	.....	24.09
20	20.23	.....	.....	22.59	22.12	21.83	22.23	23.90	25.16	24.50	.....	24.06
21	20.23	.....	h21.80	22.55	22.09	21.85	22.21	23.98	25.20	24.48	h24.25	24.04
22	20.22	.....	21.84	22.52	22.05	21.88	22.21	24.10	25.23	24.45	24.25	24.04
23	h20.21	.....	21.91	22.51	22.03	21.90	22.23	24.14	25.24	24.42	24.27	24.04
24	20.18	.....	21.98	22.50	22.03	21.94	22.29	24.22	25.23	24.40	24.29	24.04
25	20.17	20.51	22.04	22.49	22.02	21.98	22.37	24.30	25.21	24.37	24.29	24.04
26	20.14	20.49	22.12	.....	22.01	22.05	22.45	24.36	25.20	24.34	24.32	24.03
27	20.13	20.48	22.22	.....	22.01	22.14	22.52	24.42	25.17	24.32	e24.33	.....
28	20.12	20.46	22.31	.....	22.02	22.28	22.58	24.48	25.13	24.30	24.34	.....
29	20.11	20.45	22.41	.....	21.98	22.38	22.65	24.55	25.09	24.28	24.34	.....
30	20.09		22.48	22.47	e21.94	22.45	22.75	24.60	25.05	24.26	24.34	.....
31	20.08		22.55		.....		22.85	24.67		24.24		.....

e Estimated.
h Tape measurement.

13.27.17.321. 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: 1937-52. Jan. 24, 14.15; Mar. 12, 30.07, pumping; May 14, 21.04, pumped recently; July 10, 23.03, pumped recently; Sept. 4, 36.02, pumping; Nov. 10, 24.59, pumped recently.

13.26.23.111. Horton Burke. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 287 feet. Highest water level 3.55 below lsd, Feb. 2, 1942; lowest 11.16 below lsd, Sept. 10, 1951. Records available: 1938-52. Jan. 23, 6.96; Mar. 12, 6.83; May 14, 8.08; July 10, 35.80, pumping; Sept. 4, 31.12, pumping; Nov. 10, 8.35.

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 29.89 below lsd, Sept. 4, 1952. Records available: 1938-52. Jan. 23, 23.48; Mar. 12, 27.07; May 14, 23.77; July 10, 27.96; Sept. 4, 29.89; Nov. 10, 24.52.

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. In intake area of artesian aquifer. Highest water level 257.55 below lsd, Feb. 9, 1943; lowest 277.23 below lsd, Nov. 10, 1952. Records available: 1940-52. Jan. 17, 272.89; Mar. 13, 273.00; May 15, 274.58, pumping; July 11, 275.67; Sept. 5, 277.23, pumping; Nov. 10, 277.23.

14.23.24.444. 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 156.67 below lsd, Nov. 10, 1952. Records available: 1951-52. Jan. 17, 152.32; Mar. 13, 152.61; May 15, 154.16; Sept. 5, 156.92, pumping; Nov. 10, 156.67.

14.25.1.344a. V. F. Flores. 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 91.39 below lsd, Nov. 10, 1952. Records available: 1949-52. Jan. 22, 84.50; Mar. 13, 82.95; May 14, 86.30; July 10, 91.01; Sept. 4, 96.17, pumping; Nov. 10, 91.39.

14.25.2.233a. L. F. Massengale. 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 98.05 below lsd, Nov. 10, 1952. Records available: 1940-52. Jan. 22, 88.71; Mar. 13, 88.40; May 14, 95.12; July 10, 94.86; Sept. 4, 118.04, pumping; Nov. 10, 98.05.

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 76.92 below lsd, Nov. 10, 1952. Records available: 1938-52. Jan. 17, 76.52; Mar. 13, 76.61; May 15, 76.76; July 11, 76.85; Sept. 5, 76.78; Nov. 10, 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 81.95 below lsd, Nov. 29, Dec. 10, 1952. Records available: 1926, 1937-47, 1949, 1951-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	78.51	78.14	78.24	78.60	79.21	.....	79.65	80.07	80.70	81.30	81.66	.....
2	78.53	78.05	78.29	78.58	79.21	h79.42	79.65	80.12	80.73	81.32	81.69	.....
3	78.48	78.19	78.32	78.62	79.21	79.47	.....	80.17	80.73	81.25	81.70	.....
4	78.40	78.15	78.28	78.64	79.22	79.46	.....	80.19	80.74	81.30	81.68	.....
5	78.46	78.15	.....	78.67	79.23	79.48	.....	80.22	80.83	81.30	.....	81.88
6	78.43	78.15	.....	78.68	79.25	79.47	.....	80.22	80.85	81.32	.....	81.90
7	78.42	78.11	78.25	78.74	79.26	79.50	h79.69	80.22	80.88	81.33	h81.69	81.90
8	78.43	78.09	78.30	78.76	79.26	79.50	79.74	80.23	80.90	81.33	81.74	81.94
9	78.47	78.13	78.30	78.84	79.24	79.50	79.74	80.30	80.93	81.34	81.78	81.94
10	78.37	78.13	78.32	78.77	79.28	79.49	79.75	80.27	80.94	81.36	81.80	81.95
11	78.32	78.15	78.30	78.80	79.26	79.48	79.79	80.31	80.97	81.41	81.80	81.92
12	78.39	78.13	78.32	78.84	79.31	79.47	79.79	80.31	.....	81.41	81.74	81.92
13	78.35	78.16	h78.25	78.85	79.30	79.45	79.83	80.35	.....	81.42	81.76	.....
14	78.38	78.16	78.31	78.87	79.29	79.49	79.75	80.36	.....	81.43	81.77	.....
15	78.35	h78.17	78.32	78.89	79.34	79.48	79.82	80.36	.....	81.45	81.80	.....
16	78.31	78.22	78.31	78.94	79.41	79.50	79.83	.....	.....	81.45	81.79	.....
17	78.33	78.25	78.36	78.96	79.49	79.50	79.84	.....	.....	81.46	81.84	.....
18	78.25	78.24	78.39	78.96	.....	79.50	79.82	.....	.....	81.48	81.84	.....
19	78.31	78.28	78.38	79.00	.....	79.51	79.87	.....	h81.15	81.48	.....	h81.92
20	78.26	.....	.....	79.03	.....	79.49	79.87	.....	81.20	81.50	.....	81.89

14.25.25.221--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	78.26	.....	h78.44	79.09	.....	79.53	79.87	.....	81.20	81.51	h81.85	81.90
22	78.27	.....	.....	79.11	.....	79.54	79.90	h80.49	81.24	81.54	81.90	81.89
23	78.25	.....	.....	79.10	h79.41	79.53	79.91	80.53	.....	81.55	81.94	81.89
24	78.22	.....	.....	79.11	79.43	79.55	79.92	80.55	.....	81.56	81.94	81.94
25	78.17	78.24	.....	79.13	79.42	79.56	79.93	80.57	.....	81.58	81.94	81.90
26	78.25	78.28	.....	.....	79.43	79.59	79.99	80.60	h81.22	81.59	.....	.....
27	78.25	78.28	.....	.....	79.45	79.60	79.99	80.62	81.24	81.59	.....	.....
28	78.18	78.28	h78.43	h79.16	.....	79.63	79.99	80.65	81.24	81.63	h81.87	.....
29	78.17	78.29	78.52	79.20	.....	79.65	80.00	80.63	81.28	81.60	81.95	.....
30	78.19		78.54	79.21	.....	79.65	80.04	80.65	81.28	81.60	81.92	.....
31	78.17		78.56		.....		80.06	80.67		81.62		.....

h Tape measurement.

14.26.7.443. O. T. Kunkel. Drilled domestic water-table well in valley fill, diameter 6 inches, depth 120 feet. Highest water level 23.69 below lsd, Mar. 8, 1927; lowest 56.20 below lsd, May 19, 1945. Records available: 1927, 1932, 1935-52. Jan. 21, 37.98; Mar. 13, 44.90, pumped recently; May 14, 38.29, pumped recently; July 10, 34.58, pumped recently; Sept. 4, 38.79; Nov. 10, 44.45, pumped recently.

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: 1940-52. Jan. 18, 16.69; Mar. 13, 18.00; May 15, 18.73; July 10, 18.86; Sept. 4, 35.47, pumping; Nov. 10, 17.98.

14.26.15.322. F. H. Evans. Drilled unused water-table well in valley fill, diameter 6 inches, depth 34 feet. Highest water level 2.68 below lsd, Oct. 16, 1941; lowest 15.35 below lsd, Sept. 11, 1947. Records available: 1941-52. Jan. 18, 12.61. 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.

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 50.76 below lsd, Sept. 4, 1952. Records available: 1938-52. Jan. 18, 40.33; Mar. 13, 40.60; May 16, 48.89; July 10, 49.13; Sept. 4, 50.76; Nov. 10, 44.25.

14.26.19.444a. E. E. Lane. Drilled domestic water-table well in valley fill, diameter 16 inches, depth 109 feet. Highest water level 88.74 below lsd, Mar. 14, 1949; lowest 100.77 below lsd, Nov. 10, 1952. Records available: 1949-52. Jan. 16, 95.84; Mar. 13, 96.43; May 15, 98.40; July 10, 99.46; Sept. 4, 100.52; Nov. 10, 100.77.

14.26.32.331. F. B. Chambers. Drilled unused water-table well in valley fill, diameter 6 inches, depth 104 feet. Highest water level 32.14 below lsd, Nov. 12, 1941; lowest 72.10 below lsd, Nov. 10, 1952. Records available: 1927, 1937-52. Jan. 16, 70.01; Mar. 13, 70.65; May 15, 70.99; July 11, 71.34; Sept. 4, 71.92; Nov. 10, 72.10.

14.26.35.344. J. Q. Mitchell. Drilled unused water-table well in valley fill, depth 150 feet. Highest water level 65.68 below lsd, Jan. 22, 1943; lowest 81.53 below lsd, July 14, 1950. Records available: 1939-52. Jan. 16, 72.46; Mar. 13, 72.62; May 15, 72.91; July 11, 73.17; Sept. 4, 74.14; Nov. 11, dry. Measurement discontinued.

14.26.35.344a. J. Q. Mitchell. Drilled stock and domestic water-table well in valley fill, diameter 6 inches. Records available: 1952. Nov. 11, 73.63.

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 57.99 below lsd, Sept. 11, 1951. Records available: 1940-52. Jan. 15, 53.35; Mar. 14, 55.57, pumping; May 15, 56.44; July 11, 58.78, pumping; Sept. 4, 60.94, pumping; Nov. 11, 57.48.

15.25.35.111. Mrs. 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 34.75 below lsd, July 11, 1952. Records available: 1938-52. Jan. 15, 32.56; Mar. 14, 33.94; May 15, 34.60; July 11, 34.75; Sept. 4, 38.20, pumping; Nov. 11, 37.22, pumping.

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 59.33 below lsd, Sept. 4, 1952. Records available: 1939-52. Jan. 16, 47.02; Mar. 13, 49.08; May 15, 50.71; July 11, 50.74; Sept. 4, 59.33; Nov. 11, 49.80.

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 42.52 below lsd, Nov. 11, 1952. Records available: 1951-52. Jan. 15, 40.54; Mar. 13, 40.81; May 15, 41.30; July 11, 41.49; Sept. 4, 42.05; Nov. 11, 42.52.

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.

Carlsbad area. --The land in La Huerta and vicinity north of Carlsbad, the land mostly west of the Pecos River southward from Carlsbad to the vicinity of Black River, and the Black River valley southwestward to the New Mexico-Texas state line comprise the Carlsbad ground-water basin. Originally the basin, as declared by the State Engineer on Oct. 16, 1947, contained approximately 490 square miles. The Black River valley extension, declared on Oct. 21, 1952, increased the area of the basin to about 635 square miles.

Of the estimated 32,500 acres of irrigated land in the Carlsbad basin, about 23,500 acres are in the Carlsbad Irrigation District. Water diverted from the Pecos River at Lake Avalon through the East Canal, which borders La Huerta on the north, and the Southern Canal, which extends southward from Carlsbad to the vicinity of Black River, is used for irrigation of district lands. Some water is also diverted from Black River for use in the district. In recent years, however, numerous privately owned wells have been drilled on lands in the district to supplement the surface-water supply. In addition, west of the Southern Canal and north of the East Canal in the basin, an estimated 3,600 acres are irrigated entirely from wells. In the Black River valley south and west of the Carlsbad Irrigation District about 1,600 acres are irrigated by water diverted from Black River, Blue Springs,and Rattlesnake Springs and about 700 acres are irrigated by water from wells. The principal aquifers in the basin are: the Carlsbad limestone to the west and north of Carlsbad and in Carlsbad; and the alluvium in the remainder of the area and to the north of Carlsbad.

The amount of ground water pumped in the Carlsbad Irrigation District depends to a considerable extent on the amount of surface water available and pumpage for the entire irrigated area depends on the frequency and intensity of rainfall during the growing season and to some extent on other climatic conditions. Precipitation at Carlsbad in 1952 was about 7.1 inches which, as in 1951, was considerably below the normal of 13.3 inches. Only during the latter part of June and the early part of July did heavy rains occur. The rains were not sufficient, however, to cause canyons to the west to flood and provide water to recharge the alluvium.

The deficiency of surface water for use in the Carlsbad Irrigation District and precipitation in 1952 resulted in continued large withdrawals of ground water for irrigation use. Withdrawal of water by the wells and the discharge of water through the springs cause a decline in storage in the ground-water reservoir. Also return of water applied to the irrigated lands, precipitation, and flood runoff from canyons provided less than normal recharge to the ground water in storage. The net yearly change in ground-water storage in the Carlsbad area in 1952 was observed by measuring water levels in January 1952 in 73 wells and comparing them with measurements made January 1953. These measurements are not included in this volume, but were used to prepare the map showing the change in water levels from January 1952 to January 1953. Bimonthly measurements of water levels were made in 19 wells, including well 22.26.24.224 equipped with a recording gage. Records of water levels in the Carlsbad area were first published in this series in 1947.

About 71,350 acre-feet of water was diverted from Lake Avalon for use in the district in 1952 about the same as that diverted in 1951. Assuming that 50 percent of the water was applied to the land, that the required amount of water was 3 acre-feet per acre, then the apparent deficiency of surface water for the estimated acreage in the district north of Black River of 20,000 acres, was roughly 24,000 acre-feet. This deficiency was made up by water from wells finished mostly in the alluvium. As a result of large withdrawals of ground water in the area south of Carlsbad and east of the Southern Canal, water levels lowered somewhat more than 12 feet under an area of 3 square miles, 6 feet under an area of about 22 square miles, and more than 2 feet under an area of approximately 50 square miles from January 1952 to January 1953. The areas of like decline were greater in 1952 than in 1951.

The largest observed decline in water level occurred in the alluvium in a small area south of Carlsbad and west of the Southern Canal where approximately 2,700 acres of land are irrigated entirely from wells. Pumpage from the irrigation wells in this locality and from wells supplying water to the Thayer apartments, the site of the former air base southwest of Carlsbad, is estimated to have been about 11,000 acre-feet in 1952. Near the center of pumping in this locality the water level declined about 21 feet under an area of 1.6 miles from January 1952 to January 1953. During 1951, the water level declined about 22 feet in approximately the same area. (See fig. 46.)

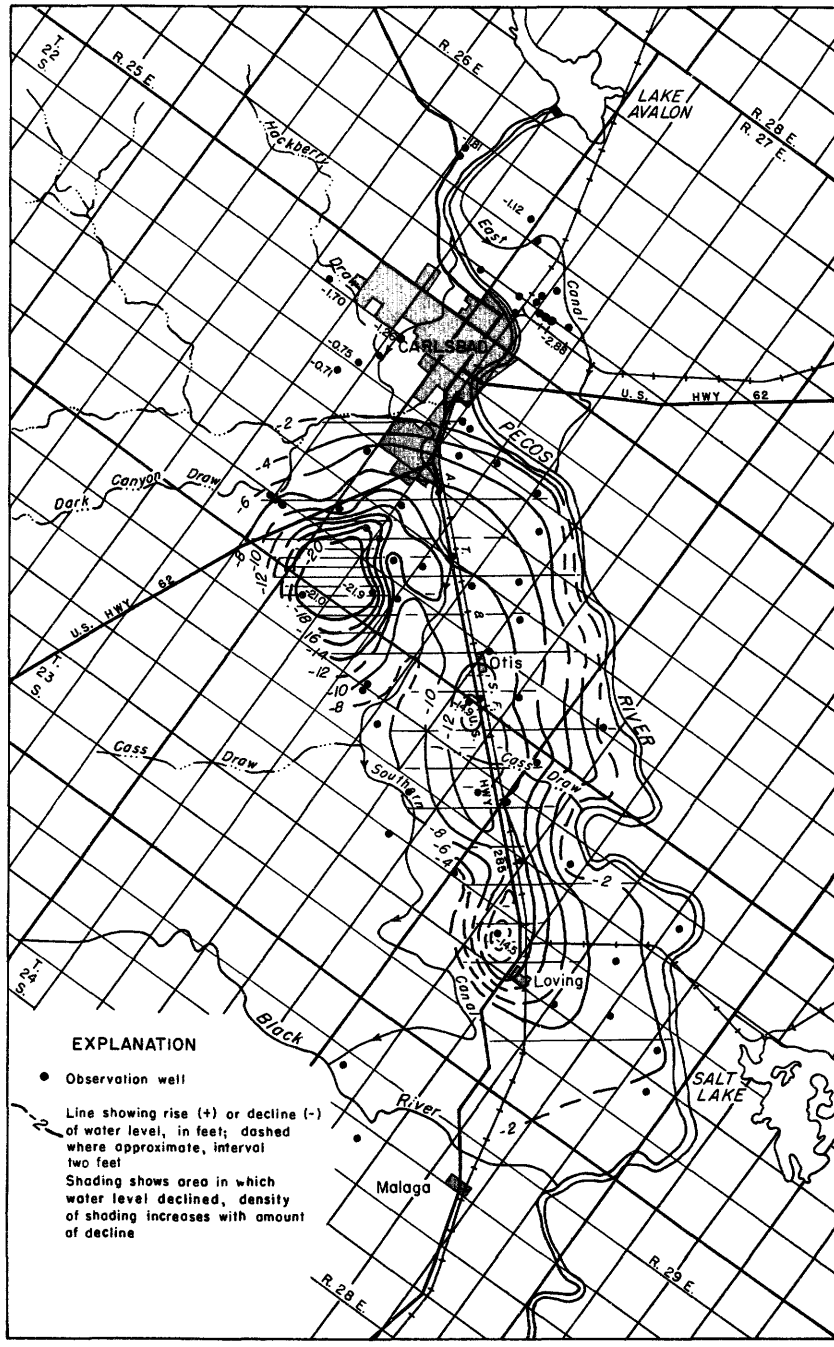


Figure 46. --Change in ground-water level from January 1952 to January 1953 in Carlsbad area, Eddy County, N. Mex.

It is estimated that withdrawals of water by wells from the Carlsbad limestone in the vicinity of Carlsbad amounted to 10,000 acre-feet in 1952. Declines in water level ranging from 0.7 foot to somewhat less than 3 feet were observed from January 1952 to January 1953 in this particular locality. The lowering of water levels in the various areas was probably in part natural, due to decreased recharge, but in the areas where a large decline of water level was observed, the decline was largely the result of pumping of wells.

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. In intake area of artesian aquifer. Highest water level 211.87 below lsd, Mar. 25, 1945; lowest 232.12 below lsd, Sept. 6, 1952. Records available: 1940-52. Jan. 12, 227.92; Mar. 17, 228.58; May 19 229.49; July 12, 230.79; Sept. 6, 232.12.

16.25.1.344. 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: 1938-52. Jan. 14, 21.14; Mar. 17, 33.43; May 15, 29.39, pumped recently; July 11, 42.17, pumped recently; Sept. 5, 53.30, pumped recently; Nov. 11, 32.12.

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 9.84 below lsd, Apr. 14, 1942; lowest 15.97 below lsd, Dec. 6, 1943. Records available: 1937-52. Jan. 14, 11.09; Mar. 14, 10.38; May 15, 10.73; July 11, 11.17; Sept. 4, 12.98; Nov. 11, 12.11.

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 29.77 below lsd, Oct. 7, 1952. Records available: 1937-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.61	28.56	28.44	28.57	28.60	.....	29.16	29.43	29.58	29.68	.....	29.35
2	28.72	28.42	28.41	28.56	28.62	h28.68	29.16	29.39	29.65	29.68	.....	29.26
3	28.85	28.42	28.47	28.53	28.65	28.68	29.16	29.39	29.68	29.70	.....	29.26
4	h28.74	28.66	28.64	28.56	28.64	28.68	29.26	29.39	29.68	29.64	.....	29.30
5	28.72	28.63	28.66	28.71	28.58	28.68	.....	29.45	29.68	29.64	.....	29.41
6	28.77	28.70	28.68	28.64	28.54	28.70	.....	29.47	29.70	29.68	.....	29.24
7	28.59	28.65	28.66	28.53	28.54	28.70	h29.24	29.43	29.72	29.77	.....	29.24
8	28.58	28.62	28.52	28.46	28.54	28.71	29.31	29.42	29.70	29.67	.....	29.24
9	28.59	28.62	28.38	28.49	28.53	28.73	29.26	29.43	29.69	.....	.....	29.24
10	28.81	28.60	28.38	28.66	28.61	28.76	29.20	29.48	29.66	29.63	.....	29.40
11	h28.65	28.56	28.46	28.45	28.67	28.76	29.20	29.47	29.66	29.63	29.51	29.34
12	28.65	28.47	28.46	28.45	28.65	28.76	29.20	29.48	.....	29.59	29.42	29.34
13	28.53	28.47	28.54	28.60	28.61	28.77	29.25	29.55	.....	29.57	29.34	.....
14	h28.54	28.54	28.54	28.66	28.55	28.83	29.26	29.55	.....	29.57	29.34	.....
15	28.59	28.64	28.67	28.60	28.52	28.86	29.23	29.57	.....	29.66	29.33	.....
16	28.62	28.64	28.51	28.60	28.53	28.85	29.21	29.51	.....	29.60	29.28	.....
17	28.62	28.58	28.44	28.63	28.55	28.92	29.20	29.51	.....	29.59	29.30	.....
18	28.57	28.53	28.47	28.62	28.74	28.96	29.21	29.55	.....	29.65	29.42	.....
19	28.57	28.54	28.58	28.49	28.76	28.95	29.26	29.53	h29.68	29.67	29.54	h29.20
20	28.56	28.68	28.49	28.46	28.61	28.90	29.23	29.53	29.68	29.62	.....	29.24
21	28.47	28.60	28.49	28.48	28.55	28.90	29.23	29.53	29.73	29.59	29.33	29.15
22	28.50	28.60	28.65	28.58	28.58	28.91	29.24	29.57	29.78	29.59	29.33	29.15
23	28.65	.....	28.62	28.67	28.61	28.96	29.30	29.63	29.78	29.63	29.43	29.17
24	28.59	.....	28.52	28.66	28.66	28.97	29.37	29.61	29.77	29.60	29.29	29.17
25	28.50	h28.84	28.52	28.66	28.76	28.97	29.37	29.61	29.75	29.57	29.28	29.32
26	28.53	28.78	28.60	.....	28.74	29.02	29.37	29.62	29.70	29.57	29.42	29.31
27	28.61	28.61	28.68	.....	28.68	29.06	29.40	29.62	29.66	.....	29.48	.....
28	28.74	28.51	28.62	h28.50	28.68	29.11	29.37	29.62	29.63	.....	29.42	.....
29	28.62	28.51	28.56	28.54	28.77	29.18	29.37	29.61	29.63	.....	29.42	.....
30	28.61		28.56	28.58	28.66	29.17	29.37	29.58	29.67	.....	29.37	.....
31	28.56		28.57		28.66		29.40	29.58		h29.53		.....

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 68.23 below lsd, Sept. 13, 1952. Records available: 1951-52.

16.25.11.113--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.53	43.44	46.62	52.23	55.23	51.68	57.97	62.39	67.20	64.44	57.23	50.38
2	41.53	43.83	46.37	52.58	55.03	51.77	57.88	62.53	67.46	64.23	57.00	50.21
3	41.39	44.12	46.27	52.87	54.97	51.86	57.90	62.73	67.56	63.97	56.72	49.95
4	41.24	44.58	46.37	53.42	54.71	51.95	58.33	62.98	67.72	63.72	56.27	49.74
5	41.20	44.86	46.63	53.84	54.35	52.07	58.64	63.17	67.78	63.35	56.04	49.43
6	41.19	45.38	46.87	53.99	54.02	52.21	58.69	63.15	67.85	63.03	55.77	49.18
7	41.05	45.78	46.98	54.04	53.90	52.38	58.67	63.18	67.96	62.62	55.42	48.99
8	41.00	46.07	47.18	54.11	53.78	52.54	58.63	63.26	68.03	62.23	e55.12	48.89
9	40.98	46.39	47.27	54.39	53.68	52.63	58.43	63.42	68.08	62.01	e54.84	48.87
10	40.85	46.42	47.32	54.73	53.68	52.84	58.33	63.39	68.11	61.85	e54.58	48.78
11	40.72	46.33	47.17	54.71	53.35	53.13	58.34	63.39	68.15	61.75	54.38	48.66
12	40.64	46.34	47.07	54.57	53.25	53.42	58.45	63.48	68.16	61.52	54.07	48.47
13	40.52	46.38	46.97	54.72	53.12	53.90	58.52	63.59	68.23	61.25	53.87	48.36
14	40.49	46.60	46.97	54.69	53.08	54.33	58.46	63.98	67.92	61.18	53.62	48.27
15	40.45	46.95	47.14	54.79	52.98	54.71	58.48	64.25	67.65	60.89	53.42	48.03
16	40.44	47.13	47.06	54.88	52.92	54.90	58.67	64.53	67.39	60.64	53.15	47.85
17	40.45	47.17	47.04	54.94	52.88	55.23	58.87	64.80	67.21	60.52	53.02	47.68
18	40.48	47.19	47.22	54.89	52.70	55.56	59.07	65.05	67.04	60.40	52.88	47.54
19	40.49	47.33	47.68	54.82	52.37	55.91	59.32	65.29	66.92	60.15	52.70	47.42
20	40.59	47.67	48.27	54.79	52.09	56.27	59.53	65.50	66.86	60.00	52.47	47.25
21	40.62	47.84	48.77	54.81	51.89	56.62	59.73	65.72	66.75	59.88	52.34	47.13
22	40.76	47.87	49.41	54.92	51.81	56.85	59.98	65.95	66.54	59.71	52.23	47.02
23	41.13	47.78	49.80	55.00	51.68	56.98	60.32	66.17	66.19	59.54	51.95	46.93
24	41.42	47.79	50.19	55.12	51.68	57.29	60.59	66.36	65.97	59.33	51.75	46.92
25	41.68	47.57	50.65	55.22	51.63	57.66	60.78	66.47	65.77	59.08	51.72	46.82
26	42.07	47.29	50.79	55.30	51.63	58.03	61.03	66.60	65.56	58.71	51.52	46.70
27	42.46	47.13	51.21	55.41	51.68	58.33	61.28	66.75	65.32	58.53	51.24	46.58
28	42.63	46.92	51.25	55.60	51.57	58.62	61.44	66.90	65.08	58.28	50.97	46.43
29	42.80	46.83	51.48	55.57	51.47	58.39	61.53	67.03	64.83	57.96	50.79	46.35
30	42.96		51.88	55.37	51.47	58.08	61.82	67.13	64.63	57.67	50.52	46.30
31	43.17		52.03		51.55		62.15	67.15		57.45		46.19

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 48.14 below lsd, May 16, 1952. Records available: 1951-52. Jan. 11, 24.30; Mar. 14, 50.61, nearby well being pumped; May 16, 48.14; Sept. 5, 65.52, nearby well being pumped; Nov. 11, 39.52.

16.26.28.333. H. L. Williams. Drilled unused water-table well in valley fill, diameter 6 inches, reported depth 87 feet. Highest water level 8.17 below lsd, Mar. 13, 1942; lowest dry at 40.4, Sept. 11, 1951. Records available: 1938-52. Jan. 11, 36.19; Mar. 14, 38.23; May 16, 39.90; July 11, dry at 40.40; Sept. 5, dry at 40.32.

17.25.35.411. Ed. Kissinger Estate. Drilled unused water-table well in valley fill, diameter 8 inches. Highest water level 107.95 below lsd, Jan. 28, 1943; lowest 140.16 below lsd, May 14, 1951. Records available: 1938-52. Jan. 8, dry at 135.78. Measurement discontinued.

17.26.7.344. W. F. Culbertson. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 129 feet. Highest water level 31.53 below lsd, Jan. 14, 1942; lowest 82.26 below lsd, Sept. 6, 1952. Records available: 1940-52. Jan. 10, 70.86; Mar. 14, 73.33; May 19, 77.26; July 12, 78.86; Sept. 6, 82.26; Nov. 12, 79.52.

17.26.10.333. Roy Ingram. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 247 feet. Highest water level 4.60 below lsd, Jan. 14, 1942; lowest 57.91 below lsd, Mar. 17, 1952. Records available: 1939-52. Jan. 9, 19.05; Mar. 17, 57.91; May 20, 28.86; Nov. 13, 23.15.

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 66.05 below lsd, Sept. 6, 1952. Records available: 1937-52. Jan. 9, 33.47; Mar. 14, 49.33; May 20, 47.54; July 15, 53.35, pumping; Sept. 6, 66.05; Nov. 12, 41.28.

17.26.24.333a. Mary E. Yates. Dug observation well, diameter 4 inches, galvanized casing. Highest water level 2.67 below lsd, Mar. 17, 1952; lowest 6.16 below lsd, Sept. 6, 1952. Records available: 1951-52.

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 13, 1951	5.78	Jan. 9, 1952	3.80	May 20, 1952	3.24	Sept. 6, 1952	6.16
Nov. 15	4.76	Mar. 17	2.67	July 16	4.64	Nov. 13	4.45

18.23.5.333. Joe Clements. Drilled stock water-table well in limestone member of San Andres formation, diameter 6 inches, depth 420 feet. In intake area of artesian aquifer. Highest water level 385.50 below lsd, July 21, 1945; lowest 424.76 below lsd, Sept. 6, 1952. Records available: 1945-52. Jan. 12, 422.11; Mar. 17, 421.73; May 19, 422.43, pumped recently; July 12, 423.32, pumped recently; Sept. 6, 424.76; Nov. 12, 423.83.

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 154.31 below lsd, Sept. 5, 1952. Records available: 1942-52. Jan. 8, 128.17; Mar. 14, 144.36; May 16, 144.14; July 15, 146.91; Sept. 5, 154.31; Nov. 12, 145.26.

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 59.53 below lsd, Sept. 5, 1952. Records available: 1937-52. Jan. 9, 37.40; Mar. 14, 41.76; May 16, 46.93; July 15, 49.13; Sept. 5, 59.53; Nov. 12, 47.10, 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 103.28 below lsd, Sept. 6, 1952. Records available: 1931-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.71	.....	44.57	71.28	58.89	57.37	.....	92.18	99.32	68.05	53.68	42.35
2	31.16	.....	43.90	72.62	58.89	56.12	.....	93.21	101.15	67.27	52.88	42.19
3	31.16	43.33	43.39	72.77	59.58	57.95	.....	92.98	101.81	65.94	52.17	42.29
4	30.84	42.79	44.65	73.87	e56.85	59.45	78.75	93.46	101.51	64.38	51.38	42.50
5	30.88	45.63	45.33	74.02	e56.00	60.48	79.13	95.88	102.30	63.04	50.89	42.78
6	30.58	46.36	45.88	71.56	e56.20	62.47	78.61	95.76	103.28	62.67	50.69	42.79
7	30.20	.....	46.71	70.10	55.35	64.20	77.17	95.79	103.00	61.56	50.40	42.64
8	30.10	.....	47.50	70.48	e56.05	62.92	70.18	97.45	102.45	60.79	50.04	42.53
9	30.44	.....	46.60	70.39	55.44	62.85	67.56	97.83	102.87	60.37	48.97	43.05
10	30.68	47.12	45.77	70.43	55.93	64.99	66.30	93.61	102.12	60.32	48.58	43.31
11	30.88	45.68	48.43	64.28	54.27	67.14	66.81	93.36	100.93	59.70	48.50	43.13
12	31.28	45.84	49.93	62.97	52.80	67.77	67.43	95.80	100.32	58.94	48.02	43.78
13	31.40	46.90	.....	63.62	53.25	.....	65.70	96.05	99.02	58.86	47.53	43.68
14	31.24	47.73	.....	63.02	53.80	.....	65.20	97.03	94.76	58.70	47.22	43.42
15	31.52	47.24	54.99	64.05	e54.00	.....	66.49	96.98	93.20	57.92	46.63	43.09
16	31.83	46.79	54.65	64.54	53.28	.....	67.37	97.83	92.61	57.17	45.93	43.80
17	32.39	46.37	54.75	63.89	52.73	.....	68.39	97.71	91.39	57.23	45.51	44.33
18	32.84	45.44	54.63	62.84	49.88	.....	69.30	97.87	90.23	57.47	45.58	45.48
19	33.38	46.60	57.21	61.83	49.67	.....	72.07	99.76	88.67	56.68	45.40	45.73
20	33.88	47.75	58.78	59.23	48.83	.....	71.95	99.03	86.77	56.08	45.61	46.13
21	33.63	47.88	61.56	58.28	48.69	.....	73.10	100.15	83.85	56.24	45.68	45.95
22	34.94	47.89	61.84	58.87	49.17	.....	77.41	99.42	79.79	56.25	45.63	45.35
23	36.58	47.90	61.30	59.43	50.97	.....	79.38	99.97	77.57	55.84	44.82	46.20
24	37.58	46.67	61.92	59.14	.....	.....	82.01	99.06	76.39	55.68	44.35	45.88
25	38.43	43.65	64.90	58.68	.....	.....	83.99	98.64	75.23	55.17	44.19	44.48
26	39.04	42.67	66.16	59.64	.....	.....	86.69	100.03	74.28	54.32	44.31	44.28
27	39.43	44.24	65.11	57.13	.....	.....	87.38	100.75	73.28	54.00	43.78	44.88
28	38.77	44.50	64.23	56.18	55.79	.....	87.41	101.52	70.68	54.26	43.38	45.21
29	.....	44.77	67.03	58.23	e56.90	.....	89.65	102.18	69.78	53.80	43.12	44.74
30	.....		68.05	58.57	57.34	.....	90.72	101.15	69.12	53.68	42.68	45.36
31	.....		69.04		57.42		91.64	99.25		53.85		45.75

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 77.59 below lsd, Oct. 6-12, 1952. Records available: 1937-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	66.54	65.98	h68.57	71.93	74.44	.....	76.02	76.64	77.22	.....	77.17	75.23
2	66.53	65.93	68.58	72.08	e74.50	h75.23	76.04	76.66	77.24	.....	77.15	75.10
3	66.47	65.98	68.60	72.18	74.56	75.25	76.06	76.69	77.24	h77.58	77.09	74.99
4	66.38	66.12	68.64	72.32	74.61	75.27	76.08	76.71	77.26	77.58	77.06	74.89
5	66.36	66.14	68.67	72.47	74.65	75.30	76.10	76.73	77.26	77.58	77.03	74.75
6	66.28	66.20	68.71	72.58	74.71	75.33	.....	76.75	77.26	77.59	76.99	74.64
7	66.15	66.33	68.76	72.68	74.75	75.36	h76.17	76.77	77.27	77.59	76.91	74.54
8	h66.10	66.39	68.83	72.77	74.79	75.38	76.17	76.79	77.28	77.59	76.87	74.48
9	66.10	66.54	.....	72.88	74.82	75.41	76.20	76.82	77.29	77.59	76.83	74.42
10	66.04	66.62	.....	72.99	74.89	75.43	76.22	76.83	77.31	77.59	76.78	74.32
11	65.96	66.72	.....	73.06	74.91	75.46	76.24	76.85	77.32	77.59	76.73	74.27
12	65.93	66.82	.....	73.14	74.95	75.48	76.25	76.88	77.33	77.59	76.68	.....
13	65.85	66.92	.....	.....	74.99	75.51	76.27	76.91	.....	77.58	76.65	.....
14	65.84	67.03	h69.65	.....	75.02	75.55	76.28	76.91	.....	77.58	76.60	.....
15	65.83	h67.17	69.72	.....	75.06	75.58	76.31	76.92	.....	77.57	76.55	.....
16	65.79	67.38	69.84	.....	75.10	75.61	76.31	76.95	.....	77.55	76.50	.....
17	65.81	67.45	69.92	.....	75.16	75.63	76.32	76.97	h77.43	77.54	76.42	.....
18	65.76	67.52	70.05	h73.72	75.16	75.66	76.34	76.99	.....	77.53	76.35	.....
19	65.75	67.59	70.14	73.74	75.11	75.69	76.35	77.01	.....	77.51	76.28	73.90
20	65.70	67.72	70.21	73.80	75.04	75.72	76.36	77.03	.....	77.50	76.20	73.82
21	65.65	67.84	70.29	73.88	74.99	75.74	76.38	77.04	.....	77.48	76.15	73.78
22	65.65	67.90	70.50	73.94	74.98	75.78	76.44	77.04	.....	77.46	76.11	73.73
23	65.71	.....	70.63	74.00	74.98	75.81	76.46	77.05	.....	77.45	76.05	73.68
24	65.64	.....	70.74	74.06	74.99	75.84	76.47	77.07	.....	77.40	75.99	73.68
25	65.63	h68.39	70.89	74.12	74.98	75.86	76.49	77.08	.....	77.38	75.95	73.67
26	65.66	68.41	71.06	74.17	74.98	75.89	76.50	77.09	.....	77.36	.....	73.63
27	65.68	68.44	71.24	74.23	74.99	75.92	76.53	77.11	.....	77.34	.....	.....
28	65.71	68.46	71.38	74.28	75.02	75.94	76.54	77.13	.....	77.30	75.63	.....
29	65.72	68.50	71.53	74.33	75.05	75.96	76.57	77.14	.....	77.27	75.51	.....
30	65.72		71.66	74.39	75.10	75.99	76.59	77.19	.....	77.24	75.37	.....
31	65.79		71.80		75.14		76.61	77.21		77.21		.....

e Estimated.
h Tape measurement.

18.26.24.223a. R. G. Goodwin. 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 11.39 below lsd, Sept. 6, 1952. Records available: 1947-52. Jan. 8, 7.08; Mar. 18, 33.85, pumping; May 20, 7.69; July 16, 8.50; Sept. 6, 11.39; Nov. 13, 10.30.

18.26.28.121a. Town of Dayton. Drilled observation water-table well in valley fill, about 25 feet east of 18.26.28.121, diameter 8 inches, depth 250 feet, cased to 182, casing slotted from 92-182. Highest water level 59.79 below lsd, Feb. 5, 1952; lowest 68.27 below lsd, Oct. 31, Nov. 5, 1952. Records available: 1951-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	60.66	59.82	60.36	61.39	62.74	63.28	64.17	65.10	66.39	67.68	68.25	67.93
5	60.59	59.79	60.49	61.62	62.84	63.36	64.31	65.27	66.59	67.80	68.27	67.80
10	60.38	59.86	60.56	61.87	62.99	63.49	64.48	65.45	66.80	67.97	68.25	67.69
15	60.27	60.07	60.65	62.14	63.04	63.64	64.62	65.67	67.01	68.08	68.19	67.57
20	60.10	60.22	60.79	62.35	63.10	63.79	64.72	65.89	67.24	68.19	68.11	67.45
25	59.99	60.41	61.02	62.60	63.17	63.96	64.87	66.11	67.46	68.25	68.06	67.33
30	59.87		61.27	62.71	63.25	64.15	65.03	66.31	67.64	68.25	67.91	67.21

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. In intake area of artesian aquifer. Highest water level 368.75 below lsd, Oct. 19, 1943; lowest 380.40 below lsd, July 13, 1949. Records available: 1940-52. Jan. 12, 376.84, pumped recently; May 19, 378.72; Sept. 6, 378.42.

19.26.12.322. Forrest Lee. Drilled irrigation water-table well. Records available: 1952. July 16, 36.46; Nov. 13, 39.03.

19.26.12.323c. Forrest Lee. Drilled unused water-table well in valley fill, diameter 6 inches, depth 36 feet. Highest water level 24.04 below lsd, Jan. 7, 1950; lowest dry at 35.68, July 16, 1952. Records available: 1949-52. Jan. 7, 31.35; Mar. 18, 34.38; July 16, dry at 35.68.

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 11.91 below lsd, July 16, 1952; lowest 14.70 below lsd, Nov. 13, 1952. Records available: 1952. Mar. 18, 12.83; May 20, 12.02; July 16, 11.91; Sept. 6, 12.74; Nov. 13, 14.70.

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 40.82 below lsd, July 16, 1952. Records available: 1945-46, 1948-52. Jan. 7, 28.44; Mar. 18, 42.85, nearby well being pumped; May 20, 37.09; July 16, 40.82; Sept. 6, 52.36, nearby well being pumped; Nov. 13, 37.56.

19.26.27.233. 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 74.70 below lsd, May 14, 1951. Records available: 1937-39, 1941-52. Jan. 7, 63.13, pumped recently; Mar. 18, 74.16, pumping; May 20, 72.62, pumping; July 16, 68.58, pumped recently; Sept. 6, 74.88, pumped recently; Nov. 13, 74.88, pumping.

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 80.28 below lsd, Sept. 6, 1952. Records available: 1937-52. Jan. 7, 59.72; Mar. 18, 67.10; July 16, 69.13; Sept. 6, 80.28; Nov. 13, 68.50.

Carlsbad Area

21.27.19.334. F. R. Dickson. Drilled irrigation artesian (?) well in Carlsbad limestone, 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 32.03 below lsd, Dec. 3, 1952. Records available: 1946-52. Jan. 11, 30.23; Mar. 18, 30.58; May 22, 30.90; July 18, 31.08; Dec. 3, 32.03.

21.27.30.442. T. Ives. Drilled domestic and irrigation artesian (?) well in Carlsbad limestone, diameter 7 inches, reported depth 256 feet. Highest water level 7.80 below lsd, Sept. 21, 1949; lowest 14.00 below lsd, July 18, 1952. Records available: 1947-52. Jan. 12, 13.44; Mar. 18, 13.80; May 22, 13.82; July 18, 14.00; Sept. 11, 13.78; Dec. 3, 14.16, pumped recently.

21.27.32.112. L. E. Loman. Drilled domestic and irrigation artesian well in Carlsbad limestone, 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 9.67 below lsd, Dec. 3, 1952. Records available: 1947-52. Jan. 12, 7.87, pumped recently; Mar. 18, 8.10; May 22, 8.40; July 18, 8.58; Dec. 3, 9.67.

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: 1950-52. Jan. 12, 13.67; Mar. 18, 14.13; May 22, 14.20; July 18, 14.28; Sept. 11, 14.15; Dec. 3, 14.43.

22.26.3.344. I. O. Harris. Formerly O. G. Willis. Drilled irrigation artesian (?) well in Carlsbad limestone, 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 78.50 below lsd, Dec. 3, 1952. Records available: 1948-52. Jan. 12, 76.83; Mar. 18, 77.37; May 20, 75.93; July 16, 77.19; Sept. 12, 76.87; Dec. 3, 78.50.

22.26.14.213. H. E. Stevenson. Drilled irrigation artesian (?) well in Carlsbad (?) limestone and Rustler(?) limestone reported depth 200 feet. Land-surface datum is 3,180 feet above msl. Highest water level 63.87 below lsd, Jan. 17, 1950; lowest 70.77 below lsd, Dec. 3, 1952. Records available: 1947-52. Jan. 20, 68.74, pumped recently; Mar. 18, 68.96; May 21, 69.05; July 16, 69.48; Dec. 3, 70.77.

22.26.24.224. D. N. Vest. Drilled unused water-table well in alluvium, diameter 11 inches, depth 200 feet. Highest water level 72.42 below lsd, Oct. 21, 1950; lowest 98.82 below lsd, July 8, 1952. Records available: 1948-52.

22.26.24.224--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	92.05	92.43	92.82	94.52	95.64	96.21	98.38	97.12	97.51	95.73	96.60	97.26
2	92.17	92.33	92.88	94.59	95.67	96.13	98.46	.....	97.48	95.76	96.68	97.18
3	92.22	92.47	93.04	94.66	95.67	96.12	98.55	.....	97.33	95.67	96.90	97.20
4	e92.30	92.59	93.08	94.90	95.65	96.08	98.64	.....	97.27	95.62	96.80	97.23
5	92.32	92.56	93.16	95.08	95.62	96.05	98.67	.....	97.19	95.63	96.80	97.41
6	92.37	92.63	93.20	95.16	95.63	96.02	98.70	.....	97.17	95.76	96.84	.....
7	92.30	92.49	93.25	95.19	95.69	96.01	98.75	.....	97.03	95.76	96.84	.....
8	.....	92.52	93.18	95.23	95.73	96.05	98.82	.....	96.95	95.69	96.84	h97.56
9	e92.57	92.51	93.15	95.40	95.79	96.14	98.74	.....	96.87	95.73	96.86	97.63
10	92.61	92.53	93.28	95.47	.....	96.21	98.71	.....	96.75	95.73	96.98	97.78
11	92.52	92.55	93.30	95.37	.....	96.29	98.69	.....	96.64	95.78	96.98	97.76
12	92.43	92.53	93.41	95.49	.....	96.35	98.66	.....	96.51	95.78	96.93	97.88
13	92.26	92.57	93.40	95.56	.....	96.46	98.59	.....	96.49	95.83	96.89	97.94
14	92.24	92.67	93.51	95.46	.....	96.56	98.52	.....	96.49	95.85	96.92	98.06
15	92.22	92.72	93.56	95.37	.....	96.64	98.38	.....	96.42	96.01	96.91	98.04
16	92.07	92.67	93.48	95.35	.....	96.72	98.27	.....	96.31	95.93	96.88	98.03
17	92.11	92.65	93.51	95.38	.....	96.88	98.16	.....	96.27	95.97	97.05	98.05
18	91.97	92.62	93.67	95.41	.....	.....	98.08	.....	96.27	96.12	97.14	98.09
19	91.97	92.73	93.72	95.36	.....	97.06	97.97	.....	96.22	96.09	97.07	98.13
20	91.86	92.77	93.68	95.41	h95.91	97.11	97.80	.....	96.21	96.09	97.06	98.20
21	91.76	92.68	93.74	95.52	95.93	97.27	97.66	.....	96.21	96.10	96.99	98.16
22	91.86	92.77	93.88	95.56	96.03	97.29	97.57	97.76	96.18	96.21	97.02	98.25
23	91.91	92.77	93.86	95.58	96.07	97.32	97.49	97.80	96.10	96.26	97.10	98.22
24	91.82	92.79	93.87	95.60	96.12	97.62	97.36	97.81	96.08	96.25	96.98	98.31
25	91.85	92.97	94.00	95.61	96.10	97.64	97.24	97.83	96.02	96.31	97.01	98.36
26	91.98	92.93	94.06	95.52	96.07	97.86	97.21	97.80	95.91	96.37	97.17	98.35
27	92.15	92.85	94.22	95.47	96.12	97.99	97.15	97.78	95.82	96.44	97.19	98.33
28	92.24	92.80	94.17	95.51	96.17	98.11	97.06	97.76	95.78	96.62	97.16	98.25
29	92.21	92.82	94.24	95.61	96.10	98.25	97.04	97.68	95.81	96.53	97.18	98.22
30	92.26		94.33	95.61	96.13	98.30	97.05	97.66	95.76	96.53	97.22	98.24
31	92.38		94.41		96.16		97.12	97.55		96.57		98.20

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 195.49 below lsd, Sept. 11, 1952. Records available: 1942-52. Jan. 13, 170.52; Mar. 20, 170.11; May 21, 178.02; July 18, 188.26; Sept. 11, 195.49; Dec. 4, 181.50.

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: 1942-52. Jan. 13, 169.13; Mar. 20, 168.75; May 21, 175.97; July 18, 186.32; Sept. 11, 194.09; Dec. 4, 181.45.

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 194.90 below lsd, Sept. 11, 1952. Records available: 1942-52. Jan. 13, 169.20; Mar. 20, 168.79; May 21, 176.74; July 18, 187.63; Sept. 11, 194.90; Dec. 4, 180.80.

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 16.64 below lsd, July 18, 1952. Records available: 1947-52. Jan. 14, 11.34; Mar. 20, 13.49; May 22, 31.53, pumping; July 18, 16.64; Dec. 22, 16.51.

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 48.79 below lsd, Sept. 12, 1952. Records available: 1947-52. Jan. 14, 33.40; Mar. 20, 39.65; May 22, 56.80, pumping; July 18, 42.70; Sept. 12, 48.79; Dec. 4, 40.56.

22.27.28.133. I. L. Skeen. 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 92.53 below lsd, July 17, 1952. Records available: 1947-52. Jan. 15, 76.52; Mar. 19, 76.73; May 22, 87.00; July 17, 92.53.

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 153.77 below lsd, Sept. 11, 1952. Records available: 1944-52. Jan. 15, 127.43; Mar. 18, 129.02; May 22, 136.04; July 18, 147.65; Sept. 11, 153.77; Dec. 3, 137.85.

22.27.31.422. Lewis Allen. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 202 feet. Highest water level 112.30 below lsd, Jan. 16, 1951; lowest 168.35 below lsd, Sept. 11, 1952. Records available: 1949-52. Jan. 15, 136.02; Mar. 20, 142.94; May 22, 158.83; July 17, 166.97, nearby well being pumped; Sept. 11, 168.35; Dec. 4, 158.80.

22.27.35.433. Munoz Methola. Drilled irrigation water-table well in alluvium, diameter 16 inches, reported depth 245 feet. Land-surface datum is 3,085 feet above msl. Highest water level 20.10 below lsd, Sept. 14, 1950; lowest 45.63 below lsd, May 22, 1952. Records available: 1947-52. Jan. 14, 30.71; Mar. 19, 36.55; May 22, 45.63; July 18, 43.71; Sept. 11, 50.20, nearby well being pumped; Dec. 4, 40.54.

23.27.9.211. M. E. Sibley. Drilled irrigation water-table well in alluvium, diameter 16 inches, depth 200 feet. Highest water level 41.70 below lsd, Sept. 15, 1950; lowest 51.56 below lsd, Mar. 20, 1952. Records available: 1949-52. Jan. 20, 49.72; Mar. 20, 51.56.

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 23.89 below lsd, May 19, 1948. Records available: 1947-52. Jan. 14, 22.11; Mar. 20, 21.32; May 22, 21.83; July 18, 22.20; Sept. 11, 22.55; Dec. 4, 22.94.

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 51.93 below lsd, July 18, 1952. Records available: 1947-52. Jan. 14, 45.45; Mar. 19, 47.00; May 22, 59.45, pumping; July 18, 51.93; Sept. 11, 50.29; Dec. 4, 47.70.

Hidalgo County

Animas and Playas Valleys. --Animas and Playas Valleys are semiarid intermontane basins in the southwest corner of the State. Animas Valley is bordered on the west by the Peloncillo Range and on the east by the Animas and Pyramid ranges. A low divide between the Animas and Pyramid ranges separates Animas Valley from Playas Valley. Ground water in both the Animas and Playas Valleys is obtained from the permeable valley fill material. Recharge to the ground water is derived mainly from precipitation which falls on the drainage area of the basins. Large-scale development of ground water for irrigation in these areas was begun in 1948. To record changes in ground-water storage, water levels were measured in January in 72 wells in the Animas Valley and in 7 wells in the Playas Valley continuing a program begun in 1948. Water-level measurements were made also bimonthly in 56 wells in Animas Valley and in 6 wells in the Playas Valley. A recording gage has been maintained since November 1948 on well 25.20.34.241 near the center of the heavily pumped area in Animas Valley. Records of water levels in wells in which only January measurements were made are not included in this report.

Precipitation for 1952 at Animas, near the southern end of the irrigated area of Animas Valley, was estimated to be 10.48 inches, 0.39 inch above normal. At Hachita, which is about 30 miles northeast of the irrigated area of Playas Valley, the total precipitation was estimated to be 8.37 inches, 2.58 below normal. Most of the precipitation in Animas and Playas Valleys occurs during the growing season, however this amount is usually so small that its influence on pumpage required for irrigation of crops is not appreciable. It is estimated that about 18,000 acre-feet of water was pumped to irrigate about 10,900 acres in Animas Valley in 1952. This compares with 16,500 acre-feet and 9,000 acres in 1951. Net declines in water levels occurred throughout the Animas and Playas Valleys in 1952. The areal change in water level in Animas Valley from January 1952 to January 1953 is shown on figure 47. Water levels declined more than 1 foot under about 110 square miles, and about 2 feet under about 65 square miles. This compares with a decline of 1 foot under 110 square miles and 2 feet under 52 square miles during the preceding year. The area of greatest declines was in the southern part of T. 25 S., R. 20 W., and the northern part of T. 26 S., R. 20 W., where the maximum net decline recorded was 6.7 feet. Water levels declined more than 4 feet under an area of 18 square miles in 1952 as compared with a like decline under 9 square miles in 1951. From April 1948, when water levels in wells in the area were first measured, to January 1953, a decline of 15 feet has occurred under an area of about 11 square miles.

In Playas Valley the maximum net decline in water level, for the 7 wells that were measured, was 3.4 feet in well 30.16.29.422. Other declines ranged from 0.2 foot to 1.3 feet. A net rise in water levels in two of the wells in 1952 is the result of the previous years' measurement having been made a short time after the well had been pumped.

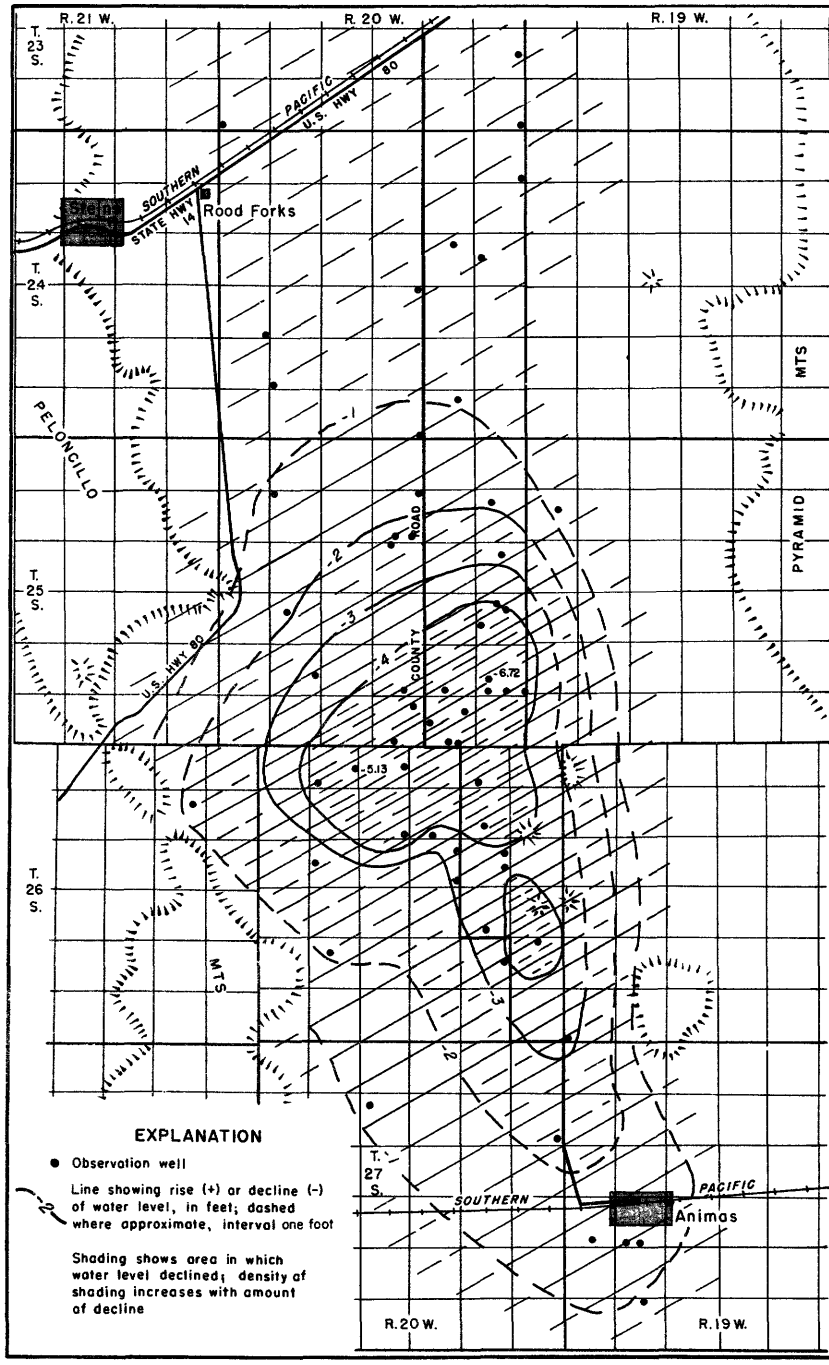


Figure 47. --Change in ground-water level from January 1952 to January 1953 in Animas Valley, Hidalgo County, N. Mex.

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 32.82 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 32.26; Mar. 27, 32.36; May 21, 32.41; July 18, 32.54; Sept. 9, 32.62; Nov. 11, 32.82.

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 38.38 below lsd, Sept. 9, 1952. Records available: 1948-52. Jan. 30, 31.69; Mar. 27, 39.9, pumping; May 21, 35.13; July 18, 46.40, pumping; Sept. 9, 38.38; Nov. 11, 35.46.

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 16.45 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 15.93; Mar. 27, 15.95; May 22, 15.92; July 18, 16.04; Sept. 9, 16.27; Nov. 11, 16.45.

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 16.68 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 16.27; Mar. 27, 16.29; May 22, 16.27; July 18, 16.34; Sept. 9, 16.52; Nov. 11, 16.68.

24.20.19.444. R. E. Macow. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 100 feet. Highest water level 33.16 below lsd, Apr. 4, 1948; lowest 39.24 below lsd, July 27, 1951. Records available: 1948-52. Jan. 28, 37.14; Mar. 29, 68.8, pumping; Sept. 10, 66.69, pumping; Nov. 12, 39.18.

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 19.75 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 19.08; Mar. 27, 19.03; May 22, 19.05; July 18, 19.34; Sept. 9, 19.61; Nov. 11, 19.75.

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 44.62 below lsd, Sept. 10, 1952. Records available: 1948-52. Jan. 28, 40.75; Sept. 10, 44.62; Nov. 12, 42.16.

25.20.10.344. J. O. and W. A. Bishop. Drilled irrigation water-table well in bolson deposits, diameter 36 inches, depth 96 feet. Land-surface datum is 4,200.09 feet above msl. Highest water level 33.14 below lsd, Apr. 1, 1948; lowest 40.49 below lsd, Sept. 26, 1951. Records available: 1948-52. Jan. 30, 39.50. 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.

24.20.34.444. 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 27.98 below lsd, Nov. 11, 1952. Records available: 1951-52. Jan. 30, 26.88; Mar. 28, 26.84; May 22, 27.05; July 18, 27.27; Sept. 9, 27.66; Nov. 11, 27.98.

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 21.33 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 20.10; Mar. 28, 20.15; May 22, 20.54; July 18, 33.7, pumping; Nov. 11, 21.33.

25.19.7.134. H. E. Baker. Drilled irrigation water-table well in bolson deposits, diameter 32 inches, depth 66 feet. Land-surface datum is 4,188.33 feet above msl. Highest water level 24.66 below lsd, Apr. 1, May 22, 1948; lowest 28.69 below lsd, Sept. 11, 1952. Records available: 1948-52. Jan. 30, 27.94; Mar. 28, 27.93; May 22, 28.22; July 18, 28.37; Sept. 11, 28.69. Measurement discontinued.

25.19.7.143. R. I. Richins and G. A. McDonald. Drilled domestic water-table well in bolson deposits, diameter 6 inches. Records available: 1952. Nov. 11, 28.73.

25.19.7.234. R. I. Richins and 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 34.22 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 29, 33.55; Mar. 28, 33.65; May 22, 33.80; July 18, 33.86; Sept. 11, 33.96; Nov. 11, 34.22.

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 61.08 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 28, 59.84; Mar. 29, 59.86; May 22, 59.99; July 18, 80.58; Sept. 10, 60.82; Nov. 12, 61.08.

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 34.82 below lsd, Sept. 9, 1952. Records available: 1948-52. Jan. 30, 32.71; Mar. 28, 32.58; May 22, 33.53; July 18, 34.07; Sept. 9, 34.82; Nov. 11, 34.65.

25.20.13.213. Geo. 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 37.69 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 34.16; Mar. 28, 33.21; May 22, 41.25, nearby well being pumped; July 18, 37.44; Nov. 11, 37.69.

25.20.13.432. Jundt & Rudiger. Dug and drilled irrigation water-table well in bolson deposits, diameter 45 to 16 inches, depth 58 feet. Land-surface datum is 4,204.72 feet above msl. Highest water level 30.68 below lsd, Apr. 1, 1948; lowest 47.32 below lsd, Sept. 11, 1952. Records available: 1948-52. Jan. 30, 39.31; Mar. 28, 39.01; May 22, 41.56; July 18, 42.34; Sept. 11, 47.32. Measurement discontinued.

25.20.15.122. Mrs. H. K. Wood. Drilled water-table well in bolson deposits, diameter 6 inches, depth 50 feet. Land-surface datum is 4,202.62 feet above msl. Highest water level 34.41 below lsd, Apr. 1, 1948; lowest 41.56 below lsd, Nov. 27, 1951. Records available: 1948-52. Jan. 30, 41.23. 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.

25.20.15.122a. 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 46.31 below lsd, Sept. 9, 1952. Records available: 1950-52. Jan. 30, 41.15; Mar. 28, 41.09; May 22, 42.51; July 18, 45.04, nearby well being pumped; Sept. 9, 46.31; Nov. 11, 44.02.

25.20.20.142. Standsberry. Dug stock water-table well in bolson deposits, depth 68 feet. Highest water level 60.09 below lsd, Apr. 6, 1948; lowest 65.90 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 28, 64.11; Mar. 29, 64.23; May 22, 64.75; July 19, 64.69; Sept. 10, 65.35; Nov. 12, 65.90.

25.20.24.124. Elmer L. Kerr. Drilled irrigation water-table well in bolson deposits, diameter 36 inches, depth 107 feet. Land-surface datum is 4,210.61 feet above msl. Highest water level 34.60 below lsd, Apr. 1, 1948; lowest dry at 50, May 22, 1952. Records available: 1948-52. Jan. 30, 44.31; Mar. 28, 44.09; May 22, dry at 50. 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.

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 65.11 below lsd, Sept. 11, 1952. Records available: 1948-52. Jan. 30, 53.09; Mar. 28, 52.50; May 22, 57.17; July 18, 59.17; Sept. 11, 65.11; Nov. 11, 58.97.

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 71.43 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 63.93; Mar. 28, 64.33; July 18, 99.45, pumping; Sept. 10, 103.2, pumping; Nov. 11, 71.43.

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 84.22 below lsd, Sept. 25, 1951. Records available: 1948-52. Jan. 30, 78.65; May 22, 103.65, pumping; July 18, 103.84, pumping; Sept. 10, 105.54, pumping; Nov. 11, 84.06.

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 68.91 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 30, 62.12; Mar. 28, 61.71; Nov. 11, 68.91.

25.20.29.424. 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 61.75 below lsd, Nov. 12, 1952. Records available: 1950-52. Jan. 28, 58.38; Mar. 29, 58.35; May 22, 59.80; Nov. 12, 61.75.

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 76.32 below lsd, Sept. 4, 1952. Records available: 1948-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	63.56	63.01	62.62	62.82	67.29	70.62	72.00	74.18	76.04	73.52	70.65	69.05
2	63.54	62.97	62.61	62.83	67.41	70.38	71.68	73.78	76.00	73.46	70.62	68.96
3	63.53	62.98	62.63	62.89	67.59	70.09	71.86	73.20	76.13	73.23	70.58	69.00
4	63.51	62.97	62.61	63.04	67.80	69.93	.....	73.04	76.32	73.06	70.45	69.05
5	63.50	62.95	62.61	63.23	68.05	69.78	.....	.....	76.00	72.97	70.40	68.84
6	63.46	62.95	62.59	63.29	68.31	70.01	.....	73.41	.....	72.86	.....	68.78
7	63.43	62.93	62.57	63.29	68.89	70.07	.....	73.32	.....	72.76	.....	68.81
8	63.41	62.94	62.53	63.52	69.22	.....	.....	73.06	76.03	72.62	.....	68.79
9	63.42	62.95	62.52	63.77	69.48	69.60	.....	72.62	75.78	72.56	70.20	68.81
10	63.38	62.91	62.51	63.81	69.61	69.54	.....	72.66	75.86	72.44	70.13	68.69
11	63.37	62.96	62.47	63.79	69.47	69.35	.....	73.22	75.85	72.34	70.07	68.66
12	63.35	62.93	62.50	64.13	69.39	69.24	.....	72.88	75.78	72.22	69.95	68.65
13	63.31	62.91	62.48	64.37	69.92	69.20	.....	72.84	75.94	72.22	69.90	68.59
14	63.31	62.89	62.55	64.45	69.95	69.41	72.32	72.92	75.96	72.07	69.78	68.56
15	63.28	62.89	.....	64.97	70.05	.....	72.34	72.97	76.00	72.00	69.74	68.51
16	63.27	62.87	.....	65.17	70.29	.....	72.48	.....	75.78	72.00	69.71	68.44
17	63.25	62.84	.....	65.53	70.24	69.86	73.02	.....	.....	71.85	69.76	68.38
18	63.21	62.81	.....	65.88	70.16	70.46	73.24	.....	.....	71.74	69.70	68.34
19	63.20	62.81	.....	65.66	70.40	70.40	73.34	.....	76.00	71.64	69.59	68.42
20	63.17	62.79	.....	65.65	70.36	71.00	73.03	74.22	76.00	71.56	69.49	68.27
21	63.16	62.77	.....	65.47	70.49	71.01	72.89	74.41	75.59	71.50	69.40	68.27
22	63.16	62.76	.....	65.53	70.58	71.80	73.39	74.69	75.51	71.40	69.42	68.22
23	63.14	62.74	62.49	65.87	70.55	71.49	74.28	75.26	75.20	71.32	69.33	68.18
24	63.11	62.73	62.47	66.17	70.84	71.64	74.08	75.33	74.92	71.23	69.30	68.24
25	63.08	62.74	62.47	66.37	70.85	.....	74.29	75.23	74.70	71.17	69.37	68.18
26	63.07	62.71	62.46	66.70	70.90	71.62	73.00	75.22	74.46	71.09	.....	68.18
27	63.07	62.69	62.55	66.71	71.01	71.61	73.10	75.21	.....	71.02	.....	68.10
28	63.05	62.67	62.54	66.55	71.15	71.36	73.91	75.12	.....	71.00	.....	67.85
29	63.03	62.65	62.69	66.72	70.95	71.42	73.95	75.37	.....	70.91	.....	67.78
30	63.01		62.81	67.00	70.97	71.68	74.16	75.45	73.68	70.81	.....	67.78
31	63.01		62.83		71.01		73.74	75.54		70.68		.....

25.20.34.344. W. A. Tyler. Drilled irrigation water-table well in bolson deposits, diameter 36 inches, depth 110 feet. Land-surface datum is 4,237.50 feet above msl. Highest water level 54.35 below lsd, May 23, 1948; lowest 67.13 below lsd, Nov. 28, 1951. Records available: 1948-52. Jan. 29, 65.26; Mar. 28, 65.02. 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.

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 74.22 below lsd, July 28, 1951. Records available: 1948-52. Jan. 30, 66.47; Nov. 11, 73.81.

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 77.10 below lsd, Sept. 10, 1952. Records available: 1948-52. Jan. 30, 69.31; Mar. 28, 70.58; Sept. 10, 77.10; Nov. 11, 75.39.

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 94.05 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 28, 89.66; Mar. 28, 89.59; Nov. 12, 94.05.

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 84.58 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 29, 77.77; Sept. 10, 120.60, pumping; Nov. 11, 84.58.

26.20.4.444. W. W. Roark. Drilled irrigation water-table well in bolson deposits, diameter 24 to 14 inches, depth 103 feet. Land-surface datum is 4,248.07 feet above msl. Highest water level 60.99 below lsd, Apr. 2, 1948; lowest 87.13 below lsd, July 19, 1952. Records available: 1948-52. July 19, 87.13. Measurement discontinued.

26.20.4.444a. W. W. Roark. Drilled irrigation water-table well in bolson deposits, diameter 16 inches. Records available: 1952. Nov. 11, 84.22.

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 70.01 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 29, 64.17; Nov. 12, 70.01.

26.20.5.334a. D. A. Lee. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 200 feet. Highest water level 69.95 below lsd, Nov. 12, 1952; lowest 81.79 below lsd, July 19, 1952. Records available: 1952. July 19, 81.79; Nov. 12, 69.95.

26.20.5.422. D. A. Lee. Dug and drilled irrigation water-table well in bolson deposits, diameter 30 to 16 inches, depth 106 feet. Land-surface datum is 4,237.93 feet above msl. Highest water level 54.72 below lsd, July 26, 1948; lowest 67.67 below lsd, Sept. 26, 1951. Records available: 1948-52. Jan. 29, 63.92. 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.

26.20.8.434. J. E. Weatherby. Drilled irrigation water-table well in bolson deposits, diameter 18 inches, depth 125 feet. Land-surface datum is 4,250.28 feet above msl. Highest water level 60.54 below lsd, Apr. 5, 1948; lowest 72.28 below lsd, Sept. 26, 1951. Records available: 1948-52. July 19, 83.18, pumping. 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.

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 91.07 below lsd, Nov. 11, 1952. Records available: 1948-52. Jan. 29, 82.58; Mar. 28, 82.19; July 21, 114.76, pumping; Nov. 11, 91.07.

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 78.35 below lsd, May 22, 1952. Records available: 1948-52. Jan. 30, 72.21; Mar. 28, 70.90; May 22, 78.35; July 19, 89.53, nearby well being pumped; Sept. 10, 93.49, nearby well being pumped; Nov. 11, 78.11.

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 94.93 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 29, 90.34; Mar. 28, 89.44; May 22, 91.00; July 19, 92.39; Sept. 10, 93.61; Nov. 12, 94.93.

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 79.64 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 29, 72.17; Mar. 28, 73.73, nearby well being pumped; Nov. 12, 79.64.

26.20.17.133. J. E. Weatherby. Dug stock water-table well in bolson deposits, diameter 36 to 6 inches, depth 63 feet. Highest water level 53.20 below lsd, May 23, 1948; lowest 62.08 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 28, 59.91; July 19, 60.67; Sept. 10, 61.48; Nov. 12, 62.08.

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 108.41 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 29, 104.03; Mar. 28, 103.67; May 22, 104.65; July 19, 105.80; Sept. 10, 107.05; Nov. 12, 108.41.

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 91.46 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 29, 84.91; Mar. 28, 85.39; May 22, 88.15; Nov. 12, 91.46.

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 56.83 below lsd, Sept. 24, 1951. Records available: 1948-52. Jan. 28, 52.94; Mar. 29, 53.20; Nov. 12, 54.57.

26.21.11.200. R. F. Robinson. Formerly Baker. 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 81.90 below lsd, Nov. 12, 1952. Records available: 1948-52. Jan. 28, 80.68; July 19, 81.23; Nov. 12, 81.90.

27.19.19.433. Anderson & Wiley. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 210 feet. Land-surface datum is 4,415.13 feet above msl. Highest water level 133.31 below lsd, Mar. 22, 1949; lowest 140.48 below lsd, Sept. 24, 1951. Records available: 1948-52. Jan. 27, 137.45. 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.

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 136.77 below lsd, Sept. 24, 1951. Records available: 1949-52. Jan. 27, 134.40; Mar. 29, 134.47; Nov. 12, 136.09.

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 127.61 below lsd, Nov. 12, 1952. Records available: 1949-52. Jan. 27, 126.48; Mar. 29, 126.55; May 21, 126.70; July 19, 126.88; Sept. 10, 127.09; Nov. 12, 127.61.

27.19.32.211. 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 147.89 below lsd, Nov. 12, 1952. Records available: 1949-52. Jan. 27, 146.72; Mar. 29, 146.61; May 21, 147.01; July 19, 147.61; Sept. 10, 147.88; Nov. 12, 147.89.

27.20.9.100. Kate 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 74.77 below lsd, Nov. 12, 1952. Records available: 1949-52. Jan. 28, 73.64; Mar. 29, 73.90; July 19, 74.33, pumped recently; Sept. 10, 74.78, pumping; Nov. 12, 74.77.

27.20.12.444. Edna Curry. Drilled irrigation water-table well in bolson deposits, diameter 16 inches, depth 200 feet. Highest water level 105.15 below lsd, Mar. 22, 1949; lowest 113.60 below lsd, Nov. 12, 1952. Records available: 1949-52. Jan. 28, 110.14; Nov. 12, 113.60.

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 33.55 below lsd, May 25, 1949. Records available: 1949-52. Jan. 27, 29.59; Mar. 29, 30.23; May 21, 31.11; July 19, 32.29; Sept. 10, 32.88; Nov. 12, 33.37.

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 216.09 below lsd, Nov. 12, 1952. Records available: 1949-52. Jan. 27, 215.40; Mar. 29, 217.75, pumping; May 21, 215.69, pumped recently; July 19, 215.91; Sept. 10, 215.95; Nov. 12, 216.09.

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: 1948-52. Jan. 27, 256.30; Mar. 29, 257.62, pumping; May 21, 256.92, pumped recently; July 19, 256.37, pumping; Sept. 10, 256.16; Nov. 12, 256.85, pumping.

29.19.3.100. T. B. Strickland. Dug stock water-table well in bolson deposits, diameter 36 inches, depth 31 feet. Highest water level 22.65 below lsd, Dec. 4, 1950; lowest 27.94 below lsd, July 19, 1952. Records available: 1949-52. Jan. 26, 27.17; Mar. 29, 27.81, pumping; May 21, 27.75; July 19, 27.94; Sept. 10, 27.59; Nov. 12, 26.54.

29.19.3.300. T. B. Strickland. Dug water-table well in bolson deposits, diameter 6 feet, depth 20 feet. Highest water level 12.96 below lsd, Sept. 26, 1950; lowest dry at 20.5, May 21, 1952. Records available: 1949-52. Jan. 26, 19.24; Mar. 29, 20.36; May 21, dry at 20.5; Sept. 10, 20.26; Nov. 12, 18.53.

Playas Valley

30.16.11.331. Jim Smith. Drilled irrigation water-table well in bolson deposits, diameter 12 inches. Highest water level 40.88 below lsd, Mar. 15, 1951; lowest 44.71 below lsd, Nov. 10, 1952. Records available: 1951-52. Jan. 26, 43.07; Mar. 27, 43.00; May 24, 43.48; July 17, 43.93; Sept. 11, 44.49; Nov. 10, 44.71.

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: 1948-52. Jan. 26, 48.27; May 24, 52.88; July 17, 68.65, pumping; Sept. 11, 70.65, pumping; Nov. 10, 48.87.

30.16.16.244. Morrison & McCoy. 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 40.24 below lsd, May 19, 1950. Records available: 1950-52. Jan. 26, 38.27; Mar. 27, 38.50; May 24, 38.21; July 17, 37.95; Sept. 11, 38.23; Nov. 10, 38.56.

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 58.59 below lsd, Nov. 10, 1952. Records available: 1948-52. Jan. 26, 54.06; Mar. 27, 52.88; May 22, 53.44; July 17, 55.66; Sept. 11, 57.41; Nov. 10, 58.59.

32.17.13.240. Victoria Land & Cattle Co. Drilled unused water-table well in bolson deposits, diameter 6 inches, depth 61 feet. Highest water level 57.92 below lsd, May 20, 1949; lowest 58.80 below lsd, Nov. 10, 1952. Records available: 1949-52. Jan. 26, 58.60; Mar. 27, 58.60; May 22, 58.66; July 17, 58.70; Sept. 11, 58.76; Nov. 10, 58.80.

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: 1948-52. Jan. 26, 97.40; Mar. 27, 97.62; July 17, 97.83; Sept. 11, 97.90; Nov. 10, 97.89.

Hidalgo County (Virden Valley).--The Virden Valley is in the New Mexico portion of the Duncan-Virden Valley and lies along the upper Gila River. Ground water in this area is pumped for irrigation as a supplement to the surface-water supply. Precipitation at Duncan amounted to 7.99 inches in 1952, which is about average. There was an increase in surface-water diversions. Approximately 30 irrigation wells were in use in the valley in 1952. Periodic measurements were made in 6 wells during the year. Ground-water levels showed an average rise of approximately 3 feet in 1952, with local rises of as much as 7 feet, attributed to recharge from the increased surface-water supply available.

Virden Valley

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. Records available: 1939-52. Jan. 23, 28.47; May 6, 10.16; Aug. 27, 26.62; Dec. 2, 23.05.

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: 1948-52. Jan. 23, 19.17; Aug. 27, 14.60; Dec. 2, 15.55.

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: 1939-52. May 6, 43.37; Aug. 27, 44.66; Dec. 2, 44.80.

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: 1939-52. Jan. 23, 29.84; May 6, 25.19; Aug. 27, 27.66; Dec. 2, 27.51.

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: 1939-52. May 6, 43.10; Aug. 27, 46.54; Dec. 2, 45.34.

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: 1939-52. Jan. 23, 35.79; May 6, 31.37; Aug. 27, 32.18; Dec. 2, 31.73.

Lea County

Tatum-Lovington-Hobbs area.--The Tatum-Lovington-Hobbs area, in the southeastern part of New Mexico, is a part of the High Plains. Ground water in quantity sufficient for irrigation and industrial use is obtained from the Ogallala formation. As a part of the investigation of ground-water conditions in the area which began in 1929, water levels were measured in 192 wells in January 1952 and in 35 of them at bimonthly intervals. Recording gages were maintained on three wells, one about a mile west of Tatum, one about half a mile northwest of Lovington, and the other about 17 miles southwest of Lovington. The measurements, made in January, all of which are not included in this report, are used to show the net annual change in ground-water storage as shown on the map. (See fig. 48.)

Precipitation in 1952 in Lea County was considerably below normal. The precipitation amounted to 10.19 inches at Tatum--5.92 inches below normal, 9.28 inches at Lovington--5.65 inches below normal, and 8.38 inches at Hobbs--7.34 inches below normal. Precipitation during the growing season, April to September, was also below normal, although about 75 to 85 percent of the annual amount occurred then. As significant recharge to the ground-water body occurs primarily during periods of excess precipitation, recharge in 1952 was probably small or nonexistent.

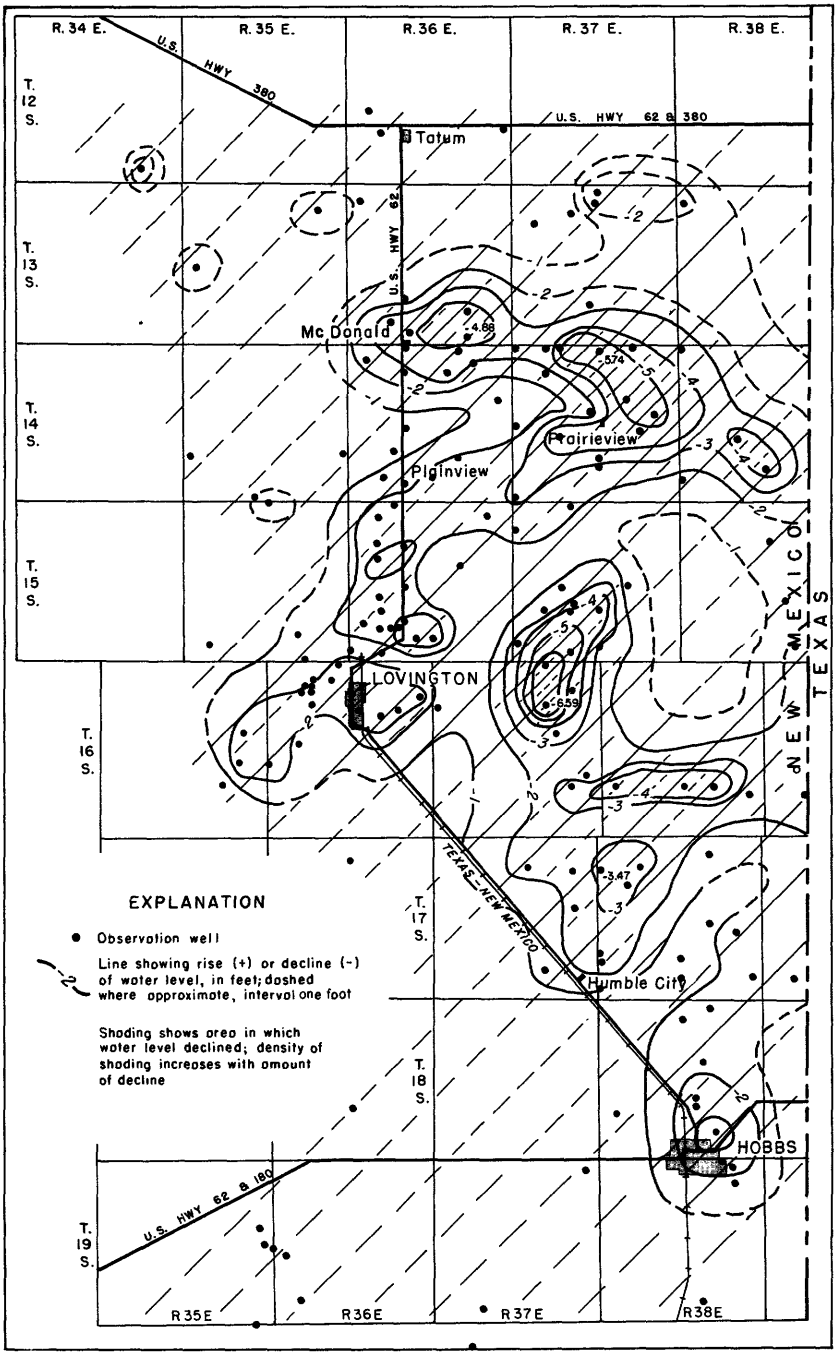


Figure 48.--Change in ground-water level from January 1952 to January 1953 in Tatum-Lovington-Hobbs area of High Plains, Lea County, N. Mex.

The acreage of land in Lea County irrigated from wells was about the same, or perhaps slightly greater in 1952, than in 1951. Because of the deficient precipitation, the amount of ground water required for the irrigation of crops was greater in 1952 than in previous years. Records of electric power consumed by 86 irrigation pumps indicate that about 5 to 10 percent more water was pumped per acre in 1952 than in 1951. It is estimated that about 180,000 acre-feet of water was pumped for irrigation in 1952 as compared with about 170,000 acre-feet in 1951. Pumpage for municipal use at Lovington reportedly increased from about 427 acre-feet in 1951 to about 767 acre-feet in 1952. Pumpage for municipal use at Hobbs in 1952 was more than twice the 1,900 acre-feet reportedly pumped in 1951.

As a result of the deficient precipitation and record high pumpage of ground water in 1952 the net declines in water levels were in general larger than for any previous year. The accompanying map shows the areal changes in water levels from January 1952 to January 1953. In this period the water levels declined more than 1 foot under about 454 square miles, more than 2 feet under about 226 square miles, more than 3 feet under about 89 square miles, more than 4 feet under about 38 square miles, and more than 5 feet under about 11 square miles. In comparison, the water levels declined 1, 2, and 3 feet under about 256, 106, and 17 square miles, respectively, in 1951. The areas of greatest decline coincide with the areas of greatest pumpage. In the McDonald area water levels declined in excess of 4 feet under an area of about 3 square miles. The Prairieview area had declines in excess of 5 feet under about 5 square miles. An area about 7 miles east of Lovington had declines in excess of 6 feet under about 2 square miles.

Tatum-Lovington-Hobbs Area

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 30.96 below lsd, Nov. 20, 1952. Records available: 1949-52. Jan. 12, 30.58; Mar. 24, 30.68; May 25, 30.75; July 24, 30.82; Sept. 19, 30.90; Nov. 20, 30.96.

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 25.10 below lsd, Sept. 19, 1952. Records available: 1947-52. Jan. 13, 24.14, pumped recently; Mar. 24, 24.12, pumping; May 25, 24.28; July 24, 24.96, pumping; Sept. 19, 25.10; Nov. 20, 24.61, pumping.

12.36.29.122. E. D. Holt. Drilled unused water-table well in Ogallala formation, diameter 12 inches, depth 75 feet. Highest water level 27.43 below lsd, Sept. 24, 1945; lowest 31.11 below lsd, Nov. 20, Nov. 29, 1952. Records available: 1945-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.42	30.42	30.45	.....	.....	30.67	30.78	30.90	.....	.....	.....	.....
5	30.42	30.43	30.45	.....	.....	30.69	30.80	30.89	.....	.....	.....	.....
10	30.42	30.43	30.47	.....	.....	30.71	30.80	30.95	.....	.....	.....	.....
15	30.39	30.44	30.48	.....	.....	30.73	30.83	30.94	.....	.....	.....	.....
20	30.41	30.44	30.48	.....	.....	30.75	30.82	.....	31.07	.....	31.11	.....
25	30.42	30.44	30.48	.....	30.65	30.77	30.85	.....	.....	.....	31.10	.....
30	30.43		.....	.....	.....	30.78	30.88	.....	.....	.....	.....	.....

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 31.44 below lsd, Nov. 20, 1952. Records available: 1945-52. Jan. 15, 30.93; Mar. 24, 31.02; May 25, 31.14; July 24, 31.25; Sept. 19, 31.37; Nov. 20, 31.44.

13.37.13.132. A. M. Brownfield. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 41 feet. Highest water level 25.46 below lsd, Aug. 12, 1941; lowest 30.12 below lsd, Dec. 21, 1940. Records available: 1930-52. Jan. 13, 29.47; Mar. 24, 29.51; May 25, 29.60; July 24, 29.72; Sept. 19, 29.90; Nov. 20, 30.05.

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 42.39 below lsd, Nov. 15, 1929. Records available: 1929-52. Jan. 9, 39.65; Mar. 22, 39.66; May 24, 39.65; July 24, 39.97; Sept. 20, 40.26; Nov. 19, 40.59.

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 52.24 below lsd, Sept. 19, 1952. Records available: 1949-52. Jan. 12, 47.05; Mar. 24, 46.68; May 24, 51.18; July 24, 50.67; Sept. 19, 52.24.

14.36.13.211. 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 40.56 below lsd, Nov. 19, 1952. Records available: 1929-52. Jan. 12, 39.34; Mar. 24, 39.43; May 24, 39.60; July 24, 39.87; Sept. 19, 40.20; Nov. 19, 40.56.

14.37.14.112. M. E. Powell. Drilled unused water-table well in Ogallala formation, diameter 11 inches, depth 88 feet. Highest water level 34.51 below lsd, Apr. 1, 1945; lowest dry at 56.20, Nov. 19, 1952. Records available: 1939-52. Jan. 11, 48.66; Mar. 24, 48.29; May 25, 51.60; July 24, 52.83; Sept. 19, 55.73; Nov. 19, dry at 56.20. Measurement discontinued.

14.37.27.131. J. R. Fort. Drilled unused water-table well in Ogallala formation, diameter 7 inches, depth 58 feet. Highest water level 36.10 below lsd, May 22, 1947; lowest 46.11 below lsd, Nov. 19, 1952. Records available: 1929-52. Jan. 11, 42.02; Mar. 24, 41.62; May 24, 42.84; July 24, 43.70; Sept. 19, 45.45; Nov. 19, 46.11.

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 66.53 below lsd, Sept. 19, 1952. Records available: 1949-52. Jan. 9, 50.16; Mar. 22, 51.92; May 24, 79.95, pumping; July 24, 85.77, pumping; Sept. 19, 66.53; Nov. 19, 57.32.

14.38.21.311. Claude Cox. Drilled irrigation water-table well in Ogallala formation. Highest water level 32.48 below lsd, Jan. 21, 1949; lowest 47.23 below lsd, July 24, 1952. Records available: 1949-52. Jan. 11, 38.16; Mar. 24, 39.04; May 25, 41.43; July 24, 47.23; Sept. 19, 43.85; Nov. 19, 41.81.

15.36.8.111a. Gordon Gann. Drilled domestic water-table well in Ogallala formation, diameter 6 inches. Highest water level 41.33 below lsd, Mar. 23, 1949; lowest 55.64 below lsd, Sept. 19, 1952. Records available: 1949-52. Jan. 9, 48.80; Mar. 22, 52.08; May 24, 69.60, nearby well being pumped; July 24, 51.15; Sept. 19, 55.64; Nov. 19, 50.41.

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 41.03 below lsd, Sept. 20, 1951. Records available: 1930-52. Jan. 10, 41.35, pumping; Mar. 22, 39.08, pumping; May 25, 40.20; July 23, 40.03; Sept. 19, 44.94, pumping; Nov. 19, 44.07, 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 50.88 below lsd, Sept. 17, 1952. Records available: 1948-52. Jan. 8, 45.47; Mar. 22, 45.35; May 24, 49.39; July 22, 48.83; Sept. 17, 50.88; Nov. 19, 48.24.

16.36.4. Lot 12. E. H. Byers. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 65 feet. Recording gage installed August 3, 1940. Highest water level 43.35 below lsd, Mar. 14, 1943; lowest 55.19 below lsd, Sept. 21, 1952. Records available: 1934-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	51.40	51.29	50.94	50.73	.....	52.36	53.05	53.51	54.51	e54.49	54.53	54.06
2	.....	.....	.....	.....	51.68	52.33	.....	.....	.....	e54.47	54.63	54.03
3	.....	.....	.....	.....	.....	52.33	.....	.....	.....	e54.44	54.65	54.03
4	.....	.....	.....	.....	.....	52.34	.....	.....	.....	e54.41	54.60	54.09
5	51.33	51.52	50.92	50.73	51.71	52.39	53.23	53.55	54.57	54.37	54.55	54.18
6	.....	.....	.....	.....	.....	52.53	.....	.....	54.59	54.33	54.50	54.19
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.30	.....	54.27
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.26	.....	54.28
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.22	.....	54.33
10	51.22	51.33	50.88	51.06	51.93	52.79	53.44	53.81	.....	54.19	.....	54.39
11	.....	.....	.....	.....	.....	.....	53.48	.....	.....	54.21	.....	54.40
12	.....	.....	.....	.....	.....	.....	.....	.....	54.90	54.19	.....	54.36
13	.....	.....	.....	.....	.....	.....	.....	.....	54.94	54.16	54.27	54.30
14	.....	.....	.....	.....	.....	52.74	.....	.....	54.98	54.14	54.21	54.25
15	51.16	51.18	50.84	51.37	52.30	.....	53.43	54.01	55.00	54.11	54.18	54.19
16	.....	.....	.....	51.48	.....	.....	53.45	.....	55.01	54.08	54.19	54.13
17	.....	.....	.....	.....	.....	.....	53.48	.....	55.03	54.06	54.21	54.09
18	.....	.....	.....	.....	.....	.....	.....	.....	55.08	54.03	54.23	54.05
19	.....	.....	.....	.....	.....	52.65	.....	.....	55.11	54.00	54.27	54.01
20	51.10	51.09	50.80	.....	52.65	52.74	53.27	54.15	55.14	53.97	54.36	.....

16.36.4. Lot 12--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	.....	.....	.....	.....	.....	.....	.....	.....	55.19	53.96	54.45	.....
22	.....	.....	.....	.....	.....	.....	53.24	.....	55.13	53.97	54.52	.....
23	.....	.....	.....	.....	.....	52.94	53.20	.....	55.06	53.95	54.45	.....
24	.....	.....	.....	.....	.....	.....	53.19	.....	54.99	53.94	54.39	.....
25	51.04	51.02	50.76	.....	52.58	52.94	53.28	54.31	54.92	53.97	54.35	.....
26	.....	.....	.....	.....	.....	.....	53.40	.....	54.85	54.07	54.30	.....
27	.....	.....	.....	.....	.....	.....	53.40	.....	e54.77	54.12	54.24	.....
28	.....	.....	.....	.....	.....	.....	53.39	.....	e54.70	54.22	54.20	.....
29	.....	50.96	.....	.....	.....	.....	53.46	.....	e54.62	54.25	54.15	.....
30	.....	.....	.....	.....	.....	53.01	53.50	.....	e54.54	54.33	54.10	.....
31	51.11		50.73		52.39		53.52	54.48		54.44		53.64

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 49.06 below lsd, Nov. 17, 1952. Records available: 1949-52. Jan. 6, 40.67; Mar. 21, 39.65; May 23, 46.86; July 22, 45.96; Sept. 18, 53.06, pumped recently; Nov. 17, 49.06.

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 52.12 below lsd, Nov. 17, 1952. Records available: 1947-52. Jan. 6, 41.89; Mar. 21, 41.71; May 23, 54.82, pumped recently; July 22, 45.45; Sept. 18, 48.57; Nov. 17, 52.12.

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 146.28 below lsd, Dec. 31, 1952; lowest 148.45 below lsd, Sept. 6-7, 1952. Records available: 1952. Recording gage installed July 23, 1952.

Daily highest water level from recorder graph*

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	147.98	148.39	148.19	147.74	146.97
2	.....	147.95	148.33	148.25	147.81	146.85
3	.....	147.96	148.34	148.19	147.52	146.89
4	.....	147.99	148.37	148.26	147.41	146.91
5	.....	147.98	148.42	148.30	147.43	146.77
6	.....	147.92	148.45	148.40	147.46	146.75
7	.....	147.83	148.45	148.35	147.34	146.81
8	.....	147.93	148.41	148.34	147.35	146.78
9	.....	147.83	148.43	148.42	147.39	146.85
10	.....	147.79	148.43	148.38	147.43	146.69
11	.....	147.78	148.40	148.41	147.46	146.69
12	.....	147.83	148.36	148.35	147.36	146.70
13	.....	147.82	148.42	148.34	147.35	146.69
14	.....	147.79	148.44	148.36	147.36	146.69
15	.....	147.78	148.33	148.26	147.32	146.63
16	.....	147.84	148.28	148.23	147.26	146.58
17	.....	147.89	148.36	148.30	147.33	146.60
18	.....	147.92	148.39	148.19	147.31	146.54
19	.....	147.94	148.36	148.14	147.18	146.60
20	.....	148.03	148.41	148.12	147.14	146.50
21	.....	148.11	.....	148.10	147.13	146.45
22	.....	148.11	148.34	148.10	147.20	146.50
23	h148.09	148.14	148.33	148.05	147.07	146.43
24	148.04	148.17	148.31	147.99	146.99	146.54
25	148.04	148.21	148.28	147.98	e147.07	146.42
26	148.10	148.22	148.23	147.97	147.03	146.42
27	148.05	148.24	148.18	147.97	147.04	146.39
28	148.05	148.27	148.20	147.87	146.93	146.32
29	148.06	148.29	148.19	147.79	147.01	146.34
30	148.07	148.29	148.18	147.80	146.87	146.38
31	148.04	148.33		147.79		146.28

* No record for January, February, March, April, May, and June.
e Estimated.
h Tape measurement.

17.33.13.434. Formerly 17.33.13.433. Potash Co. of America. Drilled industrial water-table well in Ogallala formation, diameter 16 inches. Highest water level 144.18 below lsd, Nov. 17, 1948; lowest 171.23 below lsd, Nov. 18, 1952. Records available: 1948-52. Jan. 4, 160.24; Mar. 22, 161.96; May 24, 185.92, pumping; July 23, 189.07, pumping; Sept. 18, 163.96; Nov. 18, 171.23.

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 161.03 below lsd, Nov. 18, 1952. Records available: 1950-52. Jan. 4, 160.68; Mar. 22, 160.87; May 24, 160.95; July 23, 160.98; Sept. 18, 160.90; Nov. 18, 161.03.

17.34.21.143. Duval Sulphur Potash Co. Drilled industrial water-table well in Ogallala formation, diameter 12 inches, depth 245 feet. Highest water level 112.71 below lsd, Jan. 21, 1951; lowest 121.86 below lsd, Nov. 18, 1952. Records available: 1951-52. Jan. 21, 1951, 112.71; July 23, 1952, 116.25; Sept. 18, 121.99, pumped recently; Nov. 18, 121.86.

17.34.35.130. Phillips Petroleum Co. Drilled unused water-table well in Ogallala formation, diameter 8 inches, depth 132 feet. Highest water level 89.90 below lsd, Nov. 18, 1952; lowest 91.98 below lsd, Jan. 26, 1941. Records available: 1940-52. Jan. 4, 89.95; Mar. 22, 89.94; May 24, 90.03; July 22, 89.95; Sept. 18, 89.95; Nov. 18, 89.90.

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: 1940-52. Jan. 4, 39.26; Mar. 22, 39.30; May 24, 39.37; July 22, 39.38; Sept. 18, 39.43; Nov. 19, 39.47.

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: 1939-52. Jan. 5, 42.44; Mar. 22, 42.47; May 24, 42.64; July 21, 42.68; Sept. 17, 42.90; Nov. 19, 42.73.

17.36.27.131. Wallace Mitchell. Drilled irrigation water-table well in Ogallala formatio Highest water level 33.00 below lsd, Sept. 23, 1949; lowest 36.52 below lsd, May 17, 1950. Records available: 1947-52. Jan. 5, 33.71; Mar. 22, 35.03; May 24, 35.03; July 21, 34.21; Sept. 17, 35.52; Nov. 19, 34.19.

17.38.7.111a. Jim Cunningham. Drilled irrigation water-table well in Ogallala formatior diameter 16 inches, reported depth 135 feet. Highest water level 35.59 below lsd, Mar. 21, 1952; lowest 42.24 below lsd, Sept. 18, 1952. Records available: 1951-52. Jan. 5, 35.94; Mar. 21, 35.59; May 23, 41.27; July 22, 38.74; Sept. 18, 42.24; Nov. 17, 40.34.

17.38.30.312. Mrs. W. L. Goedeke. Drilled and dug unused water-table well in Ogallala formation, diameter 7 inches, depth 56 feet. Highest water level 26.47 below lsd, Feb. 4, 1942; lowest 35.55 below lsd, Nov. 17, 1952. Records available: 1929-52. Jan. 5, 33.95; Mar. 21, 34.32; May 23, 34.54; July 22, 34.78; Sept. 18, 35.30; Nov. 17, 35.55.

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 29.58 below lsd, July 24, 1951. Records available: 1943-52. Jan. 6, 27.96; Mar. 21, 28.03; May 23, 28.20; July 22, 29.31; Sept. 18, 28.46; Nov. 17, 28.52.

18.36.27.111. State of New Mexico. Drilled unused water-table well in Ogallala formation, diameter 6 inches. Highest water level 38.09 below lsd, Oct. 23, 1942; lowest 41.75 below lsd, Mar. 15, 1941. Records available: 1939-52. Jan. 5, 40.54; Mar. 21, 40.58; May 22, 40.62; July 21, 40.68; Sept. 17, 40.72; Nov. 18, 40.76.

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 36.13 below lsd, Nov. 20, 1951. Records available: 1940-52. Jan. 4, 32.73; Mar. 21, 33.47; May 23, 39.77, pumped recently; July 22, 35.28; Sept. 18, 41.52, pumped recently; Nov. 17, 35.96.

18.38.30.213. 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: 1931-52. Jan. 4, 24.56; Mar. 21, 24.80; May 23, 23.96; July 22, 24.14; Sept. 17, 23.96; Nov. 17, 24.22.

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: 1929-52. Jan. 7, 12.32; Mar. 21, 12.32; May 23, 12.37; July 22, 11.93; Nov. 18, 12.50.

20.35.1.221. Formerly 20.35.1.222. 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: 1929-52. Jan. 3, 23.26; Mar. 21, 23.42; May 22, 23.61; July 21, 23.73; Sept. 17, 23.82; Nov. 18, 23.45.

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: 1929-52. Jan. 3, 32.12; Mar. 21, 32.02; May 23, 32.27; July 22, 32.70; Sept. 17, 33.22; Nov. 18, 33.17.

Luna County

Mimbres Valley.--Mimbres Valley, comprising most of Luna County in southwestern New Mexico, is a broad desert plain, or bolson, into which the Mimbres River and its two chief tributaries, San Vicente Arroyo and Cow Springs Arroyo drain. The river, which runs southeastward through the valley, is perennial in its upper course, but flows only in time of heavy rainfall in its lower course. The channel terminates in the flats east of Deming. Recharge to the ground water is derived almost entirely from flows of the Mimbres drainage system which sink into the thick alluvium that underlies the valley. Irrigation wells are finished in the permeable beds of valley fill.

The program of measuring water levels in wells in the Mimbres Valley, which began in some wells in 1927, was continued in 1952. Water levels were measured in 1952 in 135 wells in January and in 74 wells at bimonthly intervals during the year. Water stage recording gages were maintained on 4 wells in areas of heavy pumping. The water-level measurements that are made in January of each year, when pumping is at a minimum, are compared to determine the net yearly change in ground-water storage. The changes in ground-water levels from January 1952 to January 1953 were used in preparing the map (fig. 49), but the water-level measurements made in wells only in January are not published in this report. Precipitation in 1952 at Deming, in the central part of the valley, was 8.37 inches, 1.34 inches below normal. Precipitation during the growing season from April through September was 6.59 inches, 0.20 inch above normal. At Columbus, in the southern part of the valley, the precipitation for the year was 9.74 inches, 0.05 inch above normal, of this, 7.49 inches fell during the growing season which is 1.23 inches above normal.

About 27,590 acres were irrigated in the Mimbres Valley in 1952 as compared with about 27,000 acres in 1951. As determined from a survey of the irrigated acreage by the State Engineer in 1952, 22,000 acres of this total is in the main irrigated area south of Deming. About 3,000 acres were irrigated in the Miesse-Lewis Flats area east of Deming, and about 1,440 acres were irrigated in the area west of Red Mountain. The remainder of the irrigated acreage was divided almost evenly between the Columbus area and the newly developed area a few miles east of the Little Florida Mountains. About 68,000 acre-feet of water was pumped for irrigation in Mimbres Valley in 1952, about the same as that pumped in 1951 based on a comparison of power consumption records for 310 wells equipped with electric pumps and the total irrigated acreage for 1951 and 1952.

The net annual declines in water level were, in 1952, the greatest on record and new record low water levels were reached in the Mimbres Valley by the end of the year. As shown on the map (fig. 49), declines of more than 1 foot occurred under an estimated area of 200 square miles in 1952, as compared to a like decline under 174 square miles in 1951. A 2-foot decline occurred under a total area of about 86 square miles, and a 3-foot decline occurred under an area of about 43 square miles. The main irrigated area extends from about 2 miles north to about 15 miles south of Deming and is about 10 miles in width. Within this area water levels declined more than 4 feet under about 6 square miles. Declines in water level of 4 feet also occurred west of Red Mountain and about 9 miles east of Deming, totaling less than 3 square miles for both areas. This was the first year in which there was a significant area of net decline in water level in excess of 4 feet.

Mimbres Valley

21.10.6.112. Fletcher Tigner. Formerly Tom 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 10.83 below lsd, Sept. 5, 1952. Records available: 1928-52. Jan. 7, 9.78; Mar. 18, 9.78; May 13, 8.85; July 16, 10.57; Sept. 5, 10.83; Nov. 5, 10.52.

21.11.13.411c. Patterson & Perin Farms. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 151 feet. Highest water level 29.94 below lsd, Mar. 22, 1945; lowest 53.27 below lsd, Nov. 5, 1952. Records available: 1944-52. July 16, 51.99; Sept. 5, 88.46, pumping; Nov. 5, 53.27. 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.

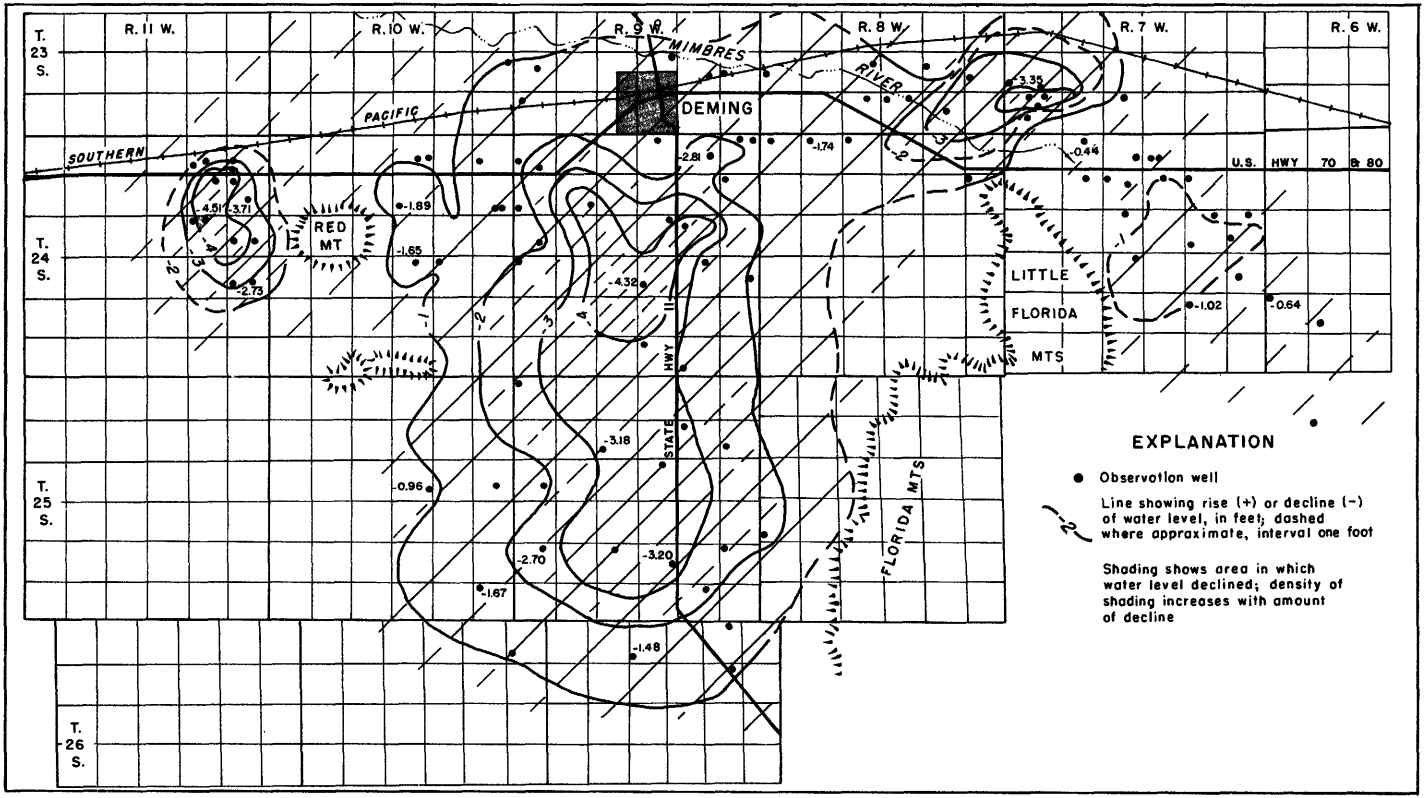


Figure 49.--Change in ground-water level from January 1952 to January 1953 in Mimbres Valley, Luna County, N. Mex.

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 36.36 below lsd, Nov. 5, 1952. Records available: 1929-52. Jan. 7, 35.04; Mar. 18, 35.53; May 13, 35.84; July 22, 35.67; Sept. 5, 35.21; Nov. 5, 36.36.

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 78.57 below lsd, Nov. 5, 1952. Records available: 1928-52. Jan. 9, 77.80; Mar. 18, 77.99; May 13, 78.11; July 22, 78.18; Sept. 5, 78.44; Nov. 5, 78.57.

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 36.60 below lsd, Nov. 5, 1952. Records available: 1929-52. Jan. 7, 35.42; Mar. 18, 35.98; July 22, 36.19; Sept. 5, 36.14; Nov. 5, 36.60.

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 70.01 below lsd, Sept. 5, 1952. Records available: 1928-52. Jan. 9, 69.38; Mar. 18, 69.57; May 13, 69.70; July 22, 69.87; Sept. 5, 70.01.

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 76.81 below lsd, Nov. 5, 1952. Records available: 1928-52. Jan. 9, 76.12; Mar. 18, 76.31; May 13, 76.45; July 22, 76.54; Sept. 5, 76.70; Nov. 5, 76.81.

22.11.23.222. State of New Mexico. Drilled unused water-table well in valley fill, diameter 24 inches, depth 152 feet. Highest water level 46.97 below lsd, Nov. 11, 1941; lowest 60.30 below lsd, Feb. 21, 1937. Records available: 1928-52. Jan. 8, 55.80; Mar. 18, 56.20; May 13, 56.50; July 22, 56.82; Sept. 5, 56.94; Nov. 5, 57.06. 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.

23.7.30. 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 32.11 below lsd, Sept. 6, 1952. Records available: 1931-52. Jan. 14, 30.12; Mar. 20, 30.42; May 19, 31.34; July 22, 31.65; Sept. 6, 32.11; Nov. 6, 31.86.

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: 1947-52. Jan. 14, 45.26; Mar. 19, 46.07; May 19, 46.80; July 22, 47.03; Sept. 6, 46.52; Nov. 6, 46.27.

23.8.26.131b. "Bud" Lewis. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 144 feet. Highest water level 49.98 below lsd, Jan. 14, 1952; lowest 56.49 below lsd, May 19, 1952. Records available: 1951-52. Jan. 14, 49.98; Mar. 20, 69.03, pumping; May 19, 56.49; July 22, 55.89; Sept. 6, 83.85, pumping; Nov. 6, 53.90. 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.

23.8.34.111. Geo. Dowdle. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 101 feet. Highest water level 33.52 below lsd, Jan. 5, 1940; lowest 70.53 below lsd, Sept. 18, 1951. Records available: 1940-52. Jan. 14, 47.67; Mar. 21, 48.73; May 19, 59.96; Nov. 6, 53.74. 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.

23.8.34.211. 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 58.27 below lsd, May 19, 1952. Records available: 1928-52. Jan. 14, 47.09; Mar. 21, 48.34; May 19, 58.27; July 15, 83.08, pumping; Sept. 6, 84.15, pumping; Nov. 6, 51.95.

23.9.22.213. 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 71.34 below lsd, Sept. 5, 1952. Records available: 1928-52. Jan. 9, 67.46; Mar. 18, 67.36; May 13, 68.86; July 16, 70.15; Sept. 5, 71.34; Nov. 6, 69.33.

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 65.61 below lsd, May 20, 1952. Records available: 1927-52. Jan. 22, 62.88; Mar. 26, 62.69; May 20, 65.61; July 15, 91.74, pumping; Nov. 8, 65.56.

23.9.27.221. J. D. McDaniels. Drilled domestic water-table well in valley fill, diameter 7 inches, depth 70 feet. Highest water level 48.20 below lsd, Aug. 28, 1929; lowest 63.43 below lsd, July 16, 1952. Records available: 1928-52. Jan. 10, 62.68; Mar. 27, 62.59; May 20, 65.05, pumped recently; July 16, 63.43; Nov. 5, 64.25, pumping. 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.

24.7.3.311a. G. D. Hatfield. Drilled unused water-table well in valley fill, diameter 42 inches, depth 128 feet. Highest water level 85.57 below lsd, Mar. 17, 1950; lowest 102.56 below lsd, July 16, 1952. Records available: 1949-52. Jan. 14, 88.69; Mar. 19, 87.30; May 20, 97.70; July 16, 102.56; Sept. 6, 105.41, nearby well being pumped; Nov. 6, 91.61. 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.

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: 1928-52. Jan. 14, 91.08; Mar. 19, 89.56; May 20, 94.29; July 16, 93.95; Sept. 6, 98.69; Nov. 6, 94.97.

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 93.72 below lsd, Nov. 22, 1951. Records available: 1928-52. Jan. 14, 92.46; July 22, 93.37; Sept. 6, 93.45; Nov. 6, 93.40.

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: 1939-52. Jan. 16, 85.01; May 14, 97.06, nearby well being pumped.

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: 1946-52. Jan. 16, 85.01; Mar. 19, 83.23.

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 94.53 below lsd, Nov. 6, 1952. Records available: 1940-52. Jan. 11, 93.03; Mar. 19, 91.77; May 14, 93.84; July 16, 94.65, nearby well being pumped; Nov. 6, 94.53.

24.7.10.211. Fred Hassman. Drilled unused water-table well in valley fill, diameter 36 inches, depth 109 feet. Highest water level 82.47 below lsd, Jan. 6, 1940; lowest 106.60 below lsd, Sept. 1, 1949. Records available: 1940-52. Jan. 11, 92.35; Mar. 19, 91.46; May 20, 98.34; July 16, 100.06; Sept. 6, 102.70; Nov. 6, 95.59. 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.

24.7.14.221. 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 88.80 below lsd, Sept. 30, Oct. 1, 1952. Records available: 1939-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	87.18	86.69	86.25	.....	.....	87.24	87.45	87.90	88.42	88.80	88.45	88.21
5	87.11	86.63	86.23	.....	.....	87.18	87.51	87.96	88.49	88.74	88.41	88.17
10	87.03	86.55	86.15	.....	.....	87.12	87.57	88.04	88.56	88.69	88.38	88.11
15	86.93	86.48	86.14	.....	.....	87.15	86.25	88.14	88.64	88.62	88.34	88.06
20	86.83	86.41	86.25	.....	87.32	87.25	87.69	88.23	88.70	88.57	88.29	87.96
25	86.75	86.36	.....	.....	87.31	87.34	87.78	88.31	88.79	88.53	88.25	87.91
30	86.71		.....	.....	87.26	87.43	87.87	88.40	88.80	88.47	88.21	87.85

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: 1941-52. Jan. 11, 92.34; Mar. 19, 91.81; May 14, 91.95; July 16, 92.34; Sept. 6, 92.80; Nov. 6, 93.03.

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 77.30 below lsd, Nov. 6, 1952. Records available: 1940-52. Jan. 16, 76.83; Mar. 18, 76.94; May 20, 76.99; July 22, 77.05; Sept. 6, 77.15; Nov. 6, 77.30.

24.8.1.333b. F. K. Kretek. Drilled irrigation water-table well in valley fill, diameter 11 inches, depth 78 feet. Highest water level 15.65 below lsd, Nov. 24, 1944; lowest 29.97 below lsd, Sept. 6, 1952. Records available: 1940-52. Jan. 14, 26.01; Mar. 19, 25.40; May 14, 28.17; July 22, 29.13; Sept. 6, 29.97; Nov. 8, 28.30. 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.

24.8.4.111. 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 50.84 below lsd, Sept. 25, 1952. Records available: 1941-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	48.17	47.89	47.96	48.89	49.23	.....	49.94	e50.54	.....	.....	50.39
5	.....	48.13	47.92	48.12	49.00	49.22	.....	49.98	50.52	.....	.....	50.34
10	.....	48.10	47.87	48.24	49.16	49.22	.....	50.11	50.63	.....	50.66	50.33
15	.....	48.07	47.86	48.40	49.20	49.25	.....	50.22	50.72	.....	50.58	50.26
20	.....	48.01	47.82	48.51	49.20	.....	.....	e50.31	50.80	.....	50.51	50.19
25	48.22	47.98	47.81	48.67	49.19	.....	49.83	e50.41	50.84	.....	50.46	50.15
30	48.19		47.87	48.85	49.23	.....	49.88	e50.50	50.83	.....	50.40	50.09

e Estimated.

24.8.6.112. Deming Air Base Well 3. Drilled public-supply water-table well in valley fill, diameter 12 inches, depth 235 feet, casing perforated 150-235. Land-surface datum is 4,240.6 feet above msl. Highest water level 48.75 below lsd, Oct. 14, 1942; lowest 63.06 below lsd, Sept. 4, 1952. Records available: 1942-52. Jan. 22, 61.90; Mar. 26, 61.53; May 13, 62.38; July 15, 62.71; Sept. 4, 63.06. 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.

24.9.1.211. Deming Air Base Well 2. Drilled public-supply water-table well in valley fill, diameter 12 inches, depth 235 feet, casing perforated 170-235. Land-surface datum is 4,245.3 feet above msl. Highest water level 54.89 below lsd, Oct. 14, 1942; lowest 68.95 below lsd, Sept. 4, 1952. Records available: 1942-52. Jan. 22, 67.78; Mar. 26, 68.04; May 13, 68.29; July 15, 68.61; Sept. 4, 68.95. 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.

24.9.2.421. Roscendo Trujillo. Dug domestic water-table well in valley fill, depth 74 feet. Highest water level 48.02 below lsd, Dec. 19, 1931; lowest 69.51 below lsd, Sept. 23, 1950. Records available: 1931-52. Jan. 22, 65.60; Mar. 26, 65.11.

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 95.21 below lsd, Sept. 21, 1950. Records available: 1941-52. Jan. 25, 83.77; May 16, 94.84; July 15, 129.93, pumping, nearby well being pumped; Nov. 5, 92.58.

24.9.9.411. Joe Clary. Drilled unused water-table well in valley fill. Highest water level 65.16 below lsd, Jan. 18, 1939; lowest 87.96 below lsd, Nov. 8, 1952. Records available: 1939-52. Jan. 26, 79.18; Mar. 24, 82.89, nearby well being pumped; Nov. 8, 87.96. 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.

24.9.14.113. R. O. Fewell. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 405 feet. Highest water level 67.11 below lsd, Jan. 10, 1950; lowest 88.40 below lsd, Sept. 22, 1950. Records available: 1949-52. Jan. 25, 71.77; July 15, 121.05, pumping; Sept. 9, 112.20, pumping; Nov. 7, 81.27.

24.9.19.111. Francis Ligocky. Dug and drilled unused water-table well in valley fill, diameter 10 inches, depth 178 feet. Highest water level 72.53 below lsd, Mar. 15, 1940; lowest 93.60 below lsd, Nov. 8, 1952. Records available: 1940-52. Jan. 25, 90.34; Mar. 20, 90.00, nearby well being pumped; May 16, 93.15, nearby well being pumped; July 15, 94.13, nearby well being pumped; Sept. 5, 95.73, nearby well being pumped; Nov. 8, 93.60. 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.

24.10.1.311. R. V. Griggs. Drilled irrigation water-table well in valley fill, diameter 10 inches, depth 198 feet. Highest water level 78.45 below lsd, Jan. 9, 1942; lowest 103.91 below lsd, July 23, 1951. Records available: 1941-52. Jan. 25, 89.11; Mar. 26, 94.68; May 16, 96.69; Sept. 4, 70.97, nearby well being pumped; Nov. 5, 94.15. 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.

24.10.3.411. A. M. and B. L. Speir. Dug domestic water-table well in valley fill. Highest water level 77.22 below lsd, Oct. 23, 1928; lowest 98.36 below lsd, Nov. 5, 1952. Records available: 1928-52. Jan. 25, 96.79, nearby well being pumped; July 15, 99.89, nearby well being pumped; Sept. 9, 100.36, nearby well being pumped; Nov. 5, 98.36. 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.

24.10.3.411b. A. M. and B. L. Speir. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 198 feet. Highest water level 75.33 below lsd, Mar. 10, 1942; lowest 92.69 below lsd, Sept. 26, 1951. Records available: 1940-52. Jan. 25, 89.72; Mar. 26, 116.8, pumping; July 15, 113.70; Sept. 9, 113.60; Nov. 5, 91.18. 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.

24.10.10.311. 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 96.11 below lsd, Nov. 5, 1952. Records available: 1927-52. Jan. 25, 93.76, pumped recently; July 15, 97.78, nearby well being pumped; Sept. 9, 99.32, nearby well being pumped; Nov. 5, 96.11.

24.10.12.431. Steve Hrna. Dug and drilled unused water-table well in valley fill, diameter 36-12 inches, reported depth 132 feet. Highest water level 77.61 below lsd, May 6-13, 1940; lowest 101.34 below lsd, Sept. 10, 1952. Records available: 1939-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	92.47	91.53	90.89	90.76	92.43	93.21	94.12	97.12	.....	97.74	95.36	94.71
2	92.44	91.50	90.81	90.82	92.47	93.23	94.16	97.53	.....	97.70	95.36	94.68
3	92.41	91.50	90.81	90.85	92.53	93.24	94.21	97.83h	100.87	97.79	95.36	94.67
4	92.37	91.48	90.79	90.94	92.58	.....	94.26	97.83	100.95	98.19	95.35	94.65
5	92.34	91.45	90.77	91.01	92.61	93.32	94.24	97.94	101.02	98.36	95.34	94.63
6	92.30	.....	90.76	91.05	92.64	93.34	94.24	98.29	101.08	97.91	95.35	94.58
7	92.26	91.37	90.74	91.10	92.69	93.38	94.28	98.62	101.14	97.94	95.32	94.56
8	92.25	91.35	90.70	91.14	92.71	93.43	94.30	98.96	101.22	97.68	95.26	94.53
9	92.20	91.32	90.69	91.21	92.73	93.44	94.31	99.19	101.27	97.13	95.24	94.51
10	92.17	91.29	90.68	91.27	92.76	93.48	94.34	99.36	101.34	96.91	95.22	.....
11	92.14	91.27	90.64	91.30	92.78	.....	94.39	99.51	101.26	96.71	95.20	.....
12	92.11	91.23	90.65	91.38	92.80	.....	94.40	99.72	101.20	96.54	95.15	.....
13	92.07	91.20	90.62	91.45	92.83	.....	94.46	99.84	101.23	96.49	95.12	.....
14	92.05	91.17	90.63	91.50	92.85	.....	94.51	.....	101.30	96.33	95.11	.....
15	92.02	91.17	90.60	91.56	92.86	.....	94.60	.....	101.22	96.24	95.07	94.34
16	91.98	91.13	90.58	91.61	92.89	.....	e94.65	.....	100.80	96.15	95.04	94.33
17	91.95	91.09	90.57	91.66	92.92	.....	94.62	.....	100.71	96.07	95.02	94.30
18	91.91	91.07	90.58	91.73	92.94	93.56	94.61	.....	100.67	95.94	95.02	94.28
19	91.91	91.06	90.57	91.78	92.96	93.58	94.61	.....	100.48	95.86	95.00	94.24
20	91.86	91.06	90.55	91.82	92.97	93.62	94.60	.....	100.52	95.79	94.97	94.21
21	91.83	91.03	90.56	91.89	92.98	93.66	94.64	.....	100.78	95.76	94.95	94.18
22	91.81	91.01	90.56	91.95	93.00	93.71	94.70	.....	100.64	95.79	94.92	94.14
23	91.78	90.97	90.55	92.00	93.01	93.75	94.82	.....	99.79	95.68	94.90	94.12
24	91.76	90.95	90.54	92.05	93.02	93.80	94.95	.....	99.04	95.61	94.88	e94.08
25	91.69	90.95	90.56	92.11	93.04	93.84	95.08	.....	98.52	95.55	94.87	.....
26	91.67	.....	90.48	92.16	93.06	93.90	95.22	.....	98.16	95.54	94.84	.....
27	91.66	.....	90.53	92.20	93.07	93.95	95.48	.....	98.06	95.55	94.82	94.00
28	91.63	90.89	90.58	92.26	93.09	93.99	95.74	.....	97.94	95.53	94.79	93.96
29	91.60	90.86	90.61	92.33	93.10	94.04	96.01	.....	97.85	95.45	94.76	93.93
30	91.57		90.66	e92.40	93.13	94.08	96.50	.....	97.77	95.39	94.73	93.90
31	91.54		90.71		93.17		96.90	.....		.....		93.87

e Estimated.
h Tape measurement.

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 84.29 below lsd, Nov. 8, 1952. Records available: 1941-52. Jan. 25, 81.72, nearby well pumped recently; Mar. 20, 81.36; May 16, 84.06; Nov. 8, 84.29.

24.10.23.111. E. F. Hurt. Dug and drilled irrigation water-table well in valley fill, diameter 36 inches, depth 168 feet. Highest water level 76.27 below lsd, Mar. 16, 1949; lowest 84.54 below lsd, Nov. 8, 1952. Records available: 1948-52. Jan. 25, 82.36, nearby well pumped recently; May 16, 83.98; July 15, 98.48, pumping and nearby well being pumped; Sept. 5, 94.84, nearby well being pumped; Nov. 8, 84.54. 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. 11. 2. 322. H. A. McKinney. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 191 feet. Land-surface datum is 4, 433 feet above msl. Highest water level 109. 66 below lsd, Mar. 15, 1951; lowest 113. 69 below lsd, July 22, 1951. Records available: 1951-52. Jan. 23, 112. 48. 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. 11. 11. 211. Raymond Demingas. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 200 feet. Land-surface datum is 4, 426 feet above msl. Highest water level 105. 48 below lsd, Mar. 15, 1951; lowest 108. 41 below lsd, Jan. 23, 1952. Records available: 1951-52. Jan. 23, 108. 41. 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. 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 111. 64 below lsd, Nov. 5, 1952. Records available: 1951-52. Jan. 23, 104. 49; Mar. 26, 104. 94; July 17, 102. 21; Sept. 9, 102. 25; Nov. 5, 111. 64.

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 108. 46 below lsd, Nov. 5, 1952. Records available: 1951-52. Jan. 23, 102. 73; Mar. 26, 125. 1, pumping; Nov. 5, 108. 46.

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 101. 48 below lsd, Nov. 5, 1952. Records available: 1952. Jan. 23, 95. 48; Mar. 26, 96. 20; May 16, 99. 75; Nov. 5, 101. 48.

24. 11. 13. 411. C. L. Lopez. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 200 feet. Land-surface datum is 4, 393 feet above msl. Highest water level 86. 77 below lsd, May 8, 1951; lowest 88. 22 below lsd, Jan. 23, 1952. Records available: 1951-52. Jan. 23, 88. 22; July 17, 93. 83, pumped recently. 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. 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 112. 80 below lsd, Nov. 5, 1952. Records available: 1951-52. Jan. 23, 107. 66; Mar. 26, 111. 3, pumping; Sept. 9, 149. 86, pumping; Nov. 5, 112. 80.

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 92. 14 below lsd, July 17, 1952. Records available: 1951-52. Jan. 23, 87. 71; Mar. 26, 87. 93, pumped recently; May 16, 101. 36, pumping; July 17, 92. 14; Sept. 9, 100. 84, pumping; Nov. 5, 90. 89.

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 1. 60 below lsd, Aug. 9, 1952; lowest 6. 27 below lsd, Sept. 6, 1952. Records available: 1952. May 12, 1. 68, pumped recently; Aug. 9, 1. 60; Sept. 6, 6. 27; Nov. 6, 2. 63.

25. 6. 3. 111. Ross. Drilled irrigation artesian well in valley fill, diameter 16 inches, depth 232 feet. Highest water level 4. 20 below lsd, Aug. 9, 1952; lowest 7. 88 below lsd, Nov. 6, 1952. Records available: 1952. Aug. 9, 4. 20; Sept. 6, 7. 23; Nov. 6, 7. 88.

25. 6. 4. 111. W. O. Douglas. Drilled irrigation water-table well in valley fill, diameter 18 inches, depth 230 feet, cased to 230, perforations 100-225. Highest water level 70. 76 below lsd, Nov. 6, 1952; lowest 75. 29 below lsd, May 14, 1952. Records available: 1952. May 14, 75. 29; Nov. 6, 70. 76.

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. 70 below lsd, Aug. 9, 1952. Records available: 1952. Mar. 19, 66. 6; Aug. 9, 84. 70; Sept. 6, 84. 49; Nov. 6, 72. 40.

25. 6. 8. 111. 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 64. 77 below lsd, Sept. 6, 1952. Records available: 1950-52. Jan. 16, 68. 96, pumped recently; Mar. 18, 64. 28; May 20, 64. 32; July 22, 64. 34; Sept. 6, 64. 77; Nov. 8, 64. 71.

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 74.09 below lsd, Sept. 9, 1952. Records available: 1942-43, 1945-52. Jan. 24, 71.12; Mar. 24, 71.29; May 20, 72.24; July 15, 72.70; Sept. 9, 74.09; Nov. 7, 73.87.

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 87.37 below lsd, Nov. 7, 1952. Records available: 1939-52. Jan. 24, 82.86, pumped recently; Mar. 24, 82.35; May 20, 86.30; Nov. 7, 87.37.

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 86.79 below lsd, Sept. 23, 1950. Records available: 1941-52. Jan. 25, 84.57. Measurement discontinued.

25.9.35.211a. L. V. Koenig. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 150 feet. Highest water level 58.65 below lsd, Jan. 6, 1951; lowest 60.96 below lsd, Nov. 20, 1951. Records available: 1939-52. Jan. 24, 60.34; Mar. 26, 60.55; July 15, 74.73, pumping; Sept. 9, 76.77, pumping; Nov. 7, 75.40, pumping. 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.

26.9.2.221. Tom Taylor. Dug and drilled irrigation water-table well in valley fill, diameter 14 inches, depth 74 feet. Highest water level 39.46 below lsd, Sept. 6, 1940; lowest 50.06 below lsd, May 9, 1951. Records available: 1940-52. Jan. 24, 49.30; July 15, 60.87, pumping. 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.

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 46.32 below lsd, Nov. 7, 1952. Records available: 1939-52. Jan. 24, 45.56; Mar. 26, 45.45; May 20, 45.58; July 15, 45.76; Sept. 9, 46.03; Nov. 7, 46.32.

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: 1951-52. Jan. 24, 25.70; Mar. 26, 28.55; May 20, 28.70, pumping; July 15, 27.75, pumping; Sept. 8, 26.08; Nov. 7, 25.96.

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 33.57 below lsd, Aug. 8, 1952. Records available: 1952. Aug. 8, 33.57; Sept. 8, 33.50; Nov. 7, 32.86.

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. Records available: 1952. July 23, 27.63.

27.9.12.111. Waterloo School. Drilled unused water-table well in valley fill, diameter 6 inches, depth 32 feet. Highest water level 26.95 below lsd, Mar. 22, 1945; lowest 30.59 below lsd, Sept. 8, 1952. Records available: 1944-52. Jan. 24, 29.33; Mar. 26, 29.14; May 20, 29.71; July 15, 30.12; Sept. 8, 30.59; Nov. 7, 30.33.

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 38.39 below lsd, May 15, 1952. Records available: 1952. May 15, 38.39; July 24, 10.92; Sept. 8, 11.35; Nov. 7, 12.15.

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 25.16 below lsd, May 15, 1952; lowest 26.25 below lsd, Sept. 8, 1952. Records available: 1952. May 15, 25.16; July 24, 26.05; Sept. 8, 26.25; Nov. 7, 25.48.

Quay County

House area.--The House area is on the High Plains in southwestern Quay County, about 40 miles south of Tucumcari. Irrigation in the area is by water from wells in the Ogallala formation. The program of measuring water levels in observation wells, which began in 1941, was continued in 1952. Water levels were measured in 63 wells in January and in about 24 wells at bimonthly intervals during the year. Recording gages were maintained on 2 wells, about half a mile north of House and about 2½ miles north of House. Only the water-level measurements made on wells at bimonthly intervals are included in this report.

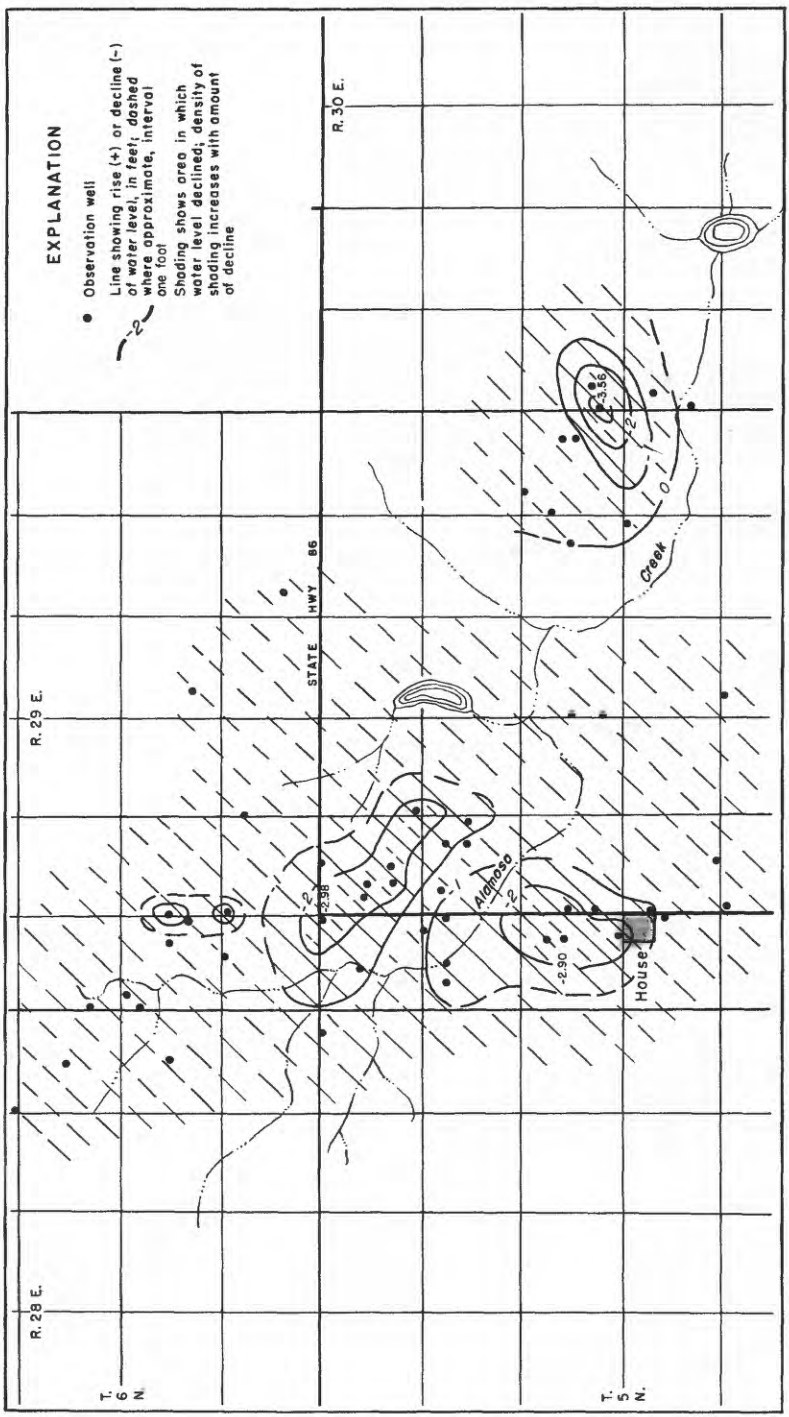


Figure 50.--Change in ground-water level from January 1952 to January 1953 in House area, Quay County, N. Mex.

Most of the recharge to the ground-water body in the House area is from local precipitation. In 1952 the precipitation at House was 8.22 inches, approximately 50 percent of normal and only 0.3 inch greater than in 1951. About 81 percent of the precipitation, 6.70 inches occurred during the growing season from April to September. Precipitation in July was 2.70 inches and in August 1.75 inches. The recharge to the ground-water body from precipitation during the year undoubtedly was considerably less than average. On the basis of the precipitation during the growing season, the amount of irrigation required for crops was less than in 1951 but probably greater than average. The land irrigated in 1952 apparently was about the same as in 1951. The pumpage in 1952 therefore was less than in 1951 and probably on the order of 5,300 acre-feet.

Because of the reduced pumping, the net declines in water level in 1952 were less than in 1951. However, because of the continued declines of water level from year to year, new record low levels were established in nearly all wells observed. The areas in which water levels declined from January 1952 to January 1953 are shown in figure 50. Ground-water levels declined more than 1 foot under 6.7 square miles and more than 2 feet under 2.0 square miles. Comparable areas of like decline in 1951 were 14 and 7.7 square miles respectively. The declines were under 3 areas, centered about 5 miles east of House, 1 mile north of House, and 3 miles north of House. It is in these areas where pumping is greatest. By the end of 1952, water levels in much of the heavily pumped area 3 miles north of House were about 15 feet lower than in April 1941 when records began and 20 feet lower than in 1943 when the highest levels were generally recorded. In the area just north of House the water levels at the end of 1952 were about 10 feet lower than in April 1941 while in the area 5 miles east of House they were about at the same level.

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 51.56 below lsd, July 30, 1952. Records available: 1946-52. Jan. 10, 50.44; Mar. 28, 50.50; May 29, 50.60; July 30, 51.56; Sept. 25, 51.14.

5.29.5.342. William Martin. Drilled unused 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 48.64 below lsd, Oct. 10, 1952. Records available: 1941-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	45.45	45.05	44.76	45.12	45.39	46.00	46.73	47.10	47.85	48.55	48.56	.....
5	45.41	45.02	44.76	45.17	45.47	46.08	46.78	47.14	47.97	48.60	48.53	.....
10	45.33	44.97	44.72	45.18	45.62	46.17	46.81	47.24	48.10	48.64	48.48	48.06
15	.....	44.90	44.74	45.17	45.78	46.33	46.89	47.39	48.22	48.63	48.44	48.01
20	45.20	44.85	44.72	45.11	45.82	46.48	47.03	47.53	48.35	48.60	48.36	47.92
25	45.14	44.82	44.84	45.26	45.86	46.62	47.09	47.66	48.47	48.58	48.29	47.87
30	45.09		45.05	45.37	45.96	46.71	47.10	47.80	48.54	48.58	.....	.....

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 71.09 below lsd, Sept. 25, 1952. Records available: 1945-52. Jan. 8, 64.90; Mar. 28, 64.25; May 29, 68.63; July 30, 69.35; Sept. 25, 71.09.

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 41.67 below lsd, Sept. 25, 1952. Records available: 1942-52. Jan. 11, 39.69; Mar. 28, 40.08; May 29, 40.38; July 30, 40.99; Sept. 25, 41.67.

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 48.64 below lsd, Sept. 25, 1952. Records available: 1941-52. Jan. 10, 45.88; Mar. 28, 45.65; May 29, 46.45; July 30, 47.29; Sept. 25, 48.64.

5.29.9.400. 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 27.53 below lsd, Oct. 1, 1948. Records available: 1941-52. Jan. 10, 26.23, pumping; Mar. 28, 35.12, pumping; May 29, 30.70, pumping; July 30, 30.80, pumping; Sept. 25, 31.62, pumped recently.

5.29.13.121. J. C. Barron. Drilled stock water-table well in Ogallala formation, diameter 14 inches, depth 105 feet. Land-surface datum is 4,702 feet above msl. Highest water level 76.64 below lsd, Mar. 28, 1946; lowest 79.99 below lsd, Sept. 27, 1950. Records available: 1941-52. Jan. 9, 77.87; Mar. 28, 77.69; May 28, 77.59; July 30, 78.15, pumping; Sept. 25, 78.73; Nov. 24, 78.62.

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 22.23 below lsd, July 30, 1952. Records available: 1942-52. Jan. 9, 22.04; Mar. 28, 22.12; May 28, 22.18; July 30, 22.23; Sept. 25, 22.15; Nov. 24, 22.19.

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 45.67 below lsd, Nov. 10, 20, 25, 1952. Records available: 1941-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	42.91	42.59	42.34	.....	.....	43.34	43.87	44.34	44.80	45.31	45.64	45.66
5	.....	42.55	42.28	42.31	.....	43.41	43.96	44.39	44.87	45.36	45.65	45.64
10	42.78	42.49	42.27	42.40	.....	43.48	44.05	44.45	44.97	45.43	45.67	45.61
15	42.73	42.43	42.23	42.49	.....	43.55	44.11	44.53	45.03	45.50	45.66	45.56
20	42.68	42.39	42.22	42.63	.....	43.63	44.17	44.59	45.10	45.57	45.67	45.52
25	42.64	42.35	42.21	42.68	.....	43.73	44.24	44.70	45.18	45.60	45.67	45.49
30	42.60		42.20	42.73	43.31	43.85	44.30	44.76	45.29	45.63	45.66	45.45

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: 1946-52. Jan. 8, 59.81; Mar. 28, 60.62; May 29, 64.84; July 31, 65.35; Sept. 25, 66.16.

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 31.55 below lsd, May 28, 1951. Records available: 1949-52. Jan. 9, 31.00; Mar. 28, 30.98; May 28, 31.01; July 30, 31.20; Nov. 24, 30.95.

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: 1947-52. Jan. 8, 70.55; Mar. 28, 70.58; May 28, 70.56; July 30, 70.62; Sept. 25, 70.64.

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: 1941-52. Jan. 8, 68.52; Mar. 28, 68.72; May 28, 72.23, pumped recently; July 30, 69.95; Sept. 25, 69.31.

5.30.18.331. Jerry Thompson. 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 49.70 below lsd, July 30, 1952. Records available: 1944-52. Jan. 9, 36.81; Mar. 28, 44.23; May 28, 44.03; July 30, 49.70; Sept. 25, 54.46, pumping; Nov. 24, 41.92.

5.30.20.333. J. C. Barron. Drilled stock water-table well in Ogallala formation, diameter 6 (?) inches, depth 30 feet. Highest water level 16.74 below lsd, Mar. 26, 1942; lowest 26.04 below lsd, Sept. 25, 1952. Records available: 1941-52. Jan. 9, 25.81; Mar. 28, 25.80; May 28, 25.98, nearby well being pumped; July 30, 25.47, nearby well being pumped; Sept. 25, 26.04; Nov. 24, 26.13, nearby well being pumped.

5.30.31.442. R. V. Brownd. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, depth 129 feet, cased to 129. Highest water level 98.79 below lsd, Jan. 9, 1951; lowest 100.12 below lsd, Oct. 1, 1948, Mar. 30, 1950. Records available: 1943-52. Jan. 9, 99.19; Mar. 28, 98.99; May 28, 99.95; July 30, 99.19; Sept. 25, 99.49; Nov. 24, 98.78.

6.28.1.232. C. M. Brown. Drilled stock and domestic water-table well in Ogallala formation, reported depth 98 feet. Highest water level 66.32 below lsd, Nov. 30, 1950; lowest 72.93 below lsd, Apr. 1, 1948. Records available: 1947-52. Jan. 11, 66.88, nearby well being pumped; Mar. 28, 66.83; May 29, 66.89, nearby well being pumped; July 30, 66.87; Sept. 25, 66.58.

6.28.24.233. Byers Irwin. Drilled irrigation water-table well in Ogallala formation, diameter 16 inches, reported depth 131 feet, cased from 79 to 131. Highest water level 77.97 below lsd, Mar. 27, 1944; lowest 91.11 below lsd, Sept. 25, 1952. Records available: 1944-52. Jan. 11, 83.04; Mar. 28, 82.87; May 29, 89.43; July 30, 87.37; Sept. 25, 91.11.

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 58.93 below lsd, Sept. 25, 1952. Records available: 1943-52. Jan. 11, 55.11; Mar. 28, 55.05; July 30, 57.31; Sept. 25, 58.93.

6.29.27.332. 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: 1944-52. Jan. 8, 43.44; Mar. 28, 43.43; May 29, 43.46; July 30, 43.50; Sept. 25, 43.54.

6.29.30.112. L. M. McDaniels. Drilled unused water-table well in Ogallala formation. Highest water level 47.98 below lsd, Nov. 20, 1942; lowest 52.80 below lsd, Mar. 28, July 30, 1952. Records available: 1941-52. Jan. 11, 52.38, nearby well being pumped; Mar. 28, 52.80; May 29, 53.05, nearby well being pumped; July 30, 52.80; Sept. 25, 52.70.

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 79.47 below lsd, May 28, 1951. Records available: 1946-52. Jan. 11, 78.82; Mar. 28, 78.62; May 29, 78.60; July 30, 78.72; Sept. 25, 78.87.

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 65.17 below lsd, Sept. 28, 1951. Records available: 1942-52. Jan. 22, 59.04; Mar. 28, 58.48; May 29, 58.39; July 30, 62.64.

6.29.35.314. P. R. Gates. 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: 1945-52. Jan. 8, 39.48; Mar. 28, 39.06; May 29, 43.40; July 30, 41.07; Sept. 25, 44.37.

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. Water levels have been measured since 1931 in the area to determine the effect of pumping and precipitation upon the ground-water body. Records of these measurements have been published annually since 1938 in this series of water-supply papers. In 1952 water levels were measured in 185 wells in January and about 55 of them at bimonthly intervals during the year. Recording gages were maintained on 4 wells. The January measurements, all of which are not reported herein, were used in preparing the map showing the change in water levels in 1952. (See fig. 51.)

Precipitation in 1952 at Portales was near normal while precipitation at three other stations in the area was 50 to 60 percent of normal. Precipitation at Portales was 17.09 inches, 0.83 inch below normal; at a station 7 miles northwest of Portales 10.30 inches, 8.52 inches below normal; at Floyd 9.44 inches, 6.69 inches below normal; and at Arch 8.46 inches, 8.59 inches below normal. Precipitation during the growing season April to September at Portales was 15.16 inches, 1.54 inches above normal. About one-third of this occurred in a heavy local rain in August. Precipitation during the growing season at the other three stations was about 55 to 65 percent of normal.

Electric power records for 471 pumps in 1952 for which records were also available in 1951 indicate that slightly less water was applied to crops in 1952 than in 1951. It is estimated that about 62,000 acre-feet of water was pumped in 1952 to irrigate 35,000 acres of land as compared with 63,000 acre-feet pumped in 1951 to irrigate about the same acreage.

Figure 51 shows the areal change in water levels from January 1952 to January 1953. The declines are the result mainly of pumping for irrigation though in small part are the result of deficient precipitation. In this period the water levels declined more than 1 foot under about 136 square miles, more than 2 feet under about 65 square miles, more than 3 feet under about 24 square miles, more than 4 feet under about 8 square miles, and more than 5 feet under about 2 square miles. The area of decline of more than 4 feet occurred about 7 miles west-northwest of Portales. The largest decline recorded of 6.0 feet was in a well in this area. The areas of decline in 1952 coincided for the most part with the areas of decline in 1951. However, the declines near Portales were considerably smaller in 1952 than in the preceding year as a result of local precipitation during the growing season. Less water was pumped for irrigation.

By the end of 1952 water levels in most of the area where there is appreciable pumping reached the lowest winter levels since records began in 1932. In some outlying areas water levels were still slightly above the record low levels observed in 1941 prior to the heavy precipitation in that year. In the heavily pumped area from Portales to about 6 miles northwest water levels have declined about 25 feet since records began in 1932. About 20 feet of this decline has occurred since 1940.

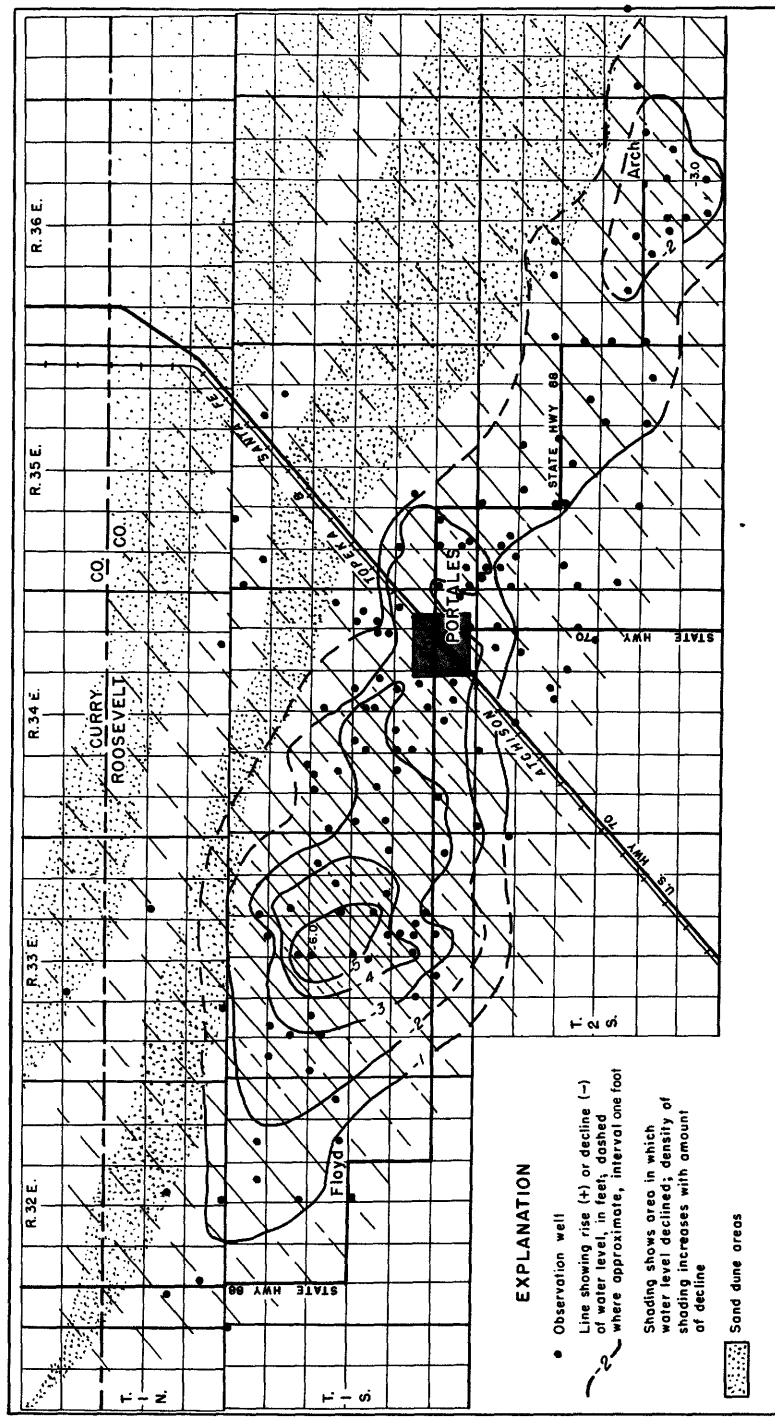


Figure 51.--Change in ground-water level from January 1952 to January 1953 in Portales Valley, Roosevelt County, N. Mex.

Portales Valley

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: 1931-52. Jan. 27, 16. 37; Mar. 27, 16. 15; May 28, 16. 82, pumping; July 29, 17. 29, pumping; Sept. 23, 17. 32; Nov. 24, 17. 00.

1N. 32. 27. 321. Carl Essary. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 105 feet. Highest water level 44. 66 below lsd, Mar. 30, 1950; lowest 49. 64 below lsd, May 25, 1951. Records available: 1947-52. Jan. 27, 45. 82; Mar. 27, 45. 48; May 27, 45. 43; July 29, 69. 36, pumping; Sept. 23, 47. 90; Nov. 24, 46. 44.

1N. 33. 36. 400a. A. C. Woodburn. Dug observation water-table well in valley fill, diameter 14 inches, depth 10 feet. Highest water level 1. 61 above lsd, Apr. 23, 1942; lowest dry at 6. 70, Nov. 15, 1952. Records available: 1931-52.

Daily highest water level from recorder graph*

Day	Jan.	Feb.	Mar.	Apr.	May	June
1	6. 45	6. 44	6. 45	6. 54	6. 47	6. 67
5	6. 44	6. 44	6. 45	6. 54	6. 48	6. 69
10	6. 44	6. 44	6. 45	6. 55	6. 51	6. 69
15	6. 44	6. 43	6. 47	6. 55	6. 56	f6. 70
20	6. 45	6. 44	6. 48	6. 54	6. 61	....
25	6. 45	6. 44	6. 49	6. 49	6. 63	....
30	6. 44		6. 54	6. 47	6. 67	....

* No record for July, August, September, October, November, and December.
f Dry.

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. Records available: 1931-36, 1938-52. Jan. 24, 14. 00, pumping; Mar. 27, 11. 40; May 27, 13. 18, pumping; July 29, 10. 99; Nov. 22, 14. 06, pumping.

1. 31. 1. 222. W. G. Griffith. Formerly Bennett & 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 78. 69 below lsd, Sept. 27, 1951. Records available: 1944-52. Jan. 27, 77. 77; Mar. 27, 76. 47; May 28, 76. 76; July 29, 77. 38; Sept. 23, 77. 38; Nov. 24, 76. 83.

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 44. 60 below lsd, Sept. 27, 1951. Records available: 1948-52. Jan. 27, 39. 58; Mar. 27, 39. 62; May 27, 43. 24, pumped recently; Sept. 23, 43. 98; Nov. 24, 42. 42.

1. 32. 10. 331. J. R. Meadows. Drilled irrigation water-table well in valley fill, diameter 14 to 12 inches, reported depth 122 feet, cased to 122. Highest water level 45. 23 below lsd, Jan. 15, May 29, 1947; lowest 50. 57 below lsd, Sept. 23, 1952. Records available: 1946-52. Jan. 27, 48. 57; Mar. 27, 48. 55; May 27, 49. 24; July 29, 74. 27, pumping; Sept. 23, 50. 57; Nov. 24, 50. 14.

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 57. 49 below lsd, Sept. 23, 1952. Records available: 1944-52. Jan. 27, 52. 35; Mar. 27, 52. 05; May 27, 55. 00; July 29, 55. 60, nearby well being pumped; Sept. 23, 57. 49; Nov. 22, 53. 94.

1. 33. 7. 111. J. F. Holman. Formerly E. L. Sisk. Drilled irrigation water-table well in valley fill, reported depth 90 feet. Highest water level 12. 15 below lsd, Nov. 24, 1942; lowest 31. 81 below lsd, Sept. 23, 1952. Records available: 1940-52. Jan. 27, 24. 92; Mar. 27, 29. 24, pumping; May 27, 45. 68, pumped recently; Sept. 23, 31. 81; Nov. 22, 27. 01.

1. 33. 10. 313a. Jim Allen. Drilled irrigation water-table well in valley fill. Highest water level 22. 49 below lsd, Jan. 15, 1947; lowest 40. 36 below lsd, Nov. 22, 1952. Records available: 1946-52. Jan. 26, 33. 60; May 27, 39. 14; Nov. 22, 40. 36.

1. 33. 12. 144a. Woodburn Bros. Drilled irrigation water-table well in valley fill, diameter 16 inches, depth 112 feet, cased 0-2, 53-112, perforations 53-112. Highest water level 53. 93 below lsd, May 27, 1952. Records available: 1951-52. Nov. 28, 1951, 57. 28, pumped recently; Jan. 24, 1952, 68. 62, pumping; Mar. 26, 68. 42, pumping; May 27, 53. 93; July 29, 68. 60, pumping; Sept. 23, 70. 50, pumping.

1.33.14.331c. J. E. Stacey. Drilled irrigation water-table well in valley fill. Highest water level 19.37 below lsd, Jan. 16, 1945; lowest 43.87 below lsd, Sept. 23, 1952. Records available: 1944-52. Jan. 26, 35.60; Mar. 27, 61.31, pumping; May 27, 41.51; July 29, 67.00, pumping; Sept. 23, 43.87; Nov. 22, 41.55.

1.33.15.111. Anderson Carter. Drilled irrigation water-table well in valley fill. Highest water level 31.22 below lsd, July 27, 1950; lowest 35.26 below lsd, May 27, 1952. Records available: 1950-52. Jan. 26, 33.16; Mar. 27, 34.75; May 27, 35.26; July 29, 48.76, pumped recently; Sept. 23, 79.58, pumping.

1.33.17.211. 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 36.84 below lsd, July 29, 1952. Records available: 1945-52. Jan. 27, 29.12; Mar. 27, 29.22; May 27, 31.35; July 29, 36.84; Sept. 23, 36.39; Nov. 22, 33.19.

1.33.28.311. J. C. Rolan. Drilled irrigation water-table well in valley fill, diameter 15 inches, reported depth 116 feet, cased to 115. Highest water level 39.21 below lsd, Mar. 26, 1943; lowest 54.55 below lsd, Sept. 23, 1952. Records available: 1938-52. Jan. 25, 49.99; Mar. 27, 52.39; May 28, 72.50, pumping; July 29, 70.64, pumping; Sept. 23, 54.55; Nov. 22, 53.22.

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 37.09 below lsd, Nov. 20, 1940. Records available: 1940-52. Jan. 25, 34.50; Mar. 27, 34.53; May 28, 34.95; July 29, 35.36; Sept. 22, 36.41, pumping; Nov. 22, 36.39, pumping.

1.33.34.211. R. T. Bilberry. Drilled irrigation water-table well in valley fill, diameter 12 inches, depth 100 feet. Highest water level 19.54 below lsd, Mar. 26, 1943; lowest 44.75 below lsd, Sept. 22, 1952. Records available: 1939-52. Jan. 25, 35.91; Mar. 27, 36.19; May 28, 41.50; July 29, 58.25, pumping; Sept. 22, 44.75; Nov. 22, 41.37.

1.34.13.412. Ben Donathan. Drilled unused water-table well in valley fill, diameter 15 inches, depth 157 feet. Highest water level 51.43 below lsd, Aug. 6, 1944; lowest 56.77 below lsd, May 20, 1941. Records available: 1938-52. Jan. 23, 54.85. Measurement discontinued.

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 60.71 below lsd, Sept. 23, 1952. Records available: 1945-52. Jan. 23, 55.80; Mar. 26, 56.06; May 27, 57.70; July 29, 59.70; Sept. 23, 60.71; Nov. 22, 58.35.

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 45.96 below lsd, Sept. 26, 1951. Records available: 1947-52. Jan. 23, 41.97; Mar. 26, 44.50; May 27, 45.27; July 29, 49.37, nearby well being pumped; Sept. 23, 48.74, pumping; Nov. 22, 45.79.

1.34.22.222. Mrs. A. J. Goodwin. Drilled unused water-table well in valley fill, diameter 12 inches, reported depth 98 feet. Highest water level 38.09 below lsd, Mar. 27, 1943; lowest dry at 46.50, Jan. 23, 1952. Records available: 1931-52. Jan. 23, dry at 46.50. Measurement discontinued.

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 52.67 below lsd, Sept. 23, 1952. Records available: 1948-52. Jan. 23, 47.02; Mar. 26, 47.02; May 27, 49.37; July 29, 52.42; Sept. 23, 52.67; Nov. 22, 50.22.

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 52.74 below lsd, Sept. 20, 1952. Records available: 1931-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	48.17	47.83	47.43	47.93	48.10	49.90	51.20	51.40	52.38	52.59	.....	51.37
5	48.06	47.77	47.54	48.32	48.53	50.18	51.14	51.64	52.44	52.50	.....	51.26
10	47.99	47.77	47.53	48.54	48.60	50.22	51.08	51.90	52.60	52.36	.....	51.13
15	47.92	47.67	47.65	48.50	48.70	50.57	50.84	52.01	52.70	52.27	.....	50.97
20	47.78	47.62	47.65	48.27	48.86	50.78	51.00	52.03	52.74	52.15	e51.62	50.84
25	47.72	47.68	47.59	48.19	49.56	51.13	51.24	52.17	52.64	e52.02	51.52	50.83
30	47.89		47.94	48.06	49.73	51.23	51.24	52.34	52.61	.....	51.58	.....

e Estimated.

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 47.19 below lsd, Sept. 22, 1952. Records available: 1946-52. Jan. 22, 43.22; Mar. 25, 43.10; May 26, 45.00; July 28, 46.32; Sept. 22, 47.19; Nov. 20, 46.12.

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: 1935-52. Jan. 16, 43.90; Mar. 25, 44.95; May 27, 44.93; July 25, 44.93; Nov. 21, 44.73.

1.35.6.131a. F. K. Montague. Dug irrigation water-table well in valley fill. Highest water level 7.27 below lsd, May 26, 1951; lowest 9.18 below lsd, Nov. 21, 1952. Records available: 1950-52. Jan. 16, 8.07; Mar. 25, 7.94; May 27, 8.04, possible discrepancy of a few tenths of a foot between present and previous land-surface datum; July 25, 8.36; Sept. 24, 9.08; Nov. 21, 9.18.

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: 1931-52. Jan. 16, 12.84; Mar. 25, 12.92; May 27, 12.98; July 25, 13.05; Sept. 24, 13.15; Nov. 21, 13.25.

1.35.11.241. A. Hobbs Estate. Formerly Eunice McPherson. 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: 1940-52. Jan. 16, 16.55; Mar. 25, 16.60; May 27, 16.65; July 25, 16.81; Nov. 21, 16.83.

1.35.27.344a. H. J. McCroary. Drilled unused water-table well in valley fill, diameter 6 inches. Highest water level 29.02 below lsd, Jan. 13, 1951; lowest 31.44 below lsd, July 28, 1948. Records available: 1945-52. Jan. 17, 30.46; Mar. 26, 30.68; May 26, 38.99, pumping; July 25, 42.40, pumping; Nov. 21, 40.83, pumping.

1.35.28.143. Travis Culpepper. Formerly C. A. Kerby. 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 52.68 below lsd, Sept. 21, 1940. Records available: 1935-52. Jan. 17, 48.17; Mar. 26, 48.77; May 26, 49.12; July 25, 50.04; Sept. 21, 50.50; Nov. 21, 50.15.

1.36.5.300. W. H. McDaniel. Drilled stock water-table well in valley fill, diameter 6 inches. Highest water level 32.84 below lsd, Jan. 28, 1943; lowest 36.01 below lsd, Jan. 16, 1941. Records available: 1939-52. Jan. 16, 34.22, pumping; Mar. 25, 34.58, pumping; May 27, 34.50, pumping; July 25, 34.26, pumping; Sept. 24, 34.10, pumping; Nov. 21, 34.06.

1.36.16.100. State of New Mexico. Drilled stock water-table well in valley fill, diameter 8 (?) inches. Highest water level 14.14 below lsd, Nov. 25, 1941; lowest 24.17 below lsd, Sept. 22, 1940. Records available: 1939-52. Jan. 16, 22.74, pumping; May 27, 32.30, pumping; July 25, 20.79, pumping; Sept. 24, 20.55; Nov. 21, 25.66, pumping.

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 62.34 below lsd, Sept. 20, 1952. Records available: 1931-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	56.55	.....	.....	56.58	56.74	59.22	60.47	61.45	60.83	61.15	.....	59.40
2	56.53	.....	.....	56.96	56.72	59.19	60.43	61.48	60.86	61.08	.....	59.37
3	56.48	.....	.....	57.18	56.73	59.19	60.42	61.49	60.88	61.03	.....	59.33
4	56.45	.....	.....	57.29	56.83	59.26	60.38	61.57	60.87	60.96	.....	59.32
5	56.41	.....	.....	57.18	56.82	59.32	60.36	61.70	.....	60.90	.....	59.22
6	56.34	.....	.....	57.09	57.19	59.30	60.43	61.88	.....	60.88	.....	59.18
7	56.30	.....	.....	57.05	57.46	59.32	60.38	62.02	.....	60.84	.....	59.12
8	56.30	.....	.....	57.13	57.58	59.43	60.30	62.17	.....	60.79	.....	59.10
9	56.35	.....	.....	57.19	57.85	59.41	60.23	62.07	.....	60.82	.....	59.10
10	56.27	.....	.....	57.18	57.94	59.90	60.18	61.80	.....	60.80	.....	59.02
11	56.20	.....	.....	57.10	57.77	60.10	60.15	61.68	.....	60.83	.....	58.99
12	56.20	.....	.....	57.10	57.74	60.00	60.00	61.60	.....	60.78	.....	58.98
13	56.13	.....	.....	57.09	58.13	60.00	59.98	61.53	.....	60.74	.....	59.00
14	56.13	.....	.....	57.02	58.19	60.34	.....	61.41	.....	60.75	.....	58.91
15	56.15	.....	.....	57.02	58.25	60.23	.....	61.30	.....	60.72	.....	58.88
16	56.10	.....	.....	57.53	58.31	60.21	59.85	61.22	.....	60.70	.....	58.87
17	56.12	.....	.....	57.48	58.40	60.62	59.87	61.12	.....	60.68	h59.93	58.83
18	56.05	.....	.....	57.26	58.24	60.89	60.08	61.03	.....	60.64	59.98	58.78
19	56.08	.....	.....	57.13	58.20	60.89	60.39	60.98	.....	60.60	59.91	58.74
20	h56.02	e55.92	.....	57.03	58.58	60.94	60.34	60.97	62.34	60.58	59.89	58.70

2.34.2.233--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
21	56.01	.....	.....	56.99	58.69	60.96	60.27	60.97	62.10	60.57	59.90	58.63
22	56.02	.....	.....	56.97	58.82	60.79	60.70	60.93	61.90	60.55	59.86	58.68
23	56.05	.....	.....	56.89	58.77	60.78	60.94	60.89	61.76	60.54	59.75	58.62
24	55.97	.....	.....	56.82	58.73	60.87	60.85	60.81	61.62	60.52	59.68	58.61
25	55.94	.....	56.45	56.78	58.77	60.87	60.79	60.78	61.52	60.52	59.68	58.57
26	55.99	.....	56.39	56.73	58.72	60.89	60.75	61.12	61.40	60.50	59.63	58.53
27	.....	.....	56.45	56.67	59.18	60.79	60.64	61.08	61.30	60.48	59.58	58.50
28	.....	.....	56.57	56.67	59.28	60.70	60.63	61.05	61.15	60.47	59.52	58.47
29	.....	.....	56.52	56.68	59.22	60.60	60.68	60.98	61.08	60.44	59.48	58.42
30	.....		56.48	56.60	59.19	60.55	60.82	60.95	61.05	.....	59.40	58.40
31	.....		56.48		59.19		61.26	60.86		.....		58.37

e Estimated.
h Tape measurement.

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 13.68 below lsd, Sept. 24, 1951. Records available: 1939-52. Jan. 22, 13.49; Mar. 25, 13.33; May 26, 13.43; July 28, 12.77; Nov. 20, 5.02.

2.34.10.431. 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 36.39 below lsd, July 28, 1952. Records available: 1945-52. Jan. 22, 33.63; Mar. 25, 33.73; July 28, 36.39; Sept. 21, 35.89; Nov. 20, 34.28.

2.34.13.133. L. J. Sanders. Dug and drilled irrigation water-table well in valley fill, diameter 14 inches, depth 112 feet, cased to 80. Highest water level 17.92 below lsd, May 12, 1944; lowest 37.09 below lsd, Nov. 20, 1952. Records available: 1944-52. Jan. 22, 26.56; May 26, 28.34; Sept. 21, 29.97; Nov. 20, 37.09.

2.35.4.111. E. S. Weber. Drilled irrigation water-table well in valley fill. Highest water level 12.94 below lsd, Jan. 29, 1942; lowest 41.06 below lsd, Sept. 21, 1952. Records available: 1935, 1938-52. Jan. 18, 27.79; Mar. 25, 28.59; May 26, 34.07; July 25, 46.05, pumping; Sept. 21, 41.06; Nov. 21, 32.70, pumped recently.

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 47.03 below lsd, Sept. 21, 1952. Records available: 1931-52. Jan. 18, 41.01; Mar. 25, 40.94; May 26, 43.46; July 25, 45.33; Sept. 21, 47.03; Nov. 20, 45.04.

2.35.6.443a. J. A. Vandevender. Drilled irrigation water-table well in valley fill, diameter 14 inches. Highest water level 27.86 below lsd, Mar. 28, 1947; lowest 39.72 below lsd, May 24, 1950. Records available: 1947-52. Jan. 18, 33.19; Mar. 25, 63.55, pumping; May 26, 64.23, pumping; July 28, 43.30, pumped recently; Sept. 21, 38.46; Nov. 20, 34.28.

2.35.9.122. L. D. Griffith. Drilled irrigation water-table well in valley fill. Highest water level 20.28 below lsd, Jan. 13, 1951; lowest 26.38 below lsd, July 28, 1952. Records available: 1946-52. Jan. 18, 23.53; Mar. 25, 24.39; May 26, 26.07; July 28, 26.38; Nov. 20, 25.14.

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 4.37 below lsd, Sept. 16, 1947. Records available: 1939-52. Jan. 21, 2.31; Mar. 26, 2.14; May 26, 3.19; July 28, 4.10; Sept. 24, 4.33; Nov. 20, 3.87.

2.35.15.131. Portales First National Bank. Dug observation water-table well in valley fill, diameter 2 inches, depth 8 feet. Highest water level 0.02 above lsd, Jan. 29, 1942; lowest dry at 5.86, Nov. 20, 1952. Records available: 1939-52. Jan. 19, 4.32; Mar. 26, 4.19; May 26, 5.00; July 28, 5.85; Nov. 20, dry at 5.86.

2.35.16.333. A. J. Cline. Dug observation water-table well in valley fill, diameter 2 inches, depth 14 feet. Highest water level 3.77 below lsd, Nov. 26, 1941; lowest 13.83 below lsd, May 27, 1948. Records available: 1939-52. Jan. 19, 8.97; Mar. 25, 9.42; May 26, 8.86; July 28, 9.50; Sept. 21, 9.23; Nov. 20, dry at 9.56.

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 9.38 below lsd, Sept. 24, 1951. Records available: 1939-52. Jan. 19, 8.32; Mar. 25, 8.30; May 26, 8.30; July 28, 7.45; Sept. 21, 7.92; Nov. 20, 8.49.

2.35.19.134. Roy Faircloth. Drilled irrigation water-table well in valley fill, diameter 10 inches, depth 20 feet. Highest water level 25.87 below lsd, Nov. 27, 1950, Jan. 12, 1951; lowest 32.75 below lsd, Sept. 21, 1952. Records available: 1946-52. Jan. 19, 27.46; Mar. 25, 27.57; May 26, 27.73; Sept. 21, 32.75; Nov. 20, 29.28.

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 25.52 below lsd, Sept. 21, 1952. Records available: 1949-52. Jan. 19, 22.81; Mar. 26, 22.78; May 26, 47.63, pumping; July 28, 23.88; Sept. 21, 25.52; Nov. 20, 24.68.

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 29.38 below lsd, Sept. 29, 1948. Records available: 1948-52. Jan. 21, 23.05; Mar. 26, 23.81; May 26, 45.48, pumping; July 28, 24.98; Sept. 24, 25.79; Nov. 20, 25.24.

2.36.7.332. Loren Johnson. Drilled irrigation water-table well in valley fill, diameter 14 inches, depth 133 feet. Highest water level 15.02 below lsd, Sept. 26, 1950; lowest 21.26 below lsd, May 29, 1948. Records available: 1944-52. Jan. 19, 17.87; Mar. 26, 18.13; May 27, 18.26; July 28, 18.60; Nov. 20, 19.32.

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 22.19 below lsd, May 29, 1948. Records available: 1948-52. Jan. 19, 17.60; Mar. 26, 17.78; May 27, 19.38; July 28, 41.14, pumping; Nov. 20, 43.45, pumping.

2.36.18.341. E. R. McPherson. Drilled unused water-table well in valley fill. Highest water level 9.07 below lsd, Nov. 26, 1941; lowest 19.61 below lsd, Mar. 30, 1932. Records available: 1931-52. Jan. 22, 14.00; Mar. 26, 14.30. Measurement discontinued.

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: 1931-52. Jan. 21, 13.57; Mar. 26, 13.60; May 26, 14.10; July 28, 14.63; Sept. 24, 15.61; Nov. 22, 15.60.

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 20.68 below lsd, Sept. 24, 1952. Records available: 1947-52. Jan. 21, 14.21; Mar. 26, 14.97; May 26, 18.37; July 28, 17.81; Sept. 24, 20.68; Nov. 22, 17.29.

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 19.38 below lsd, Oct. 3, 1948, Sept. 25, 1952. Records available: 1932-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.34	15.12	15.28	15.50	15.69	16.81	18.01	18.11	19.06	19.24	18.62	18.08
5	15.31	15.12	15.31	15.56	15.64	17.00	17.94	18.26	19.18	19.16	18.55	18.04
10	15.29	15.11	15.31	15.68	15.92	17.21	17.89	18.45	19.33	19.11	18.45	17.99
15	15.27	15.10	15.41	15.76	16.01	17.49	17.73	18.50	19.24	18.98	18.37	17.93
20	15.22	15.10	15.47	15.88	16.11	17.73	17.57	18.54	19.36	18.86	18.29	17.87
25	15.19	15.25	15.50	15.83	16.45	17.89	17.85	18.72	19.38	18.76	18.16	.....
30	15.12		15.48	15.71	16.70	18.02	18.03	18.97	19.26	18.66	18.10	17.77

2.36.30.111. L. B. Thornton. Dug observation water-table well in valley fill, diameter 2 inches, depth 10 feet. Highest water level 0.45 below lsd, Nov. 26, 1941; lowest 7.16 below lsd, Sept. 29, 1948. Records available: 1941-52. Jan. 21, 4.02; Mar. 26, 3.81; May 26, 4.38; July 28, 5.55; Nov. 20, dry at 6.12.

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 19.06 below lsd, Nov. 20, 1948. Records available: 1947-52. Jan. 21, 16.06; Mar. 26, 16.12; May 26, 17.20; Sept. 24, 18.64; Nov. 22, 18.46.

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 13.90 below lsd, Sept. 24, 1952. Records available: 1947-52. Jan. 21, 9.69; Mar. 26, 9.36; May 26, 10.25; Sept. 24, 13.90; Nov. 22, 12.63.

2.37.30.134. 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 21.54 below lsd, Nov. 22, 1952. Records available: 1949-52. Jan. 20, 15.49; Mar. 26, 20.43; July 26, 21.17; Nov. 22, 21.54.

Santa Fe and Torrance Counties

Estancia Valley.--Estancia Valley, a closed drainage and ground-water basin approximately 50 miles long in its north-south dimension, extends from the southern part of Santa Fe County to south-central Torrance County. About 80 percent of the irrigated area of the valley is in Torrance County. Water levels were measured in 116 wells in February and in about 50 wells in May, August, and November. A recording gage has been maintained since December 1945 on a well about 3 miles northwest of Estancia. The February water-level measurements, not included in this report, were used in preparing the map which shows the net change in water level in 1952. (See fig. 52.)

Recharge to the ground-water body in Estancia Valley is derived principally from precipitation within the valley and on the surrounding higher land. The distribution of rainfall during the year is fully as important to an interpretation of the fluctuations of ground-water levels as the total annual precipitation. If precipitation during the growing season is deficient, the amount of water that must be pumped for irrigation is greater than normal, but if the precipitation is above normal during that period less water needs to be pumped. Precipitation in 1952 averaged about 75 percent of normal at the five stations in the area for which there are complete records. Generally, the precipitation in the northern part of the area was less than in 1951 while that in the southern part was greater. The precipitation at Estancia was 9.86 inches, 2.73 inches below normal; at McIntosh 7.99 inches, 5.25 inches below normal; at Mountainair 14.08 inches, 1.56 inches below normal; at Otto 7.05 inches, 4.53 inches below normal; and at Tajique 16.50 inches, 3.04 inches below normal. Precipitation during the growing season from April to September averaged about 80 percent of normal. The deficiencies are based on new normals as determined by the U. S. Weather Bureau for the period through 1950. The precipitation records indicate that the total recharge to the ground-water body in 1952 was less than average, and the amount of ground water required for the irrigation of crops was above average.

On the basis of a partial field check it is estimated that about 21,000 acres of land in Estancia Valley were irrigated from wells and that about 30,000 acre-feet of water were pumped in 1952. During 1952 there was a slight increase in acreage over the previous year in the area north of Moriarty and in the area about 8 miles east of Estancia. In 1951 both annual precipitation and precipitation in the growing season were considerably below normal, and it was estimated that about 40,000 acre-feet of ground water were pumped in that year to irrigate 20,000 acres of land. Because of the reduction in pumping in 1952 the net declines in water level were generally less than in 1951, especially in the southern part of the valley where the reduction in pumpage was probably greatest. The areas in Estancia Valley in which ground-water levels declined from February 1952 to February 1953 are shown on figure 52. Ground-water levels declined more than 1 foot under a total area of about 104 square miles in the valley in 1952 as compared with a like decline under a total area of about 197 square miles in 1951.

The greatest net decline in 1952, as in previous years, occurred in the area of heavy pumping about 10 miles north of Estancia where the ground-water levels declined more than 2 feet under an area of about 25 square miles, more than 3 feet under about 11 square miles, and more than 4 feet under an area of about 1 square mile. The maximum decline recorded in that area was 4.3 feet. The center of the area of the greatest net decline in 1952 was about 5 miles northeast of the center of the area of the greatest net decline in 1951. In the area of heavy pumping about 7 miles southwest of Estancia ground-water levels declined less than 1 foot in all of the area, whereas in the preceding year ground-water levels declined more than 2 feet under an area of about 24 square miles with a maximum recorded decline of 4.4 feet. In the northern part of the valley, in southern Santa Fe County, ground-water levels declined more than 1 foot in 1952 under an area of about 18 square miles with a maximum decline of 1.4 feet recorded, essentially the same as noted in that area in the preceding year. The water levels in the wells in the irrigated area southwest of Willard in 1952 showed a rise of less than half a foot. In 1951 the water levels in these wells declined an average of more than half a foot. In the period from January 1947 to January 1953 when the major part of development for irrigation had taken place, the ground-water levels had declined in three main areas. In a small area about 7 miles southwest of Estancia water levels have declined a maximum of 12 feet in the 6-year period while in a small area 3 miles northwest of Estancia the declines have been about 9 feet.

Ground-water levels throughout much of the irrigated parts of the valley can be expected to continue to decline with continued pumping. The amount of annual decline will depend for the most part upon the amount of water pumped which in turn is dependent upon precipitation and the amount of irrigated land. In years of reduced pumping, such as 1952, the declines will be reduced. Also as the effects of pumping spread to more distant areas, the rate of decline for a given pumpage should decrease somewhat in the future. Temporary rises of water levels will occur in particular areas when precipitation is above normal and pumpage is sharply reduced.

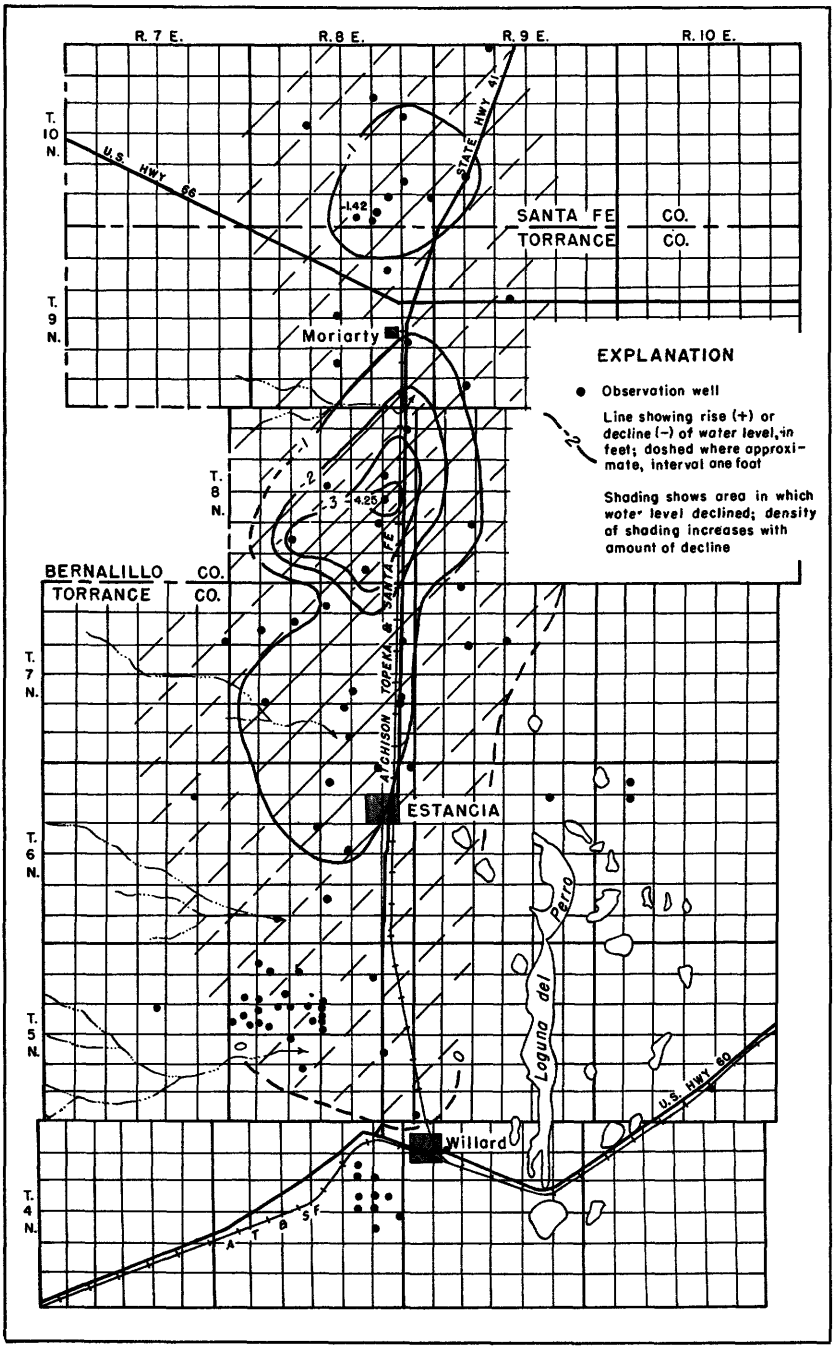


Figure 52. --Change in ground-water level from February 1952 to February 1953 in Estancia Valley, Torrance and Santa Fe Counties, N. Mex.

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 140.30 below lsd, Feb. 14, 1952. Records available: 1948-52. Feb. 14, 140.30; Aug. 20, 138.89.

10.7.23.234. Ray Bassett. Drilled irrigation water-table (?) well in Magdalena(?) group, diameter 16 inches, reported depth 206 feet, cased to 206. Highest water level 143.00 below lsd, Feb. 17, 1949; lowest 146.88 below lsd, Nov. 20, 1951. Records available: 1948-52. Feb. 14, 146.14. Measurement discontinued.

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: 1950-52. Feb. 14, 89.50; May 26, 93.19; Aug. 20, 96.61.

10.8.17.424. Kenneth Martin. 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: 1949-52. Feb. 14, 137.12; Aug. 20, 138.15, pumped recently.

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 83.36 below lsd, Aug. 23, 1951. Records available: 1948-52. Feb. 14, 76.61; May 27, 89.79, pumping; Aug. 19, 90.11, pumping; Nov. 28, 80.21.

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 72.31 below lsd, Aug. 1, 1950. Records available: 1948-52. Feb. 14, 68.38; May 27, 97.84, pumping; Aug. 19, 97.44, pumping; Nov. 28, 71.95.

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 72.92 below lsd, Nov. 1, 1950. Records available: 1948-52. Feb. 14, 67.61; May 27, 103.80, pumping; Aug. 19, 89.00, pumping; Nov. 28, 71.22.

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 46.76 below lsd, Aug. 23, 1951. Records available: 1947-52. Feb. 14, 39.98; Nov. 28, 43.56.

10.9.21.431. Everett Shockey. Drilled stock and domestic water-table well in valley fill, diameter 7 inches, reported depth 101 feet, cased to 100. Land-surface datum is 6,210 feet above msl. Highest water level 24.63 below lsd, Feb. 20, 1947; lowest 27.95 below lsd, Feb. 13, 1952. Records available: 1946-52. Feb. 13, 27.95.

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 62.43 below lsd, Aug. 23, 1951. Records available: 1949-52. Feb. 13, 59.22; May 26, 65.85, pumping; Aug. 30, 67.50, pumping; Nov. 28, 61.85.

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 82.03 below lsd, May 28, 1952. Records available: 1950-52. Feb. 7, 81.81; May 28, 82.03; Aug. 7, 82.02.

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 83.83 below lsd, Aug. 7, 1952. Records available: 1950-52. Feb. 7, 83.43; May 28, 83.76; Aug. 7, 83.83.

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 71.69 below lsd, Aug. 21, 1951. Records available: 1950-52. Feb. 7, 71.35; May 28, 71.65.

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 81.32 below lsd, May 28, 1952. Records available: 1949-52. Feb. 7, 79.97; May 28, 81.32; Nov. 28, 80.16.

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: 1950-52. Feb. 7, 71.50; May 28, 94.66, pumping; Aug. 7, 75.46; Nov. 28, 71.50.

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: 1950-52. Feb. 7, 80.28; May 28, 81.31; Aug. 7, 81.75.

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 93.05 below lsd, Aug. 21, 1951. Records available: 1950-52. Feb. 7, 92.47; May 28, 92.90; Aug. 7, 93.01.

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 94.93 below lsd, Aug. 21, 1951. Records available: 1950-52. Feb. 7, 94.39; May 28, 94.70; Aug. 7, 94.90.

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 86.97 below lsd, May 28, 1952. Records available: 1949-52. Feb. 7, 85.38; May 28, 86.97; Aug. 7, 101.88, pumping; Nov. 28, 85.64.

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: 1941-52. Feb. 8, 17.46; May 28, 17.51; Aug. 7, 17.57.

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 64.87 below lsd, Nov. 19, 1952. Records available: 1947-52. Feb. 19, 62.49; May 27, 96.07, pumping; Nov. 19, 64.87.

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 83.45 below lsd, Aug. 22, 1951. Records available: 1948-52. Feb. 20, 72.27; Aug. 21, 82.20, pumped recently; Nov. 19, 75.84.

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 33.82 below lsd, Nov. 15, 1951. Records available: 1947-52. Feb. 20, 33.87, pumped recently; May 28, 47.86, nearby well being pumped; Aug. 21, 60.19, pumping; Nov. 19, 33.09.

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 29.31 below lsd, Nov. 15, 1951. Records available: 1945-52. Feb. 20, 24.76; May 28, 38.30, nearby well being pumped; Aug. 22, 65.31, pumping; Nov. 19, 28.78.

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 59.79 below lsd, Nov. 19, 1952. Records available: 1945-52. Feb. 22, 56.15; May 28, 66.55, pumped recently; Nov. 19, 59.79.

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: 1947-52. Feb. 19, 41.07, pumped recently; May 28, 43.35; Aug. 22, 65.41, pumping; Nov. 19, 65.25, pumping.

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 55.62 below lsd, Aug. 22, 1951. Records available: 1946-52. Feb. 22, 49.18; May 28, 51.93; Aug. 22, 54.06; Nov. 19, 51.42.

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 40.92 below lsd, Nov. 19, 1952. Records available: 1946-52. Feb. 7, 38.49; Aug. 30, 40.36; Nov. 19, 40.92.

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: 1946-52. Feb. 7, 22.92; May 28, 26.11; Aug. 7, 56.95, pumping; Nov. 19, 23.78.

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: 1941-52. Feb. 7, 32.78; May 28, 32.91; Aug. 7, 32.61; Nov. 19, 32.69.

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: 1948-52. Feb. 18, 24.28; May 27, 24.50; Aug. 7, 24.81; Nov. 18, 24.88.

6.8.3.221. Ellison Timmins. Drilled unused water-table well in valley fill, diameter 18 to 10 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 36.14 below lsd, Aug. 23, 1951. Records available: 1941-52. Feb. 18, 32.33; Aug. 7, 32.71; Nov. 18, 33.95.

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 33.10 below lsd, Nov. 19, 1952. Records available: 1941-52. Feb. 19, 31.90; May 27, 31.85; Aug. 21, 32.45; Nov. 19, 33.10.

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: 1941-52. Feb. 19, 23.75; May 27, 24.00; Aug. 21, 24.32; Nov. 19, 34.79.

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 32.66 below lsd, Aug. 22, 1951. Records available: 1947-52. Feb. 19, 29.45; Nov. 19, 30.51.

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 8.45 below lsd, Nov. 18, 1952. Records available: 1949-52. Feb. 18, 7.62; Nov. 18, 8.45.

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: 1949-52. Feb. 18, 10.25; May 27, 8.88; Aug. 20, 5.87, nearby well being pumped; Nov. 18, 9.54.

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 16.39 below lsd, May 27, 1952. Records available: 1950-52. Feb. 18, 13.77; May 27, 16.39.

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: 1949-52. May 27, 11.68.

6.10.8.112. J. M. Milburn and 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: 1948-52. Feb. 18, 11.38; May 27, 13.76; Nov. 18, 11.69.

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 46.70 below lsd, Aug. 7, 1952. Records available: 1941-52. Feb. 18, 46.23; May 27, 46.58; Aug. 7, 46.70; Nov. 18, 46.32.

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 30.38 below lsd, Aug. 22, 1952. Records available: 1941-52. Feb. 20, 29.03; May 27, 33.97, pumping; Aug. 22, 30.38; Nov. 18, 35.34, pumping.

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: 1947-52. Feb. 15, 22.50; May 27, 29.74, nearby well being pumped; Aug. 20, 31.28, nearby well being pumped; Nov. 18, 25.50.

7.8.20.240. C. A. Burns. Drilled unused water-table well in valley fill. Highest water level 86.70 below lsd, Mar. 24, 1948; lowest 90.57 below lsd, Feb. 18, 1952. Records available: 1948-52. Feb. 18, 90.57. 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.

7.8.24.431. R. T. Floyd. Drilled irrigation water-table well in valley fill, diameter 12 inches, reported depth 275 feet. Highest water level 21.77 below lsd, May 28, 1947; lowest 34.31 below lsd, Aug. 22, 1952. Records available: 1947-52. Feb. 18, 22.69; May 27, 28.72; Aug. 22, 34.31; Nov. 18, 25.48.

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 27.27 below lsd, Aug. 3, 1952. Records available: 1941-52.

Daily highest water level from recorder graph*

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	23.13	22.87	.....	.....	25.79	26.31	27.18	.....	.....	.....	.....
2	.....	23.06	22.87	.....	.....	25.83	26.34	27.24	.....	.....	.....	.....
3	.....	23.09	22.89	.....	.....	25.87	26.37	27.27	.....	.....	.....	.....
4	.....	.....	22.89	.....	.....	25.90	26.40	27.25	.....	.....	.....	.....
5	.....	.....	22.89	.....	.....	25.94	26.40	27.17	.....	.....	.....	.....
6	.....	.....	22.88	.....	.....	25.97	26.40	27.08	.....	.....	.....	.....
7	.....	.....	22.87	.....	.....	25.98	26.40	26.97	.....	.....	.....	.....
8	.....	.....	22.83	.....	.....	25.97	26.40	.....	.....	.....	.....	.....
9	.....	.....	22.81	.....	.....	25.94	26.39	.....	.....	.....	.....	.....
10	.....	.....	22.82	.....	.....	25.90	26.38	.....	.....	.....	.....	.....
11	.....	.....	22.79	.....	.....	25.86	26.38	.....	.....	.....	.....	.....
12	.....	.....	22.84	.....	.....	25.79	26.39	.....	.....	.....	.....	.....
13	.....	.....	22.86	.....	.....	25.73	26.44	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	25.69	26.48	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	25.64	26.52	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	25.60	26.58	.....	.....	.....	.....	.....
17	.....	.....	22.80	22.70	.....	25.56	26.65	.....	.....	.....	.....	.....
18	.....	.....	22.84	22.71	.....	25.54	26.70	.....	.....	.....	h25.41	.....
19	.....	.....	.....	22.67	.....	25.54	26.75	.....	.....	.....	h25.39	.....
20	.....	.....	.....	22.67	.....	25.57	26.80	.....	.....	.....	.....	.....
21	23.18	.....	.....	22.69	.....	25.63	26.85	h26.57	.....	.....	.....	.....
22	23.21	.....	.....	22.72	.....	25.73	26.90	.....	.....	.....	.....	.....
23	23.21	.....	.....	22.73	h25.25	25.85	26.94	.....	.....	.....	.....	.....
24	23.17	.....	.....	22.75	25.29	25.95	26.99	.....	.....	.....	.....	.....
25	23.15	.....	.....	22.83	25.36	26.01	27.05	.....	.....	.....	.....	.....
26	23.16	.....	.....	22.89	25.43	.....	27.09	.....	.....	.....	.....	.....
27	23.17	.....	.....	22.95	25.51	.....	27.11	.....	.....	.....	.....	.....
28	23.16	h22.89	.....	23.04	25.58	.....	27.11	.....	.....	.....	.....	.....
29	23.14	22.90	.....	23.17	25.63	.....	27.12	.....	.....	.....	.....	.....
30	23.14		.....	23.27	25.68	26.28	27.13	.....	.....	.....	.....	.....
31	23.12		.....		25.74		27.15	.....		.....		.....

* No record for September, October, and December.
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 35.46 below lsd, Aug. 23, 1951. Records available: 1947-52. Feb. 18, 25.36; May 27, 24.84; Aug. 7, 56.00, pumping; Nov. 18, 30.57.

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 40.23 below lsd, Nov. 18, 1952. Records available: 1948-52. Feb. 12, 35.62; May 27, 39.72; Aug. 19, 55.37, pumped recently; Nov. 18, 40.23.

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 101.43 below lsd, Nov. 18, 1952. Records available: 1950-52. Feb. 12, 99.80; May 27, 100.30; Aug. 30, 101.04; Nov. 18, 101.43.

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 14.92 below lsd, Aug. 20, 1952. Records available: 1941-52. Feb. 20, 12.94; May 27, 13.69; Aug. 20, 14.92.

8.8.28.311. Cecil Thomas. Drilled irrigation water-table well in valley fill, diameter 16 inches, reported depth 160 feet, cased to 154. Highest water level 134.53 below lsd, Feb. 13, 1952; lowest 149.98 below lsd, Aug. 20, 1952. Records available: 1951-52. Feb. 13, 134.53; May 27, 153.37, pumping; Aug. 20, 149.98; Nov. 18, 142.31.

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 67.00 below lsd, Nov. 18, 1952. Records available: 1947-52. Feb. 13, 61.93; May 27, 65.91; Aug. 20, 94.25, pumping; Nov. 18, 67.00.

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: 1948-52. Feb. 14, 59.42; May 26, 62.58; Aug. 19, 64.04.

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 8.95 below lsd, Aug. 20, 1952. Records available: 1943-52. Feb. 12, 7.43; May 26, 7.70; Aug. 20, 8.95; Nov. 18, 8.77.

Sierra County

Hot Springs area.--The Hot Springs artesian basin is along the flood plain of the Rio Grande in south-central New Mexico. Truth or Consequences (formerly Hot Springs), a health resort, about 5 miles southwest of Elephant Butte dam, is the site of a number of hot mineral-water springs that discharge from the alluvium of the river's flood plain. Artesian wells drilled to the underlying limestone of the Magdalena group also produce thermal waters. The municipal water supply for the town and water for irrigation is obtained from nonthermal artesian wells in deposits of Tertiary and Quaternary age in Mud Springs Draw, about a mile southwest of Truth or Consequences. Water levels in thermal wells at Truth or Consequences have been measured at periodic intervals since 1939, and water levels have been measured in wells in the nonthermal area since 1945. Water levels in 11 thermal wells and 1 nonthermal well were measured in January 1952. Recording gages were maintained on 3 thermal wells in 1952.

The measured net lowering in artesian pressures in the thermal wells from January 1952 to January 1953 ranged from a few hundredths of a foot to about one-half of a foot. An average lowering of 0.18 foot occurred in the 9 thermal wells which showed a decline in water levels in 1952. The net declines in 1952 were less than in 1951 when the measured net lowering ranged from about 0.3 foot to about 0.8 foot. Water levels in 7 of the measured wells declined to record winter lows by the end of 1952, while the levels in the other 4 wells reached record winter lows in 1951. The artesian heads at the end of 1952 ranged from 1.04 feet to 2.09 feet and averaged 1.67 feet below the high January level of 1942. As the thermal waters discharge to the Rio Grande, seasonal fluctuations in artesian head are produced by the stage of the water in the Rio Grande channel. The pumping of nearby wells also cause a daily fluctuation in artesian head. Because of this relation the net changes in water level depend upon when measurements are made.

Hot Springs 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 0.59 below lsd, Oct. 28, Nov. 3, 10, 1952. Records available: 1940-52.

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	-0.48	-0.10	+0.07	+0.10	+0.23	+0.43	+0.48	+0.43	-0.04	-0.31	-0.53	-0.55
2	.49	.13	.00	.10	.24	.56	.46	.42	-.05	.37	.56	.53
3	.50	.08	-.05	.10	.23	.54	.47	.40	-.01	.39	.59	.53
4	.46	.07	-.02	.07	.28	.44	.47	.37	+.02	.39	.56	.58
5	.46	.06	-.01	.07	.29	.45	.46	.37	.04	.40	.55	.52
6	.42	.09	.00	.10	.29	.44	.47	.34	.05	.42	.56	.50
7	.40	.06	+.02	.11	.29	.45	.46	.35	.09	.45	.56	.53
8	.39	.05	+.04	.13	.30	.43	.46	.35	.08	.46	.55	.53
9	.41	.05	+.03	.08	.31	.43	.47	.34	.07	.47	.57	.55
10	.34	.02	-.03	.14	.27	.42	.46	.28	.05	.48	.59	.51

6--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	-0.32	-0.02	-0.06	+0.16	+0.31	+0.42	+0.51	+0.27	+0.04	-0.49	-0.57	-0.49
12	.32	.01	.11	.13	.31	.42	.47	.25	+.01	.50	.56	.51
13	.26	.02	.04	.16	.32	.41	.46	.25	-.05	.49	.54	.48
14	.27	.02	.05	.17	.34	.41	.44	.24	.15	.48	.55	.48
15	.30	.02	-.03	.16	.34	.41	.44	.24	.16	.53	.53	.46
16	.28	-.01	.00	.16	.35	.43	.43	.23	.17	.51	.54	.43
17	.26	+.02	.00	.17	.38	.44	.41	.22	.17	.52	.56	.39
18	.22	.05	-.10	.17	.40	.45	.41	.22	.19	.55	.58	.34
19	.22	.03	.08	.19	.41	.45	.41	.21	.21	.54	.56	.38
20	.15	.02	.05	.19	.41	.45	.41	.21	.21	.54	.57	.32
21	.15	.06	.03	.19	.42	.46	.42	.20	.26	.53	.55	.31
22	.19	.05	-.03	.17	.41	.44	.44	.16	.24	.55	.55	.31
23	.21	.07	+.06	.18	.41	.44	.41	.11	.24	.57	.53	.31
24	.15	.06	.09	.19	.41	.43	.43	.07	.29	.57	.53	.37
25	.11	.04	.06	.19	.43	.44	.43	.04	.29	.57	.57	.36
26	.13	.05	.07	.20	.43	.47	.43	.02	.31	.57	.57	.34
27	.16	.09	.04	.23	.43	.47	.43	.02	.30	.56	.55	.34
28	.14	.09	.06	.22	.42	.47	.43	+.01	.32	.59	.53	.34
29	.12	.09	.08	.23	.43	.49	.43	.00	.31	.56	.57	.31
30	.12		.09	.23	.43	.49	.41	-.02	.30	.55	.55	....
31	h.10		.10		.43		.42	-.07		.55		....

h Tape measurement.

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 2.71 below lsd, Nov. 5, 1952. Records available: 1941-52.

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	-2.59	-2.23	-2.08	-2.09	-1.97	-1.54	-1.78	-1.79	-2.12	-2.27	-2.69	-2.69
2	....	....	....	....	....	+1.26	....	....	2.17	2.34	....	....
3	....	....	....	....	....	1.23	....	....	....	2.39	....	....
4	....	....	....	....	....	1.03	....	....	....	2.43	....	....
5	2.60	2.21	2.13	2.09	1.94	.82	1.78	1.82	2.20	2.48	2.71	2.67
6	....	....	....	....	....	+.15	....	....	....	2.50	....	....
7	....	....	....	....	....	-.71	....	....	....	....	....	....
8	....	....	....	....	....	1.03	....	....	....	....	....	....
9	....	....	....	....	....	1.23	....	....	....	....	....	....
10	2.53	2.17	2.13	2.10	1.93	1.38	1.79	1.89	2.15	2.59	2.70	2.64
11	....	....	....	....	....	1.50	1.77	....	....	....	....	....
12	....	....	....	....	....	1.57	....	....	....	....	....	....
13	....	....	....	....	....	1.62	....	....	....	....	....	....
14	....	....	....	....	....	1.66	....	....	....	....	....	2.62
15	2.44	2.15	2.20	2.05	1.92	1.70	1.77	1.95	2.26	2.61	2.70	2.59
16	....	....	....	....	1.91	....	....	....	....	....	....	2.58
17	....	....	....	....	....	....	....	....	....	....	....	-2.37
18	....	....	....	....	....	....	....	....	....	....	....	+.27
19	....	....	....	....	....	....	....	....	....	....	....	-.07
20	2.34	2.12	2.21	2.02	1.89	1.76	1.78	2.00	2.37	2.67	2.70	1.08
21	....	....	....	....	....	....	....	....	-2.41	....	....	1.44
22	....	....	....	....	....	....	....	....	+.45	....	....	1.67
23	....	....	....	....	....	....	....	2.03	+.67	....	....	1.85
24	....	2.09	....	....	....	....	....	1.25	-.02	....	....	1.99
25	2.28	2.09	2.15	2.00	1.87	1.80	1.80	1.36	.94	2.69	2.68	2.10
26	....	....	....	....	1.87	....	....	1.57	1.40	....	....	2.19
27	....	....	....	....	.42	....	....	1.73	1.73	....	....	2.25
28	....	....	....	....	.07	1.79	....	1.84	1.95	....	....	2.30
29	....	2.08	....	....	.83	....	....	1.93	2.07	....	....	2.34
30	....		....	1.97	1.19	1.79	....	2.01	2.20	....	2.69	2.36
31	2.23		2.09		1.39		1.80	2.07		2.70		2.38

25. Jim Knox. Lot 4, block 93 in Truth or Consequences. Dug unused artesian well in Magdalena limestone, 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: 1939-52.

25--Continued.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	....	8.47	8.81	8.30	8.17	8.01	7.96	7.98	8.43	8.71	....	....
2	....	8.45	8.37	8.30	8.17	7.86	....	....	....	....	....	....
3	....	8.45	8.41	8.29	8.17	7.94	....	....	....	....	....	....
4	....	8.45	8.39	8.32	8.14	7.99	....	....	....	....	....	....
5	....	8.43	8.38	8.32	8.13	7.99	7.97	8.04	8.37	8.82	....	....
6	....	8.45	8.37	8.31	8.11	....	....	....	....	....	....	....
7	....	8.43	8.35	8.29	8.13	....	....	....	....	....	....	....
8	....	8.42	8.33	8.27	8.11	....	....	....	....	....	....	....
9	....	8.42	8.34	8.31	8.10	....	....	....	....	....	....	....
10	....	8.39	8.39	8.26	8.14	7.99	7.98	8.13	8.36	....	....	....
11	....	8.40	8.43	8.23	8.11	....	....	....	....	....	....	....
12	....	8.38	8.47	8.27	8.10	....	....	....	....	....	....	....
13	....	8.39	8.43	8.23	8.10	....	....	....	....	....	....	....
14	....	8.39	8.43	8.23	8.07	....	....	....	....	....	....	....
15	....	8.40	8.42	8.23	8.07	7.99	7.98	8.16	8.56	....	....	....
16	....	8.38	8.37	8.23	8.07	....	....	....	....	....	....	....
17	....	8.35	8.37	8.23	8.06	....	....	....	....	....	....	....
18	....	8.33	8.47	8.23	8.04	....	....	....	....	....	....	....
19	....	8.35	8.47	8.21	8.03	....	....	....	....	....	....	....
20	....	8.35	8.42	8.21	8.02	7.98	8.01	8.19	8.60	....	....	....
21	....	8.32	8.40	8.21	8.01	....	....	....	....	....	....	....
22	....	8.33	8.41	8.23	8.02	....	....	....	....	....	....	....
23	....	8.31	8.33	8.21	8.02	....	....	....	....	....	....	....
24	....	8.33	8.31	8.21	8.03	....	....	....	....	....	....	....
25	....	8.34	8.33	8.21	8.00	7.98	7.98	8.35	8.70	....	....	....
26	....	8.33	8.33	8.20	....	....	....	....	....	....	....	....
27	....	8.30	8.34	8.19	....	....	....	....	....	....	.....	....
28	....	8.30	8.33	8.19	....	....	....	....	....	....	....	....
29	....	8.30	8.31	8.18	....	....	....	....	....	....	....	....
30	....		8.31	8.17	....	7.96	....	....	8.71	....	....	....
31	8.48		8.31		7.99		7.99	8.45		....		....

Valencia County

Grants-Bluewater area.--The Grants-Bluewater area is about 80 miles west of Albuquerque. Most of the irrigated land is in the Bluewater-Toltec Irrigation District for which surface water for irrigation is distributed from Bluewater Reservoir located on Bluewater Creek. The amount of surface water in the reservoir, however, is usually insufficient for most irrigation requirements, and privately owned irrigation wells have been drilled since 1944 to supply water to district and other lands. Water levels in observation wells in the area have been measured periodically since 1946. Water levels were measured in 34 wells in February 1952 and in about 29 wells at bimonthly intervals. Records of water-level measurements made in a few wells in February only are not included herewith. The principal aquifer in the Grants-Bluewater area is in the San Andres formation. Recharge to the ground water is derived principally from surface water that leaks from the lower end of Bluewater Canyon and the canals after it has been released from Bluewater Reservoir. Recharge is also derived from precipitation upon the area of outcrop of the aquifer in the Zuni Mountains, and upon the alluvium and lava in the valley. Some recharge is derived from the return of irrigation water applied on the land.

Precipitation in 1952 in the Grants-Bluewater area was about 75 percent of the normal of 10.3 inches, and during the growing season, April to September, about 85 percent of the normal of 7.2 inches. In April 1.65 inches of precipitation, 1.16 inches above the normal for the month, was recorded at Bluewater.

Approximately 6,000 acre-feet of surface water was released for irrigation from Bluewater Reservoir in 1952 from May 21 to August 19 according to records at the gaging station on Bluewater Creek near Bluewater. Of this amount approximately 2,600 acre-feet was released in June. Surface water was not available in 1950 and 1951. Electric power records for 21 of the 23 irrigation wells used in 1952, indicate that approximately 10,400 acre-feet of ground water was used for irrigation. This was a decrease of nearly 2,000 acre-feet from that pumped in 1951. However, the pumpage in the upper part of the district near Bluewater, where most of the surface water was applied, increased from approximately 600 acre-feet in 1951 to almost 1,000 acre-feet in 1952.

Ground-water levels in the wells near Bluewater showed net rises during 1952 while those in the irrigated area southeast of Bluewater to near Grants showed net declines to new low levels. In the area near Bluewater, the rises were associated with the availability of surface water, and ranged from less than 0.1 foot to 4.7 feet. The greatest rise occurred in well 12.11.5.413 near

the mouth of Bluewater Canyon. Because of the increase in pumpage in this part of the area in 1952, the rises were less than those which occurred in 1948 and 1949 when a comparable amount of surface water was available. By the end of 1952 the water levels in this area were about 30 feet lower than in February 1946. In the irrigated area southeast from Bluewater, the net declines in water level ranged approximately from 0.4 foot in well 11.10.4.111 to 1.0 foot in well 12.10.32.111. These are in contrast to declines of 3 to 4 feet in this area during 1950 and 1951 when surface water was not available and pumpage was somewhat greater. Ground-water levels in this area were from 15 to 20 feet lower at the end of 1952 than when records began in 1946.

The 1952 records obtained from the recording gage on well 12.11.9.222, about 2.5 miles northwest of Bluewater and about 0.25 mile east from Bluewater Creek, shows that from January until April 15 the water level rose about 2 feet. Pumping began April 15 and from then until May 21, the water level declined 9 feet. Between May 21 and June 20 the water level rose 10 feet in response to release of surface water from Bluewater Reservoir. From June 20 to about mid-September the water level declined approximately 4 feet in response to pumping. The end of the growing season in mid-September resulted in decreased pumpage in the area. The water level began to rise and by the end of December was 4.4 feet above the level recorded at the beginning of 1952.

Grants-Bluewater Area

10.8.26.324. Santa Fe Railway. 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 21.49 below lsd, Feb. 19, 1952; lowest 21.78 below lsd, Oct. 17, 1952. Records available: 1952. Feb. 19, 21.49; Oct. 17, 21.78; Dec. 16, 21.63.

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 8.14 below lsd, Sept. 2, 1947; lowest 8.96 below lsd, Feb. 10, 1949, Dec. 16, 1952. Records available: 1946-52. Feb. 19, 8.95; Apr. 23, 8.93; June 19, 8.76; Aug. 25, 8.66; Oct. 22, 8.93; Dec. 16, 8.96.

10.10.10.200. Joe Padilla. Dug domestic water-table well in alluvium of Quaternary age, size 4 by 6 feet, depth 20 feet. Highest water level 9.83 below lsd, Feb. 3, 1947; lowest 14.89 below lsd, Aug. 27, 1952. Records available: 1946-52. Feb. 26, 12.19; Apr. 24, 11.65; June 25, 13.30; Aug. 27, 14.89. 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.

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 23.16 below lsd, Aug. 27, 1952. Records available: 1952. Feb. 21, 22.18; Apr. 24, 22.29; June 25, 22.88; Aug. 27, 23.16.

11.10.4.111. Buford Yarbo. Drilled unused water-table well in alluvium of Quaternary age, diameter 12 inches, depth 87 feet. Highest water level 67.68 below lsd, May 10, 1946; lowest 86.63 below lsd, Aug. 16, 1951. Records available: 1946-52. Feb. 26, 79.72; Apr. 24, 81.59; June 25, 78.42; Dec. 17, 81.30.

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 82.23 below lsd, Oct. 31, 1951. Records available: 1946-52. Feb. 26, 75.50; June 25, 90.64, pumping; Aug. 25, 86.22, pumping; Oct. 23, 80.87; Dec. 16, 77.88.

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 72.27 below lsd, Oct. 24, 1952. Records available: 1946-52. Feb. 26, 70.78; Apr. 24, 70.44; June 25, 71.24; Oct. 24, 72.27.

11.10.5.214. V. M. Vidal. Drilled domestic artesian well in San Andres(?) formation, diameter 4 inches, depth 141 feet. Highest water level 68.78 below lsd, Mar. 11, 1947; lowest 89.19 below lsd, June 27, 1950. Records available: 1946-52. Feb. 26, 80.20; Apr. 24, 84.72. Measurement discontinued.

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 83.13 below lsd, Aug. 26, 1952. Records available: 1946-52. Feb. 26, 73.66; Apr. 24, 78.17, nearby well being pumped; June 25, 92.92, pumping; Aug. 26, 83.13; Dec. 17, 76.25.

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 74.52 below lsd, Oct. 23, 1952. Records available: 1946-52. Feb. 26, 69.39; June 25, 102.24, pumping; Aug. 25, 100.75, pumping; Oct. 23, 74.52; Dec. 17, 95.22, pumping.

11.10.9.242. A. R. Card. Drilled domestic artesian well in San Andres formation, diameter 7 inches, depth 125 feet. Highest water level 52.24 below lsd, Feb. 26, 1946; lowest 71.93 below lsd, Oct. 31, 1951. Records available: 1946-52. Feb. 26, 67.44; Apr. 24, 74.60, nearby well being pumped; June 25, 80.36, nearby well being pumped. Measurement discontinued.

11.10.16.121. 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 66.66 below lsd, Oct. 22, 1952. Records available: 1946-52. Feb. 26, 61.36; June 25, 87.07, pumping; Aug. 26, 87.23, pumping; Oct. 22, 66.66; Dec. 16, 64.27.

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 13.85 below lsd, June 20, 1951. Records available: 1946-52. Feb. 26, 13.19; Apr. 23, 13.09; Oct. 28. 21.42, nearby well being pumped.

11.10.27.410. 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 44.28 below lsd, Aug. 26, 1952. Records available: 1946-52. Feb. 26, 39.73; Apr. 24, 40.21; June 19, 42.64; Aug. 26, 44.28; Oct. 22, 43.31; Dec. 17, 41.48.

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 87.69 below lsd, Dec. 24, 1951. Records available: 1944, 1946-52. Feb. 26, 97.97, nearby well being pumped; Apr. 24, 98.39, nearby well being pumped; June 25, 98.22, nearby well being pumped; Dec. 16, 87.11.

12.10.30.242. E. E. Harden. Drilled domestic water-table well in alluvium of Quaternary age, diameter 4 inches. Highest water level 88.45 below lsd, May 10, 1946; lowest 107.09 below lsd, June 25, 1952. Records available: 1946-52. Feb. 26, 101.33; Apr. 24, 102.31; June 25, 107.09; Aug. 25, 106.78; Dec. 16, 103.44.

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 109.54 below lsd, Dec. 16, 1952. Records available: 1946-52. Feb. 26, 106.94; Apr. 24, 107.06; June 25, 113.12, pumping; Oct. 23, 103.78; Dec. 16, 109.54.

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 dry at 88, Feb. 26, Apr. 24, June 25, 1952. Records available: 1946-52. Feb. 26, dry at 88; Apr. 24, dry at 88; June 25, dry at 88; Aug. 25, 115.41; Dec. 16, 107.73.

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 111.41 below lsd, Aug. 15, 1951. Records available: 1946-52. Feb. 26, 98.70; Aug. 25, 110.47, pumping; Oct. 23, 104.78; Dec. 16, 101.42.

12.11.5.413. J. Church Co. Drilled unused artesian well in San Andres(?) formation, diameter 8 inches, depth 357 feet. Highest water level 183.46 below lsd, Oct. 12, 1949; lowest 220.80 below lsd, Aug. 14, 1951. Records available: 1948-52. Feb. 20, 213.50; Apr. 23, 212.26; Aug. 26, 215.90; Oct. 28. 213.67; Dec. 17, 211.76.

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: 1948-52. Feb. 20, 157.52; Apr. 23, 149.31; June 25, 143.92; Aug. 26, 146.85; Oct. 28, 151.94; Dec. 17, 150.87.

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 158.37 below lsd, Aug. 25, 1951. Records available: 1946-52.

Daily highest water level from recorder graph

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	150.95	149.61	149.08	149.85	151.75	151.85	150.14	151.16	.....	.....	148.93	.....
2	150.94	149.46	149.16	149.91	152.30	151.52	149.97	151.11	.....	.....	148.88	.....
3	150.89	149.51	149.07	149.59	152.54	151.32	150.25	151.13	.....	.....	148.89	.....
4	150.80	149.53	149.08	149.38	152.98	151.09	149.62	150.96	.....	.....	149.00	.....
5	150.79	149.51	149.11	149.25	153.16	151.08	149.09	150.67	.....	.....	.....	.....
6	150.73	149.51	149.12	149.32	153.32	150.88	149.00	150.62	.....	.....	.....	.....
7	150.61	149.42	149.16	149.39	153.88	150.42	149.32	150.84	.....	.....	.....	.....
8	150.59	149.40	149.21	149.32	154.40	150.08	149.59	151.36	.....	.....	.....	.....
9	150.65	149.37	149.33	149.16	154.73	149.97	149.33	151.27	.....	.....	.....	.....
10	150.57	149.64	149.33	149.16	155.12	150.10	149.17	151.45	.....	.....	.....	.....

12.11.9.222--Continued.

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11	150.51	150.10	149.35	149.18	155.32	149.72	149.38	151.53	.....	.....	.....	.....
12	150.47	149.93	149.36	149.00	154.92	149.66	149.86	151.06	.....	.....	.....	.....
13	150.34	149.83	149.37	148.92	154.63	149.45	149.90	150.71	.....	.....	.....	.....
14	150.38	149.75	149.39	148.93	154.59	149.27	149.97	150.50	.....	.....	.....	.....
15	150.34	149.65	149.38	148.87	154.86	149.02	149.87	150.41	.....	.....	.....	.....
16	150.27	149.55	149.47	148.97	155.62	148.89	150.09	149.74	.....	.....	.....	.....
17	150.25	149.44	149.57	149.02	156.49	148.66	149.92	149.55	.....	.....	.....	147.10
18	150.15	149.41	149.53	149.31	156.56	148.52	149.60	150.04	.....	.....	.....	147.03
19	150.14	149.41	149.59	149.53	156.84	148.49	149.40	150.70	.....	.....	.....	147.07
20	150.00	149.31	149.67	149.50	157.54	148.23	149.44	151.06	.....	.....	.....	146.98
21	150.04	149.26	149.62	149.40	157.99	148.39	149.80	151.31	.....	.....	.....	146.93
22	149.97	149.24	149.61	149.54	157.48	148.66	150.11	151.42	.....	.....	.....	146.93
23	149.95	149.17	149.63	149.68	156.32	148.84	150.64	151.62	.....	.....	.....	146.86
24	149.85	149.16	149.73	149.83	155.46	148.94	150.70	152.00	.....	.....	.....	146.82
25	149.78	149.23	149.69	149.94	154.88	149.00	150.56	152.04	.....	.....	.....	146.82
26	149.78	149.19	149.72	149.89	154.34	149.51	151.55	151.97	.....	.....	.....	146.81
27	149.81	149.06	149.70	149.66	153.82	150.16	152.74	.....	.....	.....	.....	146.84
28	149.81	148.95	149.75	149.52	153.26	150.17	152.58	.....	.....	h149.22	.....	146.85
29	149.71	148.98	149.86	150.34	153.07	150.12	152.02	.....	.....	149.11	.....	146.78
30	149.69		149.88	151.04	152.69	150.13	151.38	.....	.....	149.07	.....	146.75
31	149.64		149.90		152.24		151.06	.....		149.08		146.67

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 114.36 below lsd, Oct. 30, 1951. Records available: 1946-52. Feb. 20, 114.10; Apr. 23, 113.80; June 25, 113.00; Aug. 26, 113.43; Oct. 28, 113.39; Dec. 17, 113.20.

12.11.14.213. Dyan Berryhill. Drilled unused water-table well in alluvium of Quaternary age and Blue Water basalt (of Nichols), diameter 4 inches, depth 115 feet. Highest water level 98.26 below lsd, Feb. 8, 1950; lowest 101.25 below lsd, June 25, 1952. Records available: 1949-52. Feb. 20, 100.99; Apr. 23, 101.17; June 25, 101.25; Oct. 24, 100.82; Dec. 17, 100.72.

12.11.15.341. Edward Freas. Drilled irrigation artesian well in San Andres formation, diameter 14 inches, depth 300 feet. Highest water level 99.78 below lsd, Oct. 12, 1949; lowest 133.14 below lsd, Oct. 31, 1951. Records available: 1946-52. Feb. 20, 126.75; June 25, 130.24; Dec. 17, 125.01.

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 265.69 below lsd, June 20, 1951. Records available: 1946-52. Feb. 20, 259.35; Apr. 24, 261.58; June 25, 261.07; Aug. 26, 257.72; Dec. 17, 256.46.

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: 1946-52. Feb. 21, 140.82; Apr. 24, 143.23.

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 70.74 below lsd, Oct. 2, 1947. Records available: 1946-52. Feb. 26, 70.27; Apr. 24, 70.64; June 25, 67.17; Aug. 26, 69.51.

12.11.24.111. 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 151.55 below lsd, Dec. 16, 1952; lowest 160.21 below lsd, June 19, 1952. Records available: 1952. Apr. 23, 153.08; June 19, 160.21; Oct. 24, 155.87; Dec. 16, 151.55.

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 120.41 below lsd, Aug. 7, 1947. Records available: 1946-52. Dec. 16, 120.28.

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 124.55 below lsd, Apr. 24, 1952. Records available: 1946-52. Feb. 26, 118.86; Apr. 24, 124.55; Dec. 16, 121.53.

U S GOVERNMENT PRINTING OFFICE 1955 O— 319836