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BULLETIN No. 91-13

# WATER WELLS AND SPRINGS IN SODA, SILVER, AND CRONISE VALLEYS

## SAN BERNARDINO COUNTY, CALIFORNIA

*Prepared by*  
*United States Department of Interior*  
*Geological Survey*

FEDERAL-STATE COOPERATIVE GROUNDWATER INVESTIGATIONS

AUGUST 1967

RONALD REAGAN  
Governor  
State of California

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WILLIAM R. GIANELLI  
Director  
Department of Water Resources

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This report is one of a series, prepared by the U.S. Department of the Interior, Geological Survey, Water Resources Division, which presents basic data on wells obtained from reconnaissance surveys of desert areas. These investigations are made by the Geological Survey under a cooperative agreement whereby funds are furnished equally by the United States and the State of California. The reports in this Bulletin No. 91 series are being published by the Department of Water Resources in order to make sufficient copies available for use by all interested agencies and the public at large. Earlier reports of this series are:

- Bulletin No. 91-1: Data on Wells in the West Part of the Middle Mojave Valley Area, San Bernardino County, California
- 91-2: Data on Water Wells and Springs in the Yucca Valley-Twenty-nine Palms Area, San Bernardino and Riverside Counties, California.
- 91-3: Data on Water Wells in the Eastern Part of the Middle Mojave Valley Area, San Bernardino County, California
- 91-4: Data on Water Wells in the Willow Springs, Gloster, and Chaffee Areas, Kern County, California
- 91-5: Data on Water Wells in the Dale Valley Area, San Bernardino and Riverside Counties, California
- 91-6: Data on Wells in the Edwards Air Force Base Area, California.
- 91-7: Data on Water Wells and Springs in the Chuckwalla Valley Area, Riverside County, California.
- 91-8: Data on Water Wells and Springs in the Rice and Vidal Valley Areas, Riverside and San Bernardino Counties, California.
- 91-9: Data on Water Wells in Indian Wells Valley Area, Inyo, Kern, and San Bernardino Counties, California.
- 91-10: Data on Wells and Springs in the Lower Mojave Valley Area, San Bernardino County, California.
- 91-11: Data on Water Wells in the Western Part of the Antelope Valley Area, Los Angeles and Kern Counties, California.
- 91-12: Data on Water Wells in the Eastern Part of the Antelope Valley Area, Los Angeles County, California.

The seal of the U.S. Department of the Interior, featuring a bison in a landscape with a rising sun, surrounded by the text "U.S. DEPARTMENT OF THE INTERIOR" and the date "March 3, 1849".

UNITED STATES  
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY  
Water Resources Division  
District Office  
345 Middlefield Road  
Menlo Park, California, 94025

June 15, 1967

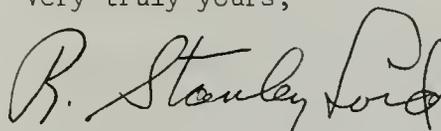
Mr. William R. Gianelli, Director  
Department of Water Resources  
State of California--Resources Agency  
Post Office Box 388  
Sacramento, California, 95802

Dear Mr. Gianelli:

We are pleased to transmit for publication by the Department of Water Resources the U.S. Geological Survey report, "Water Wells and Springs in Soda, Silver, and Cronise Valleys, San Bernardino County, California," by W. R. Moyle, Jr.

This report, one of a series for the Mojave Desert region, was prepared by the Garden Grove subdistrict office of the Geological Survey in accordance with the cooperative agreement between the State of California and the Geological Survey. It tabulates all available data on water wells and shows the reconnaissance geology with special reference to the water-yielding deposits.

Very truly yours,

A handwritten signature in cursive script that reads "R. Stanley Lord".

R. Stanley Lord  
District Chief



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WATER WELLS AND SPRINGS IN SODA, SILVER, AND CRONISE VALLEYS,  
SAN BERNARDINO COUNTY, CALIFORNIA

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By W. R. Moyle, Jr.

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PURPOSE AND SCOPE OF THE WORK AND REPORT

The data presented in this report were collected by the U.S. Geological Survey as a phase of the investigation of water wells and general hydrologic conditions throughout much of the desert region of southern California. The study was made in cooperation with the California Department of Water Resources.

The desert regions of California are characteristically regions of nearly barren mountain ranges and isolated hills surrounding broad valleys that are underlain by alluvial deposits derived from the mountains and hills. The valley areas generally contain ground water that has a wide range in chemical quality, but much of the water can be, and has been, developed for beneficial use.

The general objective of the cooperative investigation is to collect and tabulate all available hydrologic data for the individual desert basins in order to provide public agencies and the general public with data for planning water utilization and development work and for use in the overall ground-water investigation of the area.

Accordingly, the scope of the work includes: (1) A brief reconnaissance of major geologic features to determine the extent and general character of the deposits that contain the ground-water bodies; (2) a field examination of almost all the water wells and springs in the area to determine their location with respect to geographic and cultural features and the public-land net and to record well depths and sizes, types and capacities of pumping equipment, uses of the water, and other pertinent information available at the well site; (3) measurement of the depth to the water surface below an established and described measuring point at or near the land surface; (4) selection of representative wells to be measured periodically in order to detect and record changes of water level; and (5) collection and tabulation of well records, including well logs, water-level measurements, chemical analyses, and pumping-test data.

The work has been done by the U.S. Geological Survey, under the general supervision of Walter Hofmann, district chief in charge of water-resources investigations in California, and under the immediate supervision of L. C. Dutcher, chief of the Garden Grove subdistrict office. The fieldwork was carried on intermittently between June and November 1965 from the Garden Grove subdistrict office of the Water Resources Division.

## LOCATION AND GENERAL FEATURES OF THE AREA

As described in this report, Soda, Silver, and Cronise Valleys cover about 1,300 square miles, between long  $115^{\circ}45'$  and  $116^{\circ}35'$  W. and lat  $34^{\circ}55'$  and  $35^{\circ}25'$  N. (fig. 1). The eastern and southern boundaries of the area bisect the Kelso and Bristol Mountains, respectively; the area is bordered on the southwest by the Lower Mojave Valley area of Dyer and others (1963) and on the west by the Camp Irwin area of Kunkel and Riley (1959); the Camp Irwin military reservation borders the area on the northwest; the northern boundary is an arbitrary line through the center of township 16 north (fig. 2).

Access to the area is provided by Interstate Highway 15 (formerly U.S. Highway 466), State Highway 127, and numerous unpaved roads.

Baker, called Berry prior to 1914, is the principal town in the area. Many small railroad stations, formerly used but now deserted, include Razor, Crucero, Silver Lake, Balch, King, and Baxter.

The base map (fig. 2) was compiled at a scale of 1:62,500 from all or parts of the following U.S. Geological Survey topographic quadrangle maps: Alvord Mountain, Broadwell Lake, Baker, Cady Mountains, Cave Mountain, Halloran Spring, Kerens, Old Dad Mountain, Red Pass Lake, and Soda Lake.

The area is characterized by broad alluvial fans and plains that slope from the mountains toward the playas which, in times of runoff, receive inflow from the Mojave River.

## PREVIOUS WORK AND ACKNOWLEDGMENTS

Data on ground water in the Soda, Silver, and Cronise Valley area are contained in three U.S. Geological Survey water-supply papers by Mendenhall (1909), Thompson (1929), and Waring (1915), and one U.S. Geological Survey open-file report by Burnham (1955). These data are included in the tables in this report, as is information supplied by the California Department of Water Resources, the San Bernardino County Flood Control District, the Tidewater Oil Co., the Southern California Edison Co., the Los Angeles County Department of Water and Power, the Southern Pacific Co., the Union Pacific Railroad, the Los Angeles and Salt Lake Railroad, and the Tonopah and Tidewater Railroad.

The geology, as shown in figure 2, is generalized after unpublished mapping in the Broadwell Lake quadrangle by T. W. Dibblee, Jr., and A. M. Bassett of the Geological Survey; and published mapping in the Alvord Mountain quadrangle by Byers (1960); the Kerens quadrangle and parts of the Cave Mountain and Old Dad Mountain quadrangles by Anctil, Collier, Coonrad, Cunningham, Danehy, Kojan, Laird, and Schaffer, geologists with the Southern Pacific Co. (1964); the western part of the Soda Lake and Baker quadrangles by Grose (1959); the northeastern corner of the Cady Mountains by Dibblee and Bassett (1966); and the southern end of the Soda Mountains by Wright and Troxel (1954).

The cooperation and assistance listed above are gratefully acknowledged, as is the assistance given by the many ranchers, well owners, drillers, and others who contributed materially to the completeness of the data presented in this report.

## GEOLOGIC AND HYDROLOGIC FEATURES OF THE AREA

### Geologic Units and Their Water-Bearing Character

The geologic formations in the Soda, Silver, and Cronise Valleys are divided into two main groups, the consolidated rocks and the unconsolidated deposits. The formations within these groups have dissimilar water-bearing characteristics but, in general, the unconsolidated deposits of Quaternary age are more porous and permeable than the consolidated rocks of pre-Tertiary and Tertiary and Quaternary age. The unconsolidated deposits generally underlie the valleys and contain most of the ground water stored in the area. The consolidated rocks form the mountains and hills, surround the valley area, underlie the unconsolidated deposits, and form the sides and bottom of the ground-water basin. The consolidated rocks, for all practical purposes, are impermeable, but are important because they form the mountains and hills which receive the major part of the precipitation within the drainage area. It is the runoff from these mountains and hills that contributes the major part of the recharge to the ground-water body contained in the unconsolidated deposits. In the following paragraphs the geologic units, shown in figure 2, are described with special reference to their water-bearing characteristics.

The oldest formation in the area is the basement complex which consists of igneous and metamorphic rocks, undifferentiated, principally granite, schist, gneiss, limestone, and metavolcanic rocks, all of pre-Tertiary age. The basement complex is generally impermeable except in fractures and weathered zones that yield small quantities of water.

The volcanic rocks of Tertiary age are composed of intrusive and extrusive basaltic, andesitic, and felsitic rocks, undifferentiated. This unit in places is interbedded with the continental sedimentary rocks. Wells penetrating this unit sometimes yield small quantities of poor-quality water.

The continental sedimentary rocks of Tertiary age, consisting of moderately to well bedded, moderately to very steeply dipping beds of conglomerate, fan conglomerate, sandstone, siltstone, recemented limestone breccia, water-laid tuff, and agglomerate, yield little water to wells and springs. The water is usually of poor quality because of large gypsum seams in joint planes in parts of the formation.

The olivine basalt is Pleistocene and Recent in age. Everywhere in the mapped area (fig. 2) the basalt is Pleistocene except in T. 13 N., R. 11 E., and in the southern half of T. 14 N., R. 11 E., where it is of Recent age. In parts of the area the basalt overlies the older fan deposits and in other areas it rests directly upon the Tertiary or pre-Tertiary units. In all cases the basalt is unconformable with the underlying material and lies above the regional water table. Except for some small springs that issue from its base, the basalt is not considered to be a major aquifer.

The older alluvium, of Pleistocene age, underlies most of the valley floor and is overlain by a veneer of younger material. The older alluvium consists mainly of moderately sorted sand and some gravel, silt, and clay. It is oxidized and generally unconsolidated, but in some places it is slightly cemented. This formation is porous and permeable, extends below the water table, yields water freely to wells, and is the principal water-bearing unit in the area.

The older fan deposits, of Pleistocene age, are composed of moderately consolidated and moderately well bedded sand, gravel, and boulders derived from the granitic and metamorphic rocks and, where saturated, yield water to wells.

The younger alluvium, of Recent age, consists of unconsolidated sand with small amounts of gravel, silt, and clay. Deposition of this material is still taking place in the valley areas during times of infrequent streamflow. This unit is permeable and, where saturated, will yield water to wells. It is very thin and is not an important water-bearing unit, because it generally lies above the water table. However, it does transmit precipitation and water from the intermittent streams to the ground-water body.

The younger fan deposits, of Recent age, consist of unconsolidated angular boulders, cobbles, and gravel with small amounts of sand and silt derived from the local mountain areas. The unit also includes locally derived mudflow and landslide debris. The deposits are generally very poorly sorted. This unit, although it is at the toe of a large mountain watershed, is above the regional water table and therefore not an important aquifer.

The playa deposits, of Recent age, are composed of silt, clay, and sandy clay, with various amounts of soluble salts. Of the seven major playas shown in figure 2, only Soda Lake has areas of discharging ground water. The water levels beneath this playa, which are at or near land surface, allow water to evaporate into the air, leaving a residue of salt behind. The water from many wells and springs near the playa has a high concentration of dissolved solids. Many of the playa deposits may yield small quantities of water but the quality ranges from fair to very poor, depending on the source area and the purpose for which it is used.

The windblown sand, of Recent age, is composed of actively drifting fine to medium sand, ranging from a few feet to over 100 feet in thickness. In parts of the area the sand is saturated and yields some water having a wide range in quality.

The river-channel deposits, of Recent age, are composed predominantly of sand and were deposited by the Mojave River. These deposits are actively being reworked during times of flood. In general, this unit is not a principal aquifer; however, it is highly permeable and during floods it transmits water from the surface to the ground-water body.

## Recharge and Discharge of Ground Water

Recharge to the ground-water body in the area occurs by direct infiltration of rain, subsurface flow from the adjoining areas, and percolation of the infrequent runoff which occurs during floods in the Mojave River or from flash floods in the surrounding mountain areas. Rainfall in the Baker area averages about 3 inches annually, but in the surrounding mountain areas it may be much higher. Water-level measurements made between 1919 and 1965 indicate that a water-level decline of as much as 25 feet has taken place in the area between Baxter and Crucero, but in the area between Crucero and Silver Lake, no significant change is indicated.

In general, the subsurface pattern of ground-water flow in the area is from Afton Canyon, at the railroad siding at Basin, in the southwestern corner of the area, toward the east. After passing Crucero it moves northward, past Baker to Silver Lake in the north-central part of the area, and then continues north. Ground water from the east and southeast also enters the system and moves northward from Silver Lake.

## GEOPHYSICAL INVESTIGATIONS

The geophysical traverses shown in figure 2 were made to detect faulting in areas covered by alluvium. Many faults act as barriers to the movement of ground water in alluvium. The exact position of such faults is needed in order to determine the pattern of flow of the ground water. During this investigation eight magnetometer traverses were made with a Schmidt-type magnetometer. In addition one gravity profile across Silver Lake, which had been made by Neal (1965), was used to determine the fault locations.

The sensitivity of the magnetometer used is 16.8 gammas per scale division. The data were not reduced to a regional datum because isolated profiles were not related to a common base station. The data in each case were used to determine local discontinuities, caused by faulting, in the magnetic field.

The data used for projecting faults across the alluvial-filled basins are on file at the U.S. Geological Survey office in Garden Grove, Calif.

## WELL-NUMBERING SYSTEM

The well-numbering system used in the Soda, Silver, and Cronise Valleys has been used by the Geological Survey in California since 1940. The system has been adopted by the California Department of Water Resources and by the California Water Quality Control Board for use throughout the State.

Wells are assigned numbers according to their location in the rectangular system for the subdivision of public land. For example, in the number 11N/8E-8N1, the part of the number preceding the slash indicates the township (T. 11 N.), the part between the slash and the hyphen is the range (R. 8 E.), the number between the hyphen and the letter indicates the section (sec. 8), and the letter indicates the 40-acre subdivision of the section, as shown in the diagram below.

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

Within the 40-acre tract the wells are numbered serially as indicated by the final digit. Thus, well 11N/8E-8N1 is the first well to be listed in the SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 8, San Bernardino base line and meridian.

The letter X, substituted for the letter designating the 40-acre tract, indicates the well was located in the field and its location is known with respect to cultural features but its reference to the land net is not known.

The letter Z, substituted for the letter designating the 40-acre tract, indicates the well was plotted from unverified descriptions; the described locations of such wells were visited, but no evidence of a well could be found.

There are a few exceptions to this system of numbering wells according to their position in the 40-acre subdivision of the section. These are wells, usually having long periods of record, which were assigned numbers based on earlier, less accurate maps. During this investigation, these wells have been plotted at the correct location on the map, but the old number has been retained to facilitate use of the older records for the well.

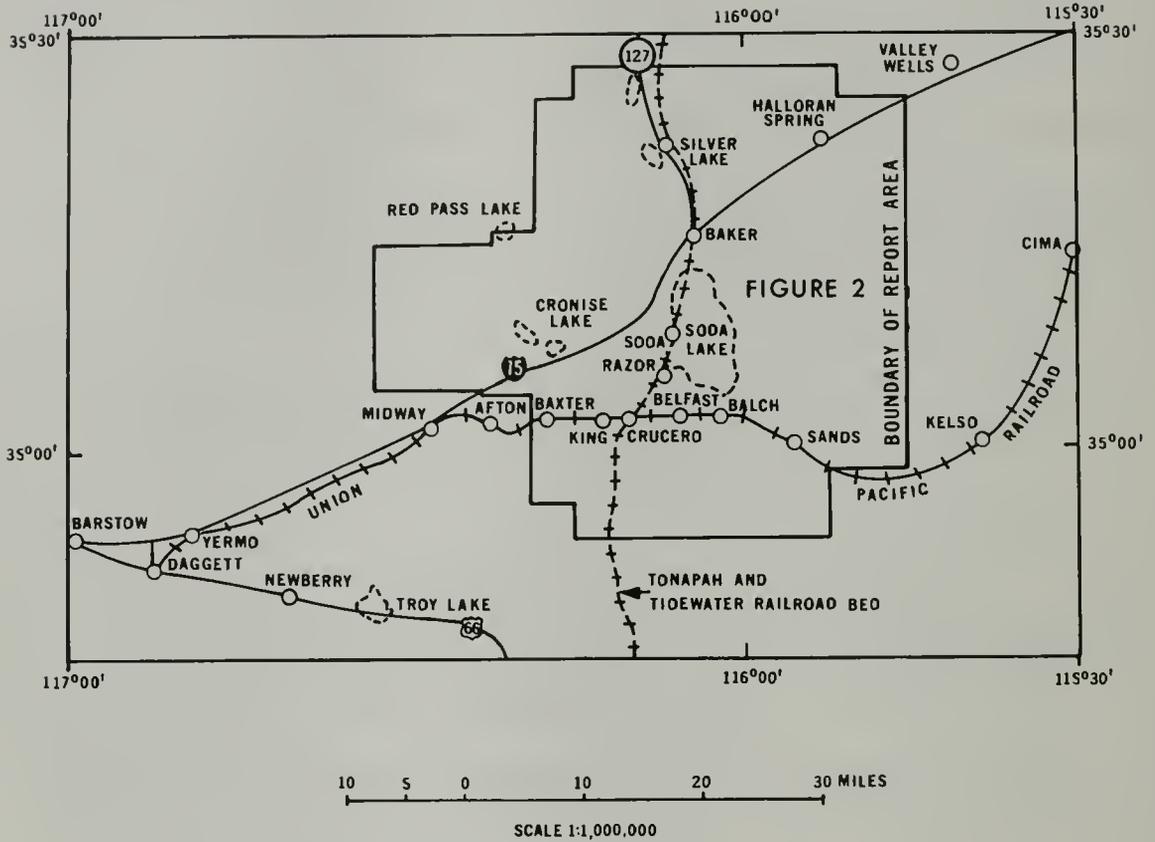
For some wells near East Cronise dry lake the section, letter, and final digit have been shown on the map (fig. 2) instead of the letter and final digit only. Some wells in this area were assigned correct numbers in 1954 on the basis of section corners in the field. A few of the projected section lines shown in figure 2 are not correctly located with regard to field markers. Therefore, the wells are properly located with respect to cultural features and field markers; their original numbers have been retained and the projected land net has also been retained.

The numbering of springs in this report is the same as for wells except that an S is used between the 40-acre subdivision letter and the final digit as shown in the following spring number: 10N/9E-32CS1.

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MAP OF PART OF SOUTHERN CALIFORNIA  
SHOWING AREA DESCRIBED IN THIS REPORT

APPENDIX A

TABLE 1. DESCRIPTIONS OF WELLS AND SPRINGS IN SODA, SILVER, AND  
CRONISE VALLEYS, SAN BERNARDINO COUNTY, CALIFORNIA



Table 1. Description of wells and springs in Soda, Silver, and Cronise Valleys, California

State well number: The number given is the number assigned to the well according to the method described in the section on the well-numbering system.

Other numbers and source of data: The source of data on each line is indicated by the following symbols: D driller; DA U.S. Department of Agriculture; DGT Thompson (1929); DWR California Department of Water Resources; FC San Bernardino County Flood Control District; GS U.S. Geological Survey; IM Wiebelt and Ricker (1948); M Mendenhall (1909); O owner; SCE Southern California Edison Co.; TOC Tidewater Oil Co.; UP Union Pacific Railroad Co.; USS United States Steel Corp.; W Waring (1915).

Date of observation: The date given is the date on which the well was visited.

Owner or user: The name given is that of the owner or user of the well on the date indicated. If data are given for more than one date, previous owners may be listed.

Year completed: The completion data was obtained from the driller's log or reported by the owner or others.

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

Type and diameter: The type of well construction is indicated by the following symbols: A auger; C cable tool; D dug by hand; R rotary. The number following the letter is the diameter of the casing or pit, in inches, at the surface. For an unsymmetrical, dug well, only the maximum dimension is given. The symbol N indicates no casing is visible at the surface.

Type of pump and power: The pump type or method of lift is indicated as follows: C centrifugal;

J jet; L lift; N none; S submersible; Si siphon; T turbine. The type of power is indicated as follows: A air; D diesel; E electric motor of undetermined horsepower (a number in this column indicates the rated horsepower of an electric motor); G gasoline engine;

Gr gravity; H hand operated; N none; St steam engine; W windmill.

Yield: Pumping-test data are given in table 5.

Use: The use of the well is indicated by the following symbols: Dm domestic; Ds destroyed or dry; H highway construction; In industrial; Ir irrigation; Ps public supply; RR railroad; S stock; T test hole; Un unused.

Measuring point: The point from which water-level measurements are made is described as follows: Bhc bottom of hole in casing; Bpb bottom of pump base; Hpb hole in pump base; Lsd land-surface datum; Tap top of access pipe; Tc top of casing; Tcc top of casing cover; Tf top of flange. The distance of the measuring point above or below (-) land-surface datum is given in feet, tenths of a foot, and sometimes hundredths of a foot. All measurements listed in table 1 are from the same measuring point unless otherwise indicated in the column for measuring points.

Altitude: The figure given indicates the altitude, in feet above mean sea level, of the land-surface datum. Land-surface datum is an arbitrary plane that closely approximates land surface at the time of the first measurement and is the fixed plane of reference for all subsequent measurements. Altitudes, given in whole feet, were interpolated from Geological Survey topographic maps having 40-foot contour intervals. Altitudes, given to the nearest tenth of a foot, are from Wiebelt and Ricker (1948).

Water level: Measured depths to water are given in feet, tenths of a foot, and hundredths of a foot, or feet and tenths of a foot; reported or approximate depths to water are given in whole feet. The distance between land-surface datum and the measuring point has been subtracted from, or added to, the measured water level. Thus, all water levels are referenced to land-surface datum. Water levels with a plus (+) symbol are those above land-surface datum.

Other data: C chemical analyses of water are given in table 4; L drillers' logs of wells are given in table 3; P pumping-test data are given in table 5; W additional water-level measurements are given in table 2.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Observation	Distance above or below lsd (feet)			
T. 10 N., R. 8 E.														
10/8-36H1	GS	6- 7-65	Natural Tank		0	N	N	N	Ds		2,740	dry		
T. 10 N., R. 9 E.														
10/9-23P1	GS	7-13-65			48.0	D	N	N	Ds	Tc	0	2,080	dry	
32CS1	GS	7-13-65 1955	Hyten Spring				N	N	Un				dry (a)	
T. 11 N., R. 7 E.														
11/7-4D1	GS TOC-1A	7-16-65 4-10-59	Tidewater Oil Co.	1959	63.0 b410	R	N	N	Ds T	lsd	0	1,110	dry	L
4D2	GS TOC-1	7-16-65 4- 2-59	Tidewater Oil Co.	1959	0 106.9	R	N	N	Ds T			1,110		L
9D1	GS TOC-1	7-16-65 4-16-59	Tidewater Oil Co.	1959	67.0 b640	R	6	N	Ds T	lsd	0	1,125	dry	L
11E1	GS GS-11X2 DGT-13	7-12-65 9-27-54 12-27-19	A. Skelton		36.7 36 141.2		8	N	Ds	Tc	2.0	1,078	dry dry 39.9	C
11J1	GS GS-14-1 DGT-15	7-12-65 5-26-54 12-15-19	J. J. Berray		23.2		8	N	Ds	Tc	2.3	1,060	dry	
11Q1	GS GS-11X1 DGT-14	7-12-65 5-25-54 12-15-19	E. I. Cook		6.8 7.2 99		10 10 10	N N N	Ds Ds	Tc	1.8	1,070	dry dry 30.6	
13F1	GS GS-18X1 D	6-10-65 5-25-54 1953	Loring McCormack Loring McCormack	1953	21.0 283.0 475		14 R	N N N	Ds	Tc	0	1,040	dry 25.97	C,L,P,W
14E1	GS GS-14X1 DGT-17	6-10-65 10-27-54 12-27-19	B. F. Caldwell				N	N	Ds Ds			1,070		
14W1	GS	7-12-65			123.0		10	N	Un	Tc	0	1,078	57.63	
14Z1	GS GS-14-2 DGT-16	6-10-65 5-26-54 1919	Massen						Ds			1,078		

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (feet)			
T. 11 N., R. 7 E.--Continued														
11/7-2421	GS GS-24-1 DGT-18	6-10-65 5-26-54 1919	W. T. Tener			N	N N		Ds Ds		1,040			
25L1	GS DWR	6-7-65 10-22-57			4.2	D 96	N N		Un	Tc 0	1,050	3.53	C	
T. 11 N., R. 8 E.														
11/8-6M1	GS GS-6X1 DGT-19	7-12-65 5-25-54 1917	Milton Culver		56.9	9	N N L G		Un Un	Tc	2.1 1,040	33.62 25.43 8.9		
7B1	GS GS-7X1 DGT-22	7-12-65 5-25-54 12-7-19	Mrs. Ora Weishaup		73.5 72.0 81	8 8	N N N N C		Un Un	Tc	1.5 1,040	27.31 22.39 9.0		
7C1	GS GS-7X4 DGT-20	6-10-65 5-26-54 12-7-19	Elmo Proctor		65.1 66.5 74	7 7 7	N N N N C		Un Un	Tc	0 1,040	31.40 26.27 11		F
7J1	GS GS-7X6 DGT-23	6-10-65 5-26-54 12-6-19	L. B. Joramlan		0 0 150	N 5	N G C		Ds Ds	Tc	0 1,035	5.3		
7P1	GS GS-7X5 DGT DGT-21	6-10-65 5-26-54 12-19-22 8-21	Elmo Proctor		3.7	D 96	C G		Ds Ds	Tc	0 1,040	dry	C,P	
7Q1	GS GS-7X7 D	6-10-65 10-27-54	Loring McCormack	1953	16.5 18.0 286	24	N N N N		Ds Ds	Tc	0 1,035	dry dry	L	
7Q2	GS GS-7X3 D	6-10-65 5-26-54 3-12-53	Loring McCormack Loring McCormack	1953	144 177.0 230	14	N N N N		Un Un	Tc	1.0 1,035	24.71	C,L,W	
7Q3	GS GS-7X2 D	6-10-65 5-26-54 3-17-53	Loring McCormack Loring McCormack	1953 1953	12.2 54.2 442	16 16 16	N N N N		Ds Un	Tc	.8 1,034	dry	F,L,W	
8M1	GS GS-8X1 UP	6-9-65 5-26-54 11-1-24	Union Pacific RR.			R 9	L G L G		Rh RR	Hpb Tc	.55 1,036 .3	1.75 17.51 4.6	C	

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
11/8-821	GS 6-10-65 GS-8-1 5-26-54 DGT-25 12- 6-19	D. L. Young			13	D 48	N N N		Ds	Tc 0	1,010	11.0		
822	GS 6-10-65 GS-8-2 5-26-54 DGT-26 12- 6-19	P. B. Starratt			86	C 7	N N N		Ds Ds	Tc 1.0	1,010	4.2		
9E1	GS 7-18-65 GS-9X1 5-26-54 DGT-24 12- 6-19	Ida M. Gue			68.9 68.9 72.2	8 8 C 8	N N N N N N		Un Un	Tc 1.8	1,005	23.55 20.16 10.6		
9X2	GS 7-18-65 GS-9X2 5-26-54 0 3-20-20 DGT-27 12- 6-19	Craig			92.5 98 102	N 8 8 8	N N N N N N		Ds Un	Tc 2.0	1,005	19.79 10	C	
10E1	GS 7-18-65 GS-10-1 5-26-54 DGT-28 1919	C. C. Klingerman			0 276	C 7 C 7	N N N C C		Ds Ds		985	6	L,P	
16D1	GS 7-18-65 GS-17-1 5-26-54 DGT-29 12- 6-19	Mojave United Mining & Milling Co.			0	D 48	N N N		Ds	Tc 0	1,005	10.5		
18G1	GS 7-12-65 GS-18X2 5-26-54 DGT-30a 1919	Mrs. L. B. Brooks			80	C	L N N L G C		Un S	Tf 1.25 Tc .6	1,035	25.17 20.20 c30	P	
18H1	GS 7-21-65 GS-17X1 10-27-54 0 3-20-20 DGT-30 12- 7-19 D 1919	L. B. Joralman L. B. Joralman			0 150 154	8 8 8 8 C 8	N N N C C C		Ds Ds	Tc 0	1,030	3 3.0 6	L,P	
18J1	GS 6- 9-65 GS-17X2 10-27-54 0 3-20-20 DGT-31 1919 DGT-31 1919	A. J. Ingalls			89 90	C 8 C 8	N N N C C		Ds Ds		1,030	10 c30 13	L,P	
19Z1	GS 6-10-65 GS-19-1 5-26-54 DGT-32 12- 2-19	Laura B. Weichert			86	C 8	N N N		Ds Ds	Tc .5	1,040	12.0		

T. 11 N., R. 8 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data		
										Description	Distance above or below lsd (feet)					
T. 11 N., R. 8 E.--Continued																
11/8-29G1	GS	7-21-65	Mojave United Mining and Milling Co., Louisiana Well		30.0	D 48	N N		Ds	Tc 0	1,200	dry				
	GS-29-1	5-26-54								Ds				10.1		
	DGT-33	12-6-19														
T. 11 N., R. 9 E.																
11/9-13H1	GS	7-13-65	Union Pacific RR.		138.1	6	L W		Un	Tcc .9	1,140	127.35				
	GS	7-14-65								Ds		1,045			C,I	
16H1	GS-17-1	5-26-54	Los Angeles and Salt Lake RR.		0	12	L N									
	DGT-34	1919					212	C 14						5%		
18A1	GS	7-20-65			39.5	6	L W		S	Tc .5	1,000	28.05				
T. 11 N., R. 10 E.																
11/10-16B1	GS	7-13-65	Union Pacific RR. Los Angeles and Salt Lake RR.		0	12	N N		Ds	Tcc 0	1,340					
	GS	7-13-65								Ds		1,235	196		C,L,P	
20Z1	DGT	10-28-15			246	14	L St		RR							
29B1	GS	7-13-65	Union Pacific RR.		16	16	T G		RR		1,240	(d)				
	GS-29X1	5-25-54					400	C 16	T G	RR			(d)	216		L,P,C
29B2	GS	7-13-65				6	L W		Dm		1,240					
35J1	GS	7-20-65				8	L W		S	Tc 1.5	1,380	333.65				
T. 12 N., R. 6 E.																
12/6-4G1	GS	7-19-65			0		N N		Ds	lsd 0	1,085	dry		C,W		
	GS	11-1-62					16.2			Ds				26.1		
	GS	2-17-54					58.0	8	L N		Un					
5A1	GS	9-24-65	Tidewater Oil Co.	1959	0		N N		Ds		1,107			L		
	TOC	5-2-59					680	R 6	N N	T						
12R1	GE	7-14-65			2.8	1 1/2	N N		Ds	Hpb 1.0	1,080	dry				
25A1	GS	7-7-65			20.2	12	N N		Ds	Tc 1.8	1,080	dry		C		
	GS	2-17-54			141.2	12	L H		S			18.9				

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State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) (feet)			
T. 12 N., R. 6 E.--Continued														
12/6-25A2	GS GS-30-1 DGT-40	7-14-65 9-24-54 1919	L. Halibaugh		0 25	6 C 5	N N		Ds Ds	Tc	0.4	1,080	dry 14	
12/7-8N1	GS GS GS	7-14-65 3-2-55 5-26-54	S. Smith	1910	8.0 99.0	D 72 N N	N N N		Ds Un	Tc	0	1,085	dry 16.25 16.07	
14D1	GS 0	7-6-65 1963	Pacific Telephone Co.	1963	800	R 8	S 10		Dm			1,520	e530	
14F1	GS 0	7-6-65 1963	J. C. Clements Beacon Station	1963	782	R 8	S 3		Dm	Tc	1.8	1,465	m216.2 e418	C
17P1	GS GS DGT-35	7-8-65 2-19-54 1919	I. A. Himes J. Walton		32.0 102.0 150	12 12 C 12	N N T		Un Un	Tc	0	1,100	22.10 22.03 12	P
18R1	GS GS	7-8-65 2-19-54			133.4 133.9	12 12	N N		Un Un	Tc	3.6	1,075	20.45	W
18R2	GS GS	7-8-65 2-19-54			48.2 49.7	12 12	N N		Un Un	Tc	1.8	1,075	17.69	W
18Z1	GS TOC	9-24-65 4-29-59	Tidewater Oil Co.	1959	b765	R 6	N N N N		Ds T	Lsd	0	1,075	25	L
19H1	GS GS FC	7-7-65 2-17-54 3-20-53	Himes	1952	218.5 252	12 12	N N T N		Un Un	Tc	1.5	1,080	28.19	C, L, P, W
19H2	GS	7-7-65			0	5	N N		Ds			1,085		
19Z1	GS DGT-36	7-7-65 12-4-19	R. Henry		21.5	C 12	N N L H		Ds	Tc	1.5	1,080	13.9	
20M1	GS	7-14-65			66.0	12	N N		Un	Tc	1.0	1,100	33.61	
29A1	GS GS DGT-45	7-15-65 5-25-54 12-5-19	State Highway Dept. J. M. Baber		55.0 95.5 134	12 12 C 12	N N N N C		Un Un	Tc	0	1,100	37.13 31.19 31.1	P
29B1	GS GS DGT-38	7-14-65 2-17-54 12-5-19	Sidney Smith H. D. Bradley		52.3 76.0 85.5	D 78	N N N N		Un Un	Tc	0	1,090	38.05 32.2 21.3	P

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										Description	Distance above or below lsd (feet)			
T. 12 N., R. 7 E.--Continued														
12/7-29B2	GS GS DGT-37	7-14-65 10-26-54 12- 4-19	H. D. Bradley		20.0 18.8 80.5	10 10 C 10	N N L H	N N L H	Ds Ds	Tc	1.5	1,090	dry dry 18.9	C
29B3	GS GS-29-1 DGT-39	7-14-65 5-25-54 12- 5-19	George T. Roberts		9.5 133.7	D 84 12	N N	N N	Ds	Tc	0	1,090	dry 22.0	L,P
29Q1	GS GS-29-2 DGT-42	7-15-65 10-26-54 12- 3-19	William L. Pagett H. Markt		2.0 0 33.0	D N D D	N N N	N N N	Ds Ds	lsd	0	1,135		C
29Z1	GS DGT	7-15-65 1919				N	N	N	Ds			1,140		
30J1	GS GS DA	7- 7-65 2-17-54 6- 8-32	State Highway Dept. J. A. Proctor Elmo Proctor	1931 1931	80.0 85	C 12 12	T G J G	T G J G	H Dm	Tc Tap	1.3 1.5	1,100	50.54	C,P,W
31R1	GS TOC-1	7-15-65 3-31-59	Tidewater Oil Co.	1959	0 b520	N 6 R	N N N N	N N N N	Ds T			1,135		L
32C1	GS GS DGT-43	7-15-65 5-25-54 12- 3-19	William L. Pagett H. Markt		76.7 g63.5	12 C 8	N N N N	N N N N	Un	Tc	1.0	1,120	71.09 dry 34.6	
32C2	GS GS-29-1 DGT-41	7-15-65 10-26-54 1919	William L. Pagett H. Markt		0 44	12 C	N N L W	N N L W	Ds Ds	Tc	1.3	1,120	dry 35	
32C3	GS	7-15-65	William L. Pagett		2.3	12	N N	N N	Ds	Tc	1.5	1,120	dry	
32C4	GS	7-15-54	William L. Pagett		26.4	10	N N	N N	Ds	Tc	1.5	1,125	dry	
32H1	GS GS-33-1 DGT-44	7-15-65 10-26-54 12- 3-19	William L. Pagett C. B. Baber		31.5 69	8 C 6	N N L H	N N L H	Ds Ds	Tc	1.0	1,120	dry 30	
36L1	GS	6-10-65			55.4	C 12	L W	L W	Un	Tc	1.6	1,060	57.48	
36P1	GS	6-10-65			44.0	D 30	N N	N N	Un	Tc	1.6	1,050	46.41	
36P2	GS	6-10-65							Ds	Tc	0	1,060	dry	

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										Description	Distance above or below (-) (feet)			
T. 12 N., R. 8 E.														
12/8-11F1	GS M-139	6- 9-65 1909	C. H. Springer Government Well	1860	17.1 3	D 6 D 96	C 3		Dm Un	Tc 0	930	0.52	C,P	
11F2	GS GS-11X2 M-57	6- 9-65 6- 9-65 10-27-54 7-14-32	C. H. Springer		12.7 12	D 78	C 5 N N		Ir Ir	Tc 0	932	5.66 .85 (h) (h)	C,P	
11L1	GS GS-11X1 DGT-10 DGT	6- 9-65 10-27-54 12- 7-19 9- 9-17	C. H. Springer		0 4.0 103	6 C 6	N N N N		Ds	Tc 0	935		C,P	
11L2	GS	6- 9-65	C. H. Springer		2.3	1	N N		Un	Tc 0	932	1.05	C	
11L3	GS	6- 9-65	C. H. Springer		3.8	D 84	N N		Un	Lsd	932	.89		
11L1	GS	6- 9-65	C. H. Springer		18.3	D 54	N N		Un	Tc -10.0	940	12.45		
11Z1	GS DGT-11 DGT	6- 9-65 12- 7-19 9- 9-17			39	C 7	N N		Ds		932	(h) (h)	P	
22A1	GS	6- 8-65			5.1	D 36	N N		S	Tc -2.0	940	4.00	P	
22E1	GS GS-22X1	6- 9-65 10-27-54			4.7 6.0	D 60 D	N N N N		Un S	Tc -1.5	950	4.60 4.0		
26H1	GS	6- 8-65			0	24	N N		Ds	Tc 0	950			
26J1	GS	6- 8-65			5.05	D 38	N N		Un	Tc 0	950	4.98		
27N1	GS DWR GS-27X1 DWR DGT-12	6- 9-65 5-26-54 2-17-54 5-13-53 12- 7-19	Razor Station Milton Calver Tonopah and Tidewater RR.	1910	15 20 20 20 17.8	D 660 D	N N C G L		Ds S	Tc -3.0	965	dry 15 18.4 20 12.6	C,P	
27N2	GS GS-27X2	6- 9-65 2-17-54	Razor Station Milton Culver	1953	26.0	11 A 10	L W N N		S Un	Tc 1.0	965	20.81	C,W	
27Z1	GS TOC	9-24-65 4-20-59	Tidewater Oil Co.	1959	310	R 6	N N N N		Ds T		965			
28Z1	GS TOC	9-24-65 4-19-59	Tidewater Oil Co.	1959	118	R 6	N N N N		Ds T		980		L	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 12 N., R. 8 E.--Continued														
12/8-35AL	GS GS-35X1	6- 9-65 5-26-54	M. C. Culver		20.0 10.0	D 113 D 240	C G L G		S S	Tf 1.34 Tcc 1.0	951	7.26	C,W	
35A2	GS GS-35X2	6- 9-65 5-26-54	M. C. Culver Sidney Smith	1936	10.0 8.1	D 60 D	N N N N		Un Un	Tcc 1.4	951	7.75 7.28	C	
T. 12 N., R. 9 E.														
12/9-4B1	GS DWR	6- 8-65 10- 8-59			18.0	D 36	N N		Un	Tcc 1.0	934	11.30 20	C	
4H1	GS	6- 8-65			10.0	D 60	N N		Ds	Tc 1.0	938	dry		
22F1	GS M-141	6- 8-65 1909	Borax Well		7.3 20	6	L W		Un	Tc 2.5	950	6.95		
30M1	GS	6- 8-65			3.55	10	N N		Ds	Tc 1.0	940	dry		
T. 12 N., R. 10 E.														
12/10-27C1	GS	7-13-65			462.5	C 8	N N		Un	Tc 2.0	1,440	462.4		
36Q1	GS	6-16-65			10.6	10	N N		Ds	Tcc 2.3	1,960	dry		
T. 13 N., R. 5 E.														
13/5-10R1	GS DGT M-136 W-11	7-19-65 2-26-18 1852	Bitter Spring Bitter Spring		0	D 24 D	N N Si Gr		Ds	Tc 0	1,440	dry (h)	C,P	
18L1	GS D	11- 8-65 1- -44	U.S. Government	1944	430	C 14	N N		Un	Tc .7	1,610	164.50 185	C,P	
T. 13 N., R. 8 E.														
13/8-1H1	GS GS-1-1 DGT-9	6- 8-65 2-18-54 1919	J. D. Heitschusen O. Pachmeyer		134.5 136.0 400	12 12 C	N N N N		Un Un	Tc 2.0	922	25.70	W	
2J1	GS	7-18-65	State Highway Dept.			14	T 125		H	Tcc 2.0	940	37.68		
12H1	GS DWR GS-7E1	6- 8-65 10- 8-59 2-18-54	Fred Twisselman		123.8 129.6	13 C 12	L N L W		Un Un	Tc .4	922	23.25 25 22.95	C	

See footnotes at end of table.

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										Description	Distance above or below (-) lsd (feet)				
<u>T. 13 N., R. 9 E.</u>															
13/9-20J1	GS	6-8-65	Fred Twisselman		400	R 14	L W		S	Tcc	0.8	980	65.49	C,P,W	
	GS	2-18-54					16	T D		Ir					
33Q1	GS				25.0	D 72	N N		Un	Tc	0	950	24.90		
<u>T. 14 N., R. 6 E.</u>															
14/6-12G1	GS	6-17-65			49.6	6	L N		Ds	Hpb	7.7	1,635	dry		
	GS	7-22-41				48.1	D	N N		Un				45.9	
<u>T. 14 N., R. 8 E.</u>															
14/8-10R1	GS	6-17-65	E. O'Rourke		20.0	D 48	N N		Ds	Lsd	0	910	dry		
	GS-13-1	9-27-54				32.8	D 48	L H						31.4	
	DGT-3	10-23-17				29.0	D 72	N N		Ds	Lsd	0	954	dry	
13R1	GS	6-16-65				28.8	12	N N		Ds	Tc	2.2	920	dry	
14K1	GS	6-17-65	A. D. Long		289	12	N N		Ds				29.8		
	GS-14-1	9-27-54				289	C 12							29.8	
	DGT-4	3-19-20													
14Z1	GS	6-17-65			40	D	N N		Ds			920	38		
	DGT	1917													
25A1	GS	7-4-65			0	D 96	N N		Ds			925			
25C1	GS	6-14-65			24.0	D 24	N N		Ds	Tc	0	920	dry		
25P1	GS	6-25-65	Polycrome Resources, Nevada Corp.	1964	65	R 8	S 3		In	Tc	1.2	935	49.77	P	
25Q1	GS	6-23-65			0	D 48	N N		Ds			925		C,P	
	GS-36-1	9-27-54			36.5	D 48	L			Lsd	0		34.7		
	DGT-6	9-9-17	R. V. Williams		7.0	D 84	N N		Ds	Tc	-2.0	925	dry		
25Q2	GS	7-5-65	Williams Well												
	DGT														
25R1	GS	7-5-65			0		N N		Ds			920		C	
	GS	2-18-54	Charles E. Brown		308	14	T N		Un	Bpb	0		32.98		
	DA	7-14-32				12									

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 14 N., R. 8 E.--Continued														
14/8-25R2	GS GS	6-8-65 2-18-54	State Highway Dept.		10.2	12 12	N N J G		Ds Dm	Tc 0	920	dry 34.45	W	
36A1	GS DWR DWR	6-26-65 5-4-64 10-25-61	Gale Pike	1957	380	12	S 1½		Dm	Tc .1	920	625.55 31.6 25.2	C	
36A2	GS	6-26-65	Gale Pike		45	6	J		Un	Bhc 3.5	920	24.02		
36B1	GS GS	6-25-65 2-18-54	Arne A. Jacobson El Rancho Motel		175	6 6	S 3/4 T 2		Dm Dm	Tc 3.4	925	28.15 27.63	P	
36B2	GS GS GS	6-25-65 2-18-54 2-18-54	Death Valley Inn Garage	1951 1939	1180	13	S J 1		Dm Dm	Tc 1.7	925	31.59 (d)	C	
36Z1	GS DGT-7	7-8-65 1917	J. D. Heitschusen		0 385		N N C		Ds		920			
T. 14 N., R. 9 E.														
14/9-1N1	GS	7-6-65			106.5	8	N N		Ds	Tc 2.5	1,720	dry		
1N2	GS	7-6-65			86.0	8	N N		Ds	Tc 0	1,720	dry		
20N1	GS	6-25-65	Whiting Bros. Service Station		200+	9	S 1		Dm	Tc .6	1,020	130.84		
20R2	GS	6-24-65	Chet Huffman	1962	202	R 8	J 3		Dm	Tc .5	1,000	121.54		
20R3	GS	6-24-65	Chet Huffman	1960	201	R 8	S 3		Dm	Tc .5	1,005	121.14	C	
20P1	GS	6-24-65	Humble Oil Co.		245	R 8	S 1½		Dm	Tcc .2	1,040	144.4F		
29D1	GS GS	7-9-65 2-18-54	Mrs. Newton		0		N N N N		Ds Ds		1,000			
29D2	GS	6-25-65	Mrs. Newton	1960	160	6	S E		Dm	Tc .1	1,002	611.86		
29H1	GS DGT-8	6-26-65 1917	F. Rickerhouse		307.5 450	12	N N C		Un	Tc 1.5	1,060	174.85 40		
30A1	GS GS	6-24-65 3-3-55	State Highway Dept. State Highway Dept.	1955	180 180	12 12	J 7½ N N		Dm Un	Tc 1.5	1,000	109.04	L,P,W	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data	
										Descrip- tion	Distance below lsd (feet)				
14/9-30A2	GS	6-26-65	Chet Huffman	1964	215	R 6	S		Un	Tc	0.2	995	100.26		
30A3	GS	6-26-65	Chet Huffman	1958	215	R 6	S E		Dm			995	(d)		
30B1	GS	6-25-65	City of Baker	1965	180	R 8	S 1½		Dm	Tc	.2	980	84.71		
30B2	GS	7- 3-65	A. R. Paris	1963	200	R 8	S 5		Dm	Tc	1.5	975	82.75		
30C1	GS	7- 3-65	Paul Murtha	1957	150	6	S 1		Dm	Bhc	.8	960	66.80		
30E1	GS	7- 3-65	Yermo School Dist.	1950	125	12	S 3		Dm	Tc	.9	950	50.97	C,L	
	GS	2-18-54				12	J 5		Dm					49.83	
	DWR	4-15-53				C 12								54.1	
	D	5- 6-50											50		
30E2	GS	7- 3-65	Lois Clark	1957	180	10	S 1½		Dm	Tc	.9	930	39.12		
30F1	GS	7- 5-65	Charles F. Brown	1947	125	T 5			Dm	Tc	1.0	960	63.5	C,I,P,W	
	SCE	7-18-63				T 5									
	GS	2-17-54				C 12	J G								
30F2	GS	6-26-65	Bud Thomas		206	R 8	S 3		Dm	Tc	.8	960	63.11	P	
30H1	GS	6-27-65	Chet Huffman	1964		R 6	N N		Un	Tc	1.2	995	97.10		
30J1	GS	7- 4-65	Jess Meyer	1959	447	R 9	S 1½		H	Tc	.3	970	71.48		
30K1	GS	6-23-65	State Highway Dept.	1950	95.3	R 6	N N		Un	Tf	1.7	965	76.10	C,P,W	
	GS	2-17-54	E. Kolstad		104.3	6	L W		Un						
30K2	GS	7- 2-65	Peter Van Ella	1952	89	8	S 1½		Dm	Tc	.7	960	k59.94		
	GS	2-18-54				L G				Un					
30L1	GS	7- 2-65	Lloyd Metheny		127	R 6	S 1		Dm			950	53	L	
	GS	2-18-54	Hadlock Motel				T 2		Dm				(d)		
30L2	GS	7- 2-65	Lloyd Metheny	1952	99	R 8	S E		Dm	Tc	.8	940	k52.42		
	GS	2-18-54	Schaff Bros. Garage		35.0	8	T 2		Dm					45.27	
30L3	GS	7- 2-65	Lloyd Metheny			5	N N		Ds	Tc	0	950	dry		
30L4	GS	7- 2-65	Schaff Bros. Garage			R 8	T 1		Dm	Tc	.8	955	(d)		
30L5	GS	6-25-65	Chet Huffman		90	9	S 1½		Dm	Tc	1.0	940	30		
30L6	GS	7- 2-65	J. Rapinatti			R	S 1		Dm			945	(d)		

T. 14 N., R. 9 E.--Continued

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) (feet)			
T. 14 N., R. 9 E.--Continued														
14/9-30L7	GS	7- 2-65	American Legion Post			R 9	S 1		Dm	Tc	1.5	945	k51.50	
30L8	GS	7- 3-65	T. Reetz	1949	160	7	S 3		Dm	Tc	.5	940	k45.25	
30M1	GS	7- 3-65	T. Reetz		0	N			Ds			940		
	GS-30-1	9-27-54												
	DGT-5	10-23-17			44	D	L W			Tc	2.5		38.1	
30P1	GS	7- 4-65	Mr. Failing			10	S 5		Dm	Tc	.7	965	k51.70	C,L
	GS	2-18-54		1942	235	10	T 5		Ps				50.42	
	D	9- -42			235	10							50	
30P2	GS	7- 4-65	Mr. Failing	1947	250	12	S 5		Dm	Tcc	.7	965	c61.26	L
	GS	2-18-54			250	C 12	T 7½		Ps				53.55	
	D	5- -47											54.0	
30Z1	GS	7- 5-65	Mr. Failing		0		N N		Ds			920		L
	GS-30-2	11-16-54				N			Ds					
	D	7- -42			502	C							36	
T. 14 N., R. 11 E.														
14/11-7E1	GS	7- 8-65	Henry Spring			D 300	Si Gr		S	lsd	0	2,800	h6	P
	DGT	1917	Mrs. S. E. Yates (Henry Spring)						S				(h)	
9E51	GS	7- 7-65	Granite Spring		1.0	D 36	N N		Un	lsd	0	3,760	1.0	
	DGT	1917							S					
T. 15 N., R. 6 E.														
15/6-11Q1	GS	6-17-65	Kaiser Steel Corp.	1944	0	R	N N		Ds			2,407.5		L
	IM-12	3- -44	Colorado Fuel and Iron Co.		82				T					
11R1	GS	6-17-65	Kaiser Steel Corp.	1944	0	R	N N		Ds			2,415.5		L
	IM-11	3- -44	Colorado Fuel and Iron Co.		112				T					
12K1	GS	6-17-65	United States Steel Corp.		13.7	6	N N		Ds	Tc	1.0	2,240	dry	
	USS-103													
12M1	GS	6-17-65	United States Steel Corp.		14.8	6	N N		Ds	Tc	1.0	2,320	dry	
	USS-9													
12M2	GS	6-17-65	United States Steel Corp.		20.7	6	N N		Ds	Tc	1.0	2,320	dry	
	USS-8													

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 15 N., R. 6 E.--Continued														
15/6-12M3	GS USS-10	6-17-65	United States Steel Corp.		11.5	6	N N	N N	Ds	Tc	2.0	2,320	dry	
12Q1	GS USS-102	6-17-65	United States Steel Corp.		89.4	6	N N	N N	Ds	Tc	1.3	2,165	dry	
14A1	GS IM-9	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	97	R N N N	N N N N	N N	Ds T			2,376		L
14A2	GS IM-7	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	n104	N	N	N N	Ds T			2,300		L
14A3	GS IM-8	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	122	R N	N N	N N	Ds T			2,384.5		L
14A4	GS IM-4	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	n125	R N	N N	N N	Ds T			2,279		L
14A5	GS IM-6	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	127	R N	N N	N N	Ds T			2,330		L
14A6	GS IM-3	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	250	R N	N N	N N	Ds T			2,256		L
14A7	GS IM-5	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	122	R N	N N	N N	Ds T			2,305		L
14A8	GS IM-10	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	77	R N	N N	N N	Ds T			2,362.5		L
14H1	GS IM-1	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	n250	R N	N N	N N	Ds T			2,252.5		L
14H2	GS IM-2	6-17-65 3- -44	Kaiser Steel Corp. Colorado Fuel and Iron Co.	1944	n152	R N	N N	N N	Ds T			2,278.5		L

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 15 N., R. 8 E.														
15/8-8J1	GS	6-15-65			134.0	D 36	N N		Ds	Tc	-4.0	940	dry	
15Q1	GS	6-15-65	Los Angeles County Dept. Water and Power well 1		228		T 10		Ps			995	(d)	C,P
	O	11-9-64							Dm				137 (d)	
	GS-22X1	2-19-54		1930	242	12	T 10						138	
	O	6- -53												
15Q2	GS	6-15-65	Los Angeles County Dept. Water and Power well 2		215	8	T 10		Ps			995	(d)	F
	O	5-19-65							Dm				142	
	GS-22X2	2-19-54		1943	208	9	T 10						136	
	O	6- -53												
	O	1943			254									
22K1	GS	6-16-65			11.0	D 54	N N		Ds	Tc	0	909	dry	C,F
	GS-22X3	9-27-54												
	DA	6-8-32												
	DGT-2	1917	Tonopah and Tidewater RR.		115	L								
22L1	GS	6-16-65			41.0	D 42	N N		Ds	Tc	0	940	dry	C
	GS-22-1	9-27-54												
	DGT-1	1-21-18	G. Braver		64	D 48	L W						59.0	
	DGT	9-9-17			64								61	
22R1	GS	6-17-65	Death Valley Panamint Mining Co.		55.5	12	N N		Un	Tc	.7	909	55.4	C,K
	GS	2-18-54			120	12	J 3		In					
	M-104	1909	Tonopah and Tidewater RR.		200				Rd					
36F1	GS	6-16-65			3.8	6	N N		Ds	Tc	1.2	920	dry	C,L,W
	GS-36X1	2-18-54	Silver Lake Airport		90	6	T 1 1/2		Dm	Rpb	-4.0		6.44	
T. 15 N., R. 10 E.														
15/10-4L1	GS	6-24-65			n25	D 72	N N		Ds			3,520	dry	
4L2	GS	6-24-65			n50	D 72	N N		Ds			3,500	dry	
5F1	GS	6-24-65			25	D 72	N N		Ds			3,500	dry	
7F1	GS	6-24-65	Wander Mine		n100±	D 48	L N		Un			3,500		
8F1	GS	6-24-65	Tony Williamson		23.8	D 72	N N		Ds	Tc	0	3,500	dry	

See footnotes at end of table.

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below lsd (feet)			
T. 15 N., R. 10 E.--Continued														
15/10-8L1	GS DGT	6-24-65 1917	Hytens Well		74.0	D 72 D	N N L H		Ds	Tec 0	3,500	dry 125		
14L1	GS DGT M-108	6-24-65 1927 1909	Halloran Spring		8.86	D 300	Si Gr		S S	Tec 3.5	3,000	8.09 (h)	C,P	
15E1	GS	6-24-65			29.4	2	N N		Ds	Tec 0	2,940	dry		
15R1	GS	7- 7-65			30.4	R 3	N N		Ds	Tec .5	2,880	dry		
16H1	GS	6-24-65			p60	D 96	N N		Un	Tec 0	2,960	p55		
18Q1	GS DWR	7- 6-65 4-15-53	Robert Nyswanger		9.6 18	D 48	N N		Ds	Tec 0	2,940	dry 12	C	
18Q2	GS	7- 6-65			15.5	D 24	N N		Ds	Tec 0	2,940	dry		
18Q3	GS	7- 6-65			48.0	D 84	N N		Un	Tec 3.0	2,880	27.67		
19D1	GS	7- 6-65	Rocky Point Mining Co.		6.35	D 30	N N		Un	Tec 4.0	2,880	3.50		
23F1	GS	7- 8-65	Fred Stone Chevron Station		240	R	E		Dm		2,934	e100		
26B1	GS	7- 8-65			7.3	D 84	N N		Ds	Tec 0	3,000	dry		
26R1	GS	7- 8-65			8.2	D 72	N N		Ds	lsd 0	2,920	dry		
28K1	GS DWR	7- 8-65 5-27-55	E. Huber	1955	202		5		Ps		2,445	(d) 165	C,P	
T. 15 N., R. 11 E.														
15/11-8P1	GS	7- 7-65			41.0	D 48	N N		Ds	lsd 0	3,760	dry		
9K1	GS	7- 7-65			200	6	S E		S	Tec 1.4	3,940	86.99		
9Q1	GS	7- 7-65			80.0	D 72	J N		Un	Tec 1.0	3,960	68.34		
10G1	GS	7- 7-65	Halloran Summit Chevron Station		700	6	S 2		Dm	Tec 1.0	4,080	(q)		
16D1	GS	7- 8-65		1965	38.0	R 14	N N		Un	lsd 0	3,960	36.		

State well number	Other numbers and source of data	Date of observation	Owner or user	Year completed	Depth of well (feet)	Type and diameter (inches)	Type of pump and power	Yield (gpm)	Use	Measuring point		Altitude of lsd (feet)	Water level below lsd (feet)	Other data
										Description	Distance above or below (-) lsd (feet)			
T. 15 N., R. 11 E.--Continued														
15/11-17K1	GS	7- 8-65	Telegraph Mine, No. 2 Shaft	1921	n130	D 72	J A		In	Tc 0	3,860	62.95	P	
	0	1921										65		
17L1	GS	7- 8-65	Telegraph Mine, No. 1 Shaft	1921	n40	D 120	N N		Ds		3,840			
	0	1921			275							65		
T. 16 N., R. 9 E.														
16/9-21P1	GS	6-16-65	Sierra Talc Co.		58.0	D 96	N N		Ds	Tc 1.0	2,200		dry	
22N1	GS	6-16-65	Sierra Talc Co.		n300	D 96	N N		Ds	Tc 0	2,440		dry	
24N1	GS	6-24-65	Los Angeles County Dept. Water and Power		29.5	D 60	N N		Un	Tcc 0	3,000		11.18	
	0	1964					C 3/4						19	
	0	1964					C 3/4						c20.5	
	DGT	1917	Riggs Wash Well											
27H1	GS	6-15-65			80.0	D 72	N N		Ds	Tc 5.0	2,600		dry	
31Q1	GS	6-15-65			68.0	D 60	N N		Ds	Tc 2.0	2,080		dry	
T. 16 N., R. 10 E.														
16/10-25L1	GS	6-23-65	Bull Spring		p16	D 200	N N		S		3,960		p15	
	M-107	1909							In					
a.	Intermittent flow.													i. New casing installed in dug well.
b.	Drilled to basement rock.													j. Well redrilled.
c.	Well being pumped.													k. Well pumped recently.
d.	No access into casing.													m. Tape smeared.
e.	Reported measurement.													n. Inclined shaft.
f.	Well redug.													p. Estimated.
g.	Depth to obstruction.													q. Dry at 190 feet.
h.	Flowing.													



APPENDIX B

TABLE 2. RECORDS OF WATER LEVELS IN WELLS



Table 2.--Records of water levels in wells

Table 2 includes records of water-level measurements made in wells where five or more measurements have been made; if fewer than five measurements were made, the records are given in table 1.

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

Altitudes are for the land-surface datum at the well and are in feet above mean sea level. Altitudes given in whole feet were interpolated from Geological Survey topographic maps having 40-foot contour intervals.

Date	Water level	Date	Water level	Date	Water level
11N/7E-13R1. Depth of well 475 ft in 1953; 283.0 ft May 25, 1954; 21.0 ft June 10, 1965. Altitude about 1,040 ft.					
1953	75	Mar. 2, 1955	26.46	Mar. 8, 1961	(f)
May 25, 1954	25.97	Mar. 7, 1957	27.65	June 10, 1965	(f)
11N/8E-7Q2. Depth of well 230 ft March 1953; 177.0 ft May 26, 1954; 144.0 ft June 10, 1965. Altitude about 1,035 ft.					
May 26, 1954	20.60	Mar. 7, 1957	20.98	June 10, 1965	24.71
Oct. 27	20.04	Mar. 8, 1961	23.04		
11N/8E-7Q3. Depth of well 442 ft March 17, 1953; 54.2 ft May 26, 1954; 12.2 ft June 10, 1965. Altitude about 1,035 ft.					
Mar. 17, 1953	75	Mar. 2, 1955	20.07	June 10, 1965	(f)
May 26, 1954	19.80	Mar. 7, 1957	20.01		
12N/6E-4G1. Depth of well 58.0 ft February 17, 1954; 16.2 ft November 1, 1962; 0 ft July 19, 1965. Altitude about 1,085 ft.					
Mar. 4, 1953	25.7	Mar. 2, 1955	26.12	Nov. 1, 1962	(f)
Feb. 17, 1954	26.1	Mar. 7, 1957	25.80	July 19, 1965	(p)
Oct. 26	26.25	Mar. 7, 1961	25.39		
12N/7E-18R1. Depth of well 133.9 ft February 19, 1954; 133.4 ft July 8, 1965. Altitude about 1,075 ft.					
Feb. 19, 1954	15.36	Mar. 11, 1958	16.98	Mar. 14, 1962	19.09
Oct. 26	15.51	Nov. 5	17.24	Nov. 1	19.56
Mar. 2, 1955	15.73	Mar. 11, 1959	17.55	Mar. 12, 1963	19.61
Nov. 3	15.87	Dec. 2	18.11	Mar. 7, 1964	19.98
Mar. 21, 1956	16.09	Mar. 3, 1960	18.26	Oct. 12	20.30
Oct. 31	16.22	Nov. 16	18.53	Mar. 9, 1965	20.45
Mar. 7, 1957	16.48	Mar. 7, 1961	18.81	July 8	20.45
Nov. 7	16.79	Oct. 26	18.89	Oct. 20	20.64

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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12N/7E-18R2. Depth of well 49.7 ft February 19, 1954; 48.2 ft July 8, 1965. Altitude about 1,075 ft.

Feb. 19, 1954	12.99	Mar. 11, 1958	14.65	Mar. 14, 1962	16.32
Oct. 26	12.88	Nov. 5	14.66	Nov. 1	16.32
Mar. 2, 1955	13.47	Mar. 11, 1959	15.06	Mar. 12, 1963	16.73
Nov. 3	13.42	Dec. 2	15.18	Mar. 7, 1964	17.19
Mar. 21, 1956	13.89	Mar. 3, 1960	15.41	Oct. 13	17.26
Oct. 31	13.99	Nov. 16	15.51	Mar. 9, 1965	17.57
Mar. 7, 1957	14.29	Mar. 7, 1961	15.82	July 8	17.69
Nov. 7	14.45	Oct. 26	15.87	Oct. 20	18.05

12N/7E-19H1. Depth of well 252 ft February 17, 1954; 218.5 ft July 7, 1965. Altitude about 1,080 ft.

Mar. 20, 1953	25	May 19, 1953	20	July 7, 1965	28.19
Mar. 20	a120	Feb. 17, 1954	26.33		

12N/7E-30J1. Depth of well 85 ft June 8, 1932; 80.0 ft February 17, 1954. Altitude about 1,100 ft.

June 8, 1932	30.5	Nov. 5, 1958	47.40	Nov. 1, 1962	49.64
Feb. 7, 1954	44.42	Mar. 11, 1959	47.58	Mar. 12, 1963	49.76
May 26	a60.0	Nov. 20	48.26	Oct. 29	50.05
Oct. 26	45.00	Mar. 3, 1960	48.22	Mar. 7, 1964	48.74
Mar. 3, 1955	44.98	Nov. 16	48.75	Oct. 13	50.38
Nov. 3	45.60	Mar. 7, 1961	48.80	Mar. 9, 1965	49.83
Mar. 21, 1956	45.76	Oct. 26	49.14	July 7	50.54
Oct. 31	45.67	Mar. 14, 1962	49.75	Oct. 20	50.69
Mar. 12, 1958	46.87				

12N/8E-27N2. Depth of well reported as 26.0 ft February 17, 1954. Altitude about 965 ft.

Feb. 17, 1954	18.40	Oct. 31, 1956	19.40	Jan. 6, 1960	23
May 26	18.64	Mar. 7, 1957	18.90	Mar. 3	19.30
Oct. 27	19.07	Mar. 12, 1958	18.84	Nov. 16	19.77
Mar. 2, 1955	18.53	Nov. 5	19.59	Mar. 7, 1961	19.48
Nov. 3	19.21	Mar. 11, 1959	19.14	Oct. 26	19.25
Mar. 22, 1956	18.70	Dec. 2	19.75	Mar. 14, 1962	19.63

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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12N/8E-27N2--Continued.

Nov. 1, 1962	20.08	Mar. 7, 1964	19.77	June 9, 1965	20.81
Mar. 12, 1963	19.68	Oct. 13	a23.44	Oct. 20	21.50
Oct. 29	20.10	Mar. 9, 1965	20.10		

12N/8E-35A1. Depth of well 10.0 ft May 26, 1954; 20.0 ft June 9, 1965. Altitude about 951 ft.

Jan. 29, 1932	5	Mar. 7, 1957	7.08	Oct. 13, 1964	8.10
May 26, 1954	6.80	Mar. 7, 1961	7.02	June 9, 1965	7.26
Mar. 2, 1955	6.55	Nov. 1, 1962	7.10	Oct. 20	7.95

13N/8E-1H1. Depth of well 400 ft in 1919; 136.0 ft February 18, 1954; 134.5 ft June 8, 1965. Altitude about 922 ft.

1919	19	Mar. 12, 1958	24.26	Nov. 1, 1962	24.34
Feb. 18, 1954	24.23	Nov. 6	24.48	Mar. 12, 1963	24.19
Oct. 27	24.43	Mar. 11, 1959	24.33	Oct. 29	24.16
Mar. 2, 1955	24.18	Dec. 2	24.40	Mar. 7, 1964	24.08
Nov. 3	24.43	Mar. 3, 1960	24.26	Oct. 13	25.53
Mar. 22, 1956	24.25	Nov. 16	24.43	Mar. 9, 1965	25.51
Oct. 31	24.37	Mar. 8, 1961	24.27	June 8	25.79
Mar. 7, 1957	24.22	Oct. 26	24.40	Oct. 20	25.85
Nov. 7	24.45	Mar. 14, 1962	24.22		

13N/9E-20J1. Depth of well 400 ft February 18, 1954. Altitude about 980 ft.

Feb. 18, 1954	65.82	Dec. 2, 1959	65.35	Mar. 12, 1963	65.53
Oct. 27	65.89	Mar. 3, 1960	65.56	Oct. 29	65.50
Mar. 2, 1955	65.71	Nov. 16	65.65	Mar. 7, 1964	65.48
Nov. 3	65.83	Mar. 8, 1961	65.53	Oct. 13	65.57
Mar. 22, 1956	65.70	Oct. 26	65.65	Mar. 8, 1965	65.46
Nov. 6, 1958	65.74	Mar. 14, 1962	66.57	June 8	65.49
Mar. 11, 1959	65.55	Nov. 1	65.60	Oct. 20	65.56

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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14N/8E-25R2. Depth of well 10.2 ft June 8, 1965. Altitude about 920 ft.

Feb. 18, 1954	34.45	Oct. 31, 1956	34.84	Mar. 11, 1959	34.70
Oct. 27	34.45	Mar. 7, 1957	34.50	Nov. 20	34.90
Mar. 3, 1955	34.42	Nov. 7	34.83	Mar. 3, 1960	34.64
Nov. 3	34.82	Mar. 12, 1958	34.61	Nov. 16	(f)
Mar. 22, 1956	34.55	Nov. 6	35.00	June 8, 1965	(f)

14N/9E-30A1. Depth of well reported 180 ft in 1955. Altitude about 1,000 ft.

Feb. 1955	100.5	July 9, 1958	105.5	July 27, 1959	106.5
Mar. 3	105.7	July 15	103.5	June 24, 1965	109.02

14N/9E-30F1. Depth of well reported 125 ft in 1947. Altitude about 960 ft.

Oct. 9, 1947	49	Feb. 17, 1954	63.0	July 18, 1963	63.5
Sept. 11, 1953	61.2	May 19, 1955	61.1		

14N/9E-30K1. Depth of well 104.3 ft February 17, 1954; 95.3 ft June 23, 1965. Altitude about 965 ft.

Apr. 15, 1953	75	Nov. 7, 1957	75.56	Mar. 15, 1962	76.12
Feb. 17, 1954	75.61	Mar. 12, 1958	75.38	Nov. 1	75.90
Oct. 27	75.54	Nov. 6	75.71	Mar. 12, 1963	75.63
Mar. 3, 1955	75.32	Mar. 11, 1959	75.50	Oct. 29	75.88
Sept. 26	75.2	Nov. 20	75.80	Mar. 7, 1964	75.57
Nov. 3	75.98	Mar. 3, 1960	75.56	Oct. 13	76.09
Mar. 22, 1956	75.59	Nov. 16	75.83	Mar. 9, 1965	75.84
Oct. 31	76.93	Mar. 8, 1961	75.62	June 23	76.10
Mar. 7, 1957	75.33	Oct. 26	75.89	Oct. 20	76.19
May 9	a75.9				

See footnotes at end of table.

Date	Water level	Date	Water level	Date	Water level
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15N/8E-22R1. Depth of well 200 ft in 1909; 120 ft February 18, 1954; 55.5 ft June 17, 1965. Altitude about 909 ft.

Feb. 18, 1954	55.92	Mar. 12, 1958	55.95	Nov. 1, 1962	56.14
Oct. 27	55.98	Nov. 6	56.03	Mar. 12, 1963	55.94
Mar. 3, 1955	55.87	Mar. 11, 1959	55.97	Oct. 29	56.08
Apr. 25	55.9	Nov. 20	55.97	Mar. 7, 1964	56.01
Nov. 3	55.91	Mar. 3, 1960	55.98	Oct. 13	56.13
Mar. 22, 1956	55.98	Nov. 16	56.08	Mar. 9, 1965	(m)
Oct. 31	56.12	Mar. 8, 1961	56.01	June 17	55.4
Mar. 7, 1957	55.93	Oct. 26	56.10	Oct. 20	(m)
Nov. 7	56.01	Mar. 14, 1962	55.99		

15N/8E-36F1. Depth of well 90 ft February 18, 1954; 3.8 ft June 16, 1965. Altitude about 920 ft.

Feb. 15, 1953	29	Mar. 3, 1955	36.34	Mar. 8, 1961	36.42
Feb. 18, 1954	36.44	Mar. 7, 1957	36.32	June 16, 1965	(f)

- a. Well being pumped.
- f. Dry.
- m. Obstruction in well above water surface.
- p. Well destroyed, filled to land surface.

APPENDIX C

TABLE 3. DRILLERS' LOGS OF WELLS



Table 3.--Drillers' logs of wells

Thickness Depth (feet) (feet)		Thickness Depth (feet) (feet)			
11N/7E-4D1. Tidewater Oil Co. Altitude about 1,110 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-410 ft. No casing installed in hole.					
Sand and gravel -----	30	30	Sand -----	30	230
Sand -----	10	40	Sand, gravel, and		
Gravel -----	35	75	clay -----	5	235
Sand -----	2	77	Clay, silty, pebbles		
Clay -----	5	82	¼- to ½-inch -----	14	249
Sand -----	3	85	Gravel -----	91	340
Sand and clay, some			Gravel with streaks		
silt -----	40	125	of clay -----	10	350
Sand -----	35	160	No record (cored) ----	5	355
Clay -----	5	165	Sand -----	45	400
Sand -----	20	185	Granite -----	10	410
Gravel -----	15	200			

11N/7E-4D2. Tidewater Oil Co. Altitude about 1,110 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-106.9 ft. No casing installed in hole.

Sand -----	10	10	Gravel -----	30	75
Pebbles, ¼- to ½-inch -	5	15	Sand -----	2	77
Sand, some small			Clay -----	5	82
pebbles at 27 feet --	15	30	Sand -----	3	85
Sand and pebbles -----	15	45	Sand and clay, some		
			silt -----	21.9	106.9

11N/7E-9D1. Tidewater Oil Co. Altitude about 1,125 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-640 ft. No casing installed.

Sand, fine to very			Sand, very fine with		
coarse -----	7	7	pebbles ¼- to		
Sand with pebbles -----	13	20	½-inch, and some		
Sand, fine to very			clay -----	30	75
coarse, trace of			Clay, becoming sandy		
clay -----	25	45	at bottom -----	25	100

Thickness		Depth		Thickness		Depth	
(feet)		(feet)		(feet)		(feet)	

11N/7E-9D1.--Continued

Sand, with small amount of clay -----	55	155	Sand with silt and clay -----	15	285
Sand, gravel, and boulders with very small amounts of clay -----	90	245	Sand -----	10	295
Sand -----	10	255	Sand and clay -----	5	300
Sand and silty clay ---	5	260	Sand -----	5	305
Sand -----	10	270	Sand and clay, silty -	285	590
			Silt and clay -----	10	600
			Boulders -----	30	630
			Basement of monzonite-	10	640

11N/7E-13R1. Loring McCormack. Altitude about 1,040 ft. Drilled by Scoggins Drilling Co. 16-inch casing 0-360 ft.

Sand -----	25	25	Gravel, boulders, and fine sand -----	450	475
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11N/8E-7Q1. Loring McCormack. Altitude about 1,035 ft. Drilled by Howard Pump Co. 24-inch hole 0-286 ft. No casing installed in hole.

Silt and sand -----	12	12	Sand, coarse -----	18	110
Sand, coarse, and lava sand -----	12	24	Clay -----	30	140
Sand and silt -----	38	62	Sand -----	11	151
Clay, bluish -----	30	92	Clay -----	102	253
			"Cavity" (?) -----	33	286

11N/8E-7Q2. Loring McCormack. Altitude about 1,035 ft. Drilled by Howard Pump Co. 14-inch casing 0-87 ft, 12-inch casing 87-230 ft.

Silt and sand -----	12	12	Sand, coarse -----	18	110
Sand, coarse, and lava sand -----	12	24	Clay -----	30	140
Sand and silt -----	38	62	Sand -----	11	151
Clay, bluish -----	30	92	Clay, bluish -----	134	285
			"Cavity" (?) -----		285+

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

11N/8E-7Q3. Loring McCormack. Altitude about 1,035 ft. Drilled by Scoggins Drilling Co. 16-inch casing 0-442 ft. Perforated 75-442 ft.

Sand, fine -----	25	25	Sand, fine, and gravel -----	417	442
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11N/8E-10E1. C. C. Klingerman. Altitude about 985 ft. 7-inch casing 0-276 ft.

No record -----	130	130	Clay -----	146	276
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11N/8E-18H1. L. B. Joralman. Altitude about 1,030 ft. 8-inch casing, perforated 33-34 ft, 77-80 ft, 110-114 ft, 116-118 ft, and 119-125 ft.

Soil -----	9	9	Clay, blue -----	8	95
Clay -----	7	16	Sand -----	13	108
Sand -----	9	25	Gravel -----	2	110
Clay -----	2	27	Sand, coarse -----	1	111
Sand -----	1	28	Clay, blue -----	3	114
Clay -----	4	32	Sand -----	2	116
Sand, coarse -----	3	35	Sand, coarse -----	2	118
"Quicksand" -----	23	58	Clay, blue -----	1	119
Clay, blue -----	5	63	Sand, coarse -----	6	125
Sand, blue -----	2	65	Clay, blue -----	2	127
Clay, blue -----	5	70	Sand -----	7	134
Sand, blue -----	1	71	Clay -----	3	137
Clay, blue, hard -----	6	77	Sand -----	5	142
Sand, coarse -----	3	80	Clay -----	2	144
Clay, blue -----	3	83	Sand -----	4	148
Sand -----	4	87	Clay -----	6	154

11N/8E-18J1. A. J. Ingalls. Altitude about 1,030 ft. 8-inch casing.

No record -----	26	26	Clay, blue -----	33	79
Sand, gravel, and clay-	19	45	No record -----	1	80
No record -----	1	46	Gravel -----	10	90

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

11N/9E-16H1. Los Angeles and Salt Lake Railroad. Altitude about 1,045 ft. 14-inch casing.

Sand and clay -----	55	55	Sand and clay -----	15	175
Gravel -----	33	88	Sand -----	30	205
Sand and gravel -----	72	160	Boulders -----	7	212

11N/10E-20Z1. Los Angeles and Salt Lake Railroad. Altitude about 1,235 ft. 14- and 12-inch casing to unknown depth.

Sand and boulders -----	105	105	Sand and boulders -----	10	205
Sand, hard -----	12	117	Granite -----	41	246
Sand -----	78	195			

11N/10E-29B1. Union Pacific Railroad. Altitude about 1,240 ft. Drilled by Roscoe Moss Drilling Co. 16-inch casing 0-400 ft.

Sand, gravel, and boulders -----	45	45	Gravel, brown and sandy -----	87	215
Sand and gravel, cemented -----	8	53	Clay, yellow -----	121	336
Clay, brown and sandy; gravel -----	32	85	Clay, yellow; sand, brown -----	29	365
Clay, gray and sandy, with small amount of gravel -----	43	128	Clay, sandy and yellow -----	19	384
			Rock -----	16	400

12N/6E-5A1. Tidewater Oil Co. Altitude about 1,107 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-680 ft. No casing installed in hole.

Sand and gravel, with interbedded clay ----	40	40	Gravel -----	45	210
Gravel -----	55	95	Gravel, with stringers of sand -----	50	260
Gravel and sand -----	25	120	Sand, silt, and clay -	10	270
Sand -----	10	130	Sand and gravel -----	230	500
Gravel, some silty sand with depth ----	20	150	Sand -----	70	570
Sand -----	15	165	Sand and gravel -----	110	680

	Thickness (feet)	Depth (feet)
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12N/7E-18Z1. Tidewater Oil Co. Altitude about 1,075 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-765 ft. No casing installed in hole.

Clay, yellow-brown, silty and plastic, color change to gray-green with depth -----	66	66
Clay, green-gray, silty, plastic, interbedded with thin sand stringers -----	14	80
Sand, fine to very coarse, interbedded with clay -----	84	164
Sand, medium-grain -----	6	170
Sand, with trace of silty clay -----	20	190
Sand, medium to very coarse, interbedded with silty clay ---	80	270
Clay, brown, silty and plastic, with some interbedded sand stringers -----	30	300
Sand, medium, some pebbles, trace of clay -----	182	482
Sand, medium, some pebbles -----	78	560
Sand, fine to very coarse, with minor amount of clay and silty clay -----	60	620
Sand and silty clay -----	40	660
Clay, silty, with thin beds of sand -----	95	755
Quartz monzonite, very hard drilling -----	10	765

12N/7E-19H1. I. A. Himes. Altitude about 1,080 ft. Drilled by Howard Pump Co. 12-inch casing 0-252 ft, perforated 159-252 ft.

Silt -----	38	38
Clay and sand streaks -----	14	52
Bentonite -----	9	61
Sand, fine; clay; streaks of boulders -----	30	91
Clay, dark blue -----	67	158
Gravel with streaks of clay -----	15	173
Rocks (loose) -----	8	181
Earth and clay -----	1	182
Rocks (loose) -----	10	192
Earth and clay -----	3	195
Rocks (loose) -----	2	197
Earth and clay -----	54	251
Clay -----	1	252

Thickness Depth (feet) (feet)		Thickness Depth (feet) (feet)	
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12N/7E-29B3. G. T. Roberts. Altitude about 1,090 ft. 12-inch casing, perforated 75-80 ft, 84-116 ft, 118-126 ft, and 128-142 ft.

Silt and sand -----	12	12	Sand -----	1	60
Silt -----	6	18	Clay and sand -----	6	66
Clay, soft -----	7	25	Sand and gravel -----	9	75
Sand -----	4	29	Gravel -----	5	80
Clay -----	16	45	Sand, fine -----	4	84
Sand, hard -----	5	50	Gravel -----	32	116
Sand and gravel -----	2	52	"Quicksand" -----	2	118
Clay -----	4	56	Sand and gravel -----	8	126
Sand -----	1	57	"Sandrock" -----	2	128
Clay -----	2	59	Sand and gravel -----	14	142

12N/7E-31R1. Tidewater Oil Co. Altitude about 1,135 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-520 ft. No casing installed in hole.

Sand and gravel -----	114	114	Sand and gravel -----	160	420
Clay -----	4	118	Clay, silty, green ---	10	430
Silt, sand, and gravel-	45	163	Pebbles and cobbles --	60	490
Gravel and sand -----	97	260	Granite (bedrock) ----	30	520

12N/8E-28Z1. Tidewater Oil Co. Altitude about 980 ft. Drilled by Scott Bros. Drilling Co. 6-inch hole 0-118 ft. No casing installed in hole.

Sand, medium to very coarse, subrounded, composed of quartz, feldspar, ferromagnesium minerals, with some thin beds of silty clay -----	50	50
Clay, green-gray, very silty and plastic, with sand, medium to very coarse, subrounded to subangular, composed of quartz and feldspar -----	15	65
Clay, blue-gray, silty, trace of mica, plastic, very calcareous -----	45	110
Basement, andesite, soda feldspar, biotite, and hornblende -----	8	118

14N/9E-20N2. C. Huffman. Altitude about 1,020 ft. Drilled by Leroy Tyler. 8-inch casing 0-202 ft, perforated 155-202 ft.

Sand, clay, and rock -----	30	30
Sand and gravel -----	17	47
Sand and clay -----	15	62
Sand and gravel -----	38	100
Sand and clay -----	10	110
Sand and gravel -----	25	135
Clay and gravel -----	17	152
Sand and gravel -----	50	202

Thickness		Depth		Thickness		Depth	
(feet)		(feet)		(feet)		(feet)	

14N/9E-30A1. State Highway Dept. Altitude about 1,000 ft. Drilled by J. B. Henderson. 12-inch casing 0-180 ft.

Sand, gravel, and clay -----	40	40	Gravel and rock -----	14	72
Sand, cemented -----	3	43	Sand -----	9	81
Sand, gravel, and clay -----	12	55	Sand and clay -----	24	105
Gravel -----	3	58	Sand, cemented -----	3	108
			Gravel and rock -----	31	139
			Sand and clay -----	41	180

14N/9E-30E1. Yermo School District. Altitude about 950 ft. Drilled by Ephraim Harris. 12-inch casing 0-125 ft, perforated 99-106 ft and 117-120 ft.

Sand, gravel, and clay soil; gray and soft -----	75	75
Sand, and gravel to 3 inches -----	11	86
Sand, dirty and soft, and clay, buff-colored -----	7	93
Sand, and gravel to 3 inches -----	13	106
Sand, dirty and soft, and clay, buff-colored -----	11	117
Sand, coarse, gray, and gravel -----	3	120
Sand, hard, packed, and clay -----	5	125

14N/9E-30F1. Charles F. Brown. Altitude about 960 ft. Drilled by Ephraim Harris. 12-inch casing 0-125 ft, perforated 85-102 ft and 111-123 ft.

Soil and gravel -----	40	40
Clay and hard sand -----	23	63
Sand and gravel -----	3	66
Sand and mud -----	19	85
Sand, hard, packed, and gravel -----	17	102
Sand, fine, and mud -----	9	111
Sand and gravel, small -----	12	123
Clay and sand -----	2	125

14N/9E-30L1. Jay Hadlock. Altitude about 950 ft. Drilled by Howard Pump Co. 6-inch casing.

Clay, sand, and boulders -----	127	127
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Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

14N/9E-30P1. Mr. Failing. Altitude about 965 ft. Drilled by Ephraim Harris. 10-inch casing 0-235 ft, perforated 200-206 ft, 216-220 ft, and 224-232 ft.

Sand -----	11	11	Sand and gravel -----	6	206
Silt, sandy -----	59	70	Sand, hard, packed ---	10	216
Sand and gravel -----	3	73	Sand and gravel -----	4	220
Sand and silt -----	19	92	Clay -----	3	223
Sand, silt, and some gravel -----	58	150	"Cement" -----	1	224
Gravel and sand -----	2	152	Sand and gravel, small -----	8	232
Sand, hard, packed ----	48	200	Clay, soft -----	3	235

14N/9E-30P2. Mr. Failing. Altitude about 965 ft. Drilled by Ephraim Harris. 12-inch casing 0-250 ft, perforated 198-220 ft and 236-250 ft.

Sand -----	12	12	Silt, fine, hard, packed -----	10	190
Sand, gravel, and dirt -----	48	60	Sand and gravel -----	4	194
Sand and gravel, some hard-packed and some loose -----	32	92	Silt, fine, hard, packed -----	4	198
Sand, hard-packed, and silt -----	8	100	Sand and gravel -----	22	220
Sand, silt, and gravel, gray -----	77	177	"Cement," sand, and silt -----	16	236
Sand and gravel -----	3	180	Sand, gravel, and layers of "cement" --	14	250

14N/9E-30Z1. Mr. Failing. Altitude about 920 ft. Drilled by Ephraim Harris. No casing installed in hole.

Sand, clean -----	18	18	Gravel, sand, and clay, hard, tight, cemented -----	25	440
Silt, sandy, gravel, and dirt -----	132	150	Rocks and sand, hard -	10	450
Clay (lakebed) -----	150	300	Sand, hard, packed, fine -----	6	456
Clay with little sand increasing in amount and coarseness in depth -----	25	325	Clay, rocks, and "cement" -----	28	484
Gravel, sand, and clay, cemented -----	37	362	Rocks and clay -----	7	491
Gravel, sand and clay, cemented -----	53	415	Sand and rocks, hard-packed -----	11	502

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

15N/6E-11Q1. Colorado Fuel and Iron Co. Altitude 2,407.5 ft. No casing installed in hole.

No record -----	31	31	Quartzite -----	5	62
Andesite, red silt, and sandstone -----	6	37	Conglomerate, some granitic rocks -----	10	72
Sandstone and magnetite breccia --	1	38	Granitic rock and porphyritic		
Magnetite, massive ---	5	43	andesite -----	10	82
No record -----	14	57			

15N/6E-11R1. Colorado Fuel and Iron Co. Altitude 2,415.5 ft. No casing installed in hole.

Magnetite breccia, stained by copper -----	6	6			
No record -----	31	37			
Magnetite breccia -----	5	42			
No record -----	2	44			
Magnetite breccia, impure with some dolomite -----	3	47			
Magnetite breccia, quartz monzonite, amphibole rock, and dolomite -----	1	48			
Magnetite breccia -----	4	52			
Magnetite breccia, considerable dolomite, and calcite "cement" -----	3	55			
Magnetite breccia and limestone -----	2	57			
Magnetite breccia, conglomerate, quartzite, and red sandstone -----	5	62			
Magnetite breccia, dolomite, quartzite, and sandstone -----	10	72			
Magnetite breccia -----	5	77			
Magnetite breccia and dolomite -----	5	82			
Magnetite breccia -----	10	92			
Clay, pink -----	5	97			
Conglomerate and quartz monzonite boulders -----	10	107			
Dolomite and andesitic basalt -----	5	112			

Thickness Depth		Thickness Depth	
(feet)	(feet)	(feet)	(feet)

15N/6E-14A1. Colorado Fuel and Iron Co. Altitude about 2,376 ft.  
No casing installed in hole.

No record -----	6	6	Shale, sandstone,		
Magnetite breccia ----	4	10	and a little		
No record -----	17	27	magnetite -----	5	61
Silicated dolomite,			Magnetite breccia, and		
a little magnetite			a little dolomite --	5	66
breccia -----	5	32	Sandstone -----	6	72
No record -----	5	37	Sandstone, conglom-		
Quartz monzonite			erate, and a little		
(conglomerate?) ----	5	42	copper stain -----	5	77
No record -----	5	47	No record -----	17	94
Sandstone, grit -----	5	52	Sandstone, and		
No record -----	4	56	conglomerate -----	3	97

15N/6E-14A2. Colorado Fuel and Iron Co. Altitude about 2,300 ft.  
No casing installed in hole. Inclined 45 degrees.

Sandstone -----	18	18	Limestone and		
Sandstone and clay ----	23	41	andesite -----	10	81
No record -----	5	46	No record -----	10	91
Magnetite breccia ----	15	61	Limestone -----	5	96
Limestone -----	5	66	Conglomerate -----	8	104
No record -----	5	71			

15N/6E-14A3. Colorado Fuel and Iron Co. Altitude 2,384.5 ft.  
No casing installed in hole.

Magnetite breccia ----	11	11	Magnetite breccia ----	5	52
No record -----	1	12	No record -----	15	67
Magnetite breccia ----	10	22	Magnetite breccia ----	5	72
Magnetite breccia			No record -----	5	77
with a little			Magnetite breccia ----	19	96
limestone -----	3	25	No record -----	21	117
Limestone -----	7	32	Sandstone,		
No record -----	15	47	conglomerate -----	5	122

Thickness Depth (feet) (feet)		Thickness Depth (feet) (feet)	
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15N/6E-14A4. Colorado Fuel and Iron Co. Altitude about 2,279 ft.  
No casing installed in hole. Inclined 45 degrees.

No record -----	15	15	Magnetite breccia ----	10	71
Clay, red, and sand- stone -----	5	20	Magnetite breccia, sandstone -----	5	76
Clay (gouge?) -----	5	25	Grit. sandstone -----	10	86
Clay and sandstone ----	6	31	No record -----	5	91
Sandstone, grit, magnetite breccia cemented with lime --	10	41	Sandstone and clay ---	5	96
Magnetite breccia -----	10	51	Conglomerate -----	5	101
No record -----	5	56	Sandstone, conglom- erate -----	10	111
Magnetite breccia, much calcite -----	5	61	No record -----	7	118
			Grit, sandstone -----	7	125

15N/6E-14A5. Colorado Fuel and Iron Co. Altitude about 2,330 ft.  
No casing installed in hole.

Magnetite breccia -----	10	10	Magnetite breccia, mostly conglomerate, sandstone, and grit -----	5	101
Andesite -----	4	14	Conglomerate, sand- stone and grit -----	5	106
Magnetite breccia -----	18	32	Sandstone -----	5	111
Magnetite breccia, with a little admixed silicate rock (hornfels) -----	4	36	Conglomerate and sandstone -----	10	121
Magnetite breccia -----	10	46	Shale and sandstone --	4	125
No record -----	3	49	Siltstone and conglomerate -----	2	127
Magnetite breccia -----	7	56			
No record -----	5	61			
Magnetite breccia -----	35	96			

15N/6E-14A6. Colorado Fuel and Iron Co. Altitude about 2,256 ft.  
No casing installed in hole.

No record -----	10	10	Sandstone, silty, and conglomerate -----	11	59
Grit -----	5	15	Sandstone, silty, and grit -----	7	66
No record -----	13	28	No record -----	4	70
Sandstone, grit, and siltstone -----	10	38	Grit -----	16	86
Sandstone -----	10	48			

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
15N/6E-14A6.--Continued					
Conglomerate and sandstone -----	5	91	Sandstone -----	20	176
Sandstone -----	10	101	Grit and sandstone ---	10	186
Conglomerate and sandstone -----	5	106	Sandstone -----	10	196
Siltstone and sandstone -----	10	116	No record -----	10	206
Sandstone and grit ----	10	126	Sandstone and grit ---	10	216
Conglomerate, grit, and sandstone -----	30	156	Grit -----	10	226
			No record -----	6	232
			Sandstone -----	11	243
			No record -----	7	250

15N/6E-14A7. Colorado Fuel and Iron Co. Altitude about 2,305 ft. No casing installed in hole.

Magnetite breccia, lime "cement," a few greenstone and dolomite -----	32	32	Magnetite breccia and some admixed limestone -----	15	86
No record -----	2	34	Magnetite breccia ----	5	91
Magnetite breccia ----	5	39	Quartzite, magnetite breccia, and limestone (conglomerate) -----	5	96
Magnetite breccia, and actinolite rock ----	6	45	No record -----	6	102
Magnetite breccia ----	16	61	Sandstone -----	10	112
A little magnetite breccia and considerable limestone -----	5	66	Sandstone, grit, and conglomerate with granite pebbles ----	10	122
No record -----	5	71			

15N/6E-14A8. Colorado Fuel and Iron Co. Altitude 2,362.5 ft. No casing installed in hole.

No record -----	6	6	Sandstone -----	6	47
Actinolite rock and magnetite breccia ---	3	9	Conglomerate with quartz monzonite fragments -----	5	52
Dolomite, amphibole rock and magnetite breccia -----	3	12	Conglomerate -----	5	57
Magnetite breccia ----	9	21	Quartzite, conglomerate, and sandstone -----	5	62
Magnetite breccia, 8-inch amphibole rock core -----	5	26	No record -----	3	65
Magnetite breccia ----	10	36	Conglomerate and sandstone -----	7	72
Conglomerate and sandstone -----	5	41	Sandstone -----	5	77

	Thickness (feet)	Depth (feet)
15N/6E-14H1. Colorado Fuel and Iron Co. Altitude 2,252.5 ft. No casing installed in hole. Inclined 60 degrees.		
Magnetite breccia, cemented by lime -----	4	4
Magnetite breccia, with a little dolomite in fragments -----	5	9
Magnetite breccia, with a little andesite in fragments -----	6	15
Magnetite breccia -----	2	17
Magnetite breccia, with about 30 percent calcite "cement," some andesite fragments -----	5	22
No record -----	3	25
Magnetite breccia -----	5	30
Magnetite breccia, with some admixed clay -----	6	36
Andesite breccia, with considerable magnetite -----	8	44
No record -----	2	46
Andesite -----	5	51
No record -----	5	56
Andesite -----	5	61
Andesite breccia, with some magnetite -----	5	66
Limestone breccia, magnetite breccia, and dolomite breccia --	3	69
Magnetite breccia -----	6	75
No record -----	6	81
Magnetite breccia -----	10	91
No record -----	15	106
Magnetite breccia -----	10	116
Magnetite, siltstone, and green sandstone -----	4	120
Magnetite, breccia, green sandstone, and siltstone -----	5	125
Andesite, green; sandstone, and andesite -----	5	130
Tuff, green, and magnetite -----	5	135
Quartzite, dolomite, magnetite breccia and grit (probable conglomerate) -----	5	140
Conglomerate and sandstone -----	5	145
No record -----	5	150
Sandstone and grit -----	2	152
No record -----	3	155
Sandstone and grit -----	6	161
Sandstone -----	10	171
Sandstone and quartzite -----	5	176
Sandstone and granite (conglomerate) -----	5	181
Sandstone -----	5	186
No record -----	5	191
Sandstone and conglomerate -----	14	205
No record -----	6	211
Sandstone -----	6	217
No record -----	7	224
Sandstone -----	5	229
No record -----	10	239
Conglomerate -----	3	242
No record -----	8	250

	Thickness (feet)	Depth (feet)
15N/6E-14H2. Colorado Fuel and Iron Co. Altitude 2,278.5 ft. No casing installed in hole. Inclined 45 degrees.		
Sandstone, little magnetite in rubble -----	5	5
No record -----	5	10
Magnetite breccia, cemented by calcite, limonite, perhaps 10 percent greenstone (volume) -----	5	15
Magnetite breccia, somewhat porous (5 percent?), calcite "cement" -----	11	26
Volcanic breccia -----	4	30
Magnetite, a little dolomite, a little green sandstone -----	4	34
Limonite and magnetite breccia, much calcite "cement" (30 percent) -----	4	38
Hematite-magnetite breccia, much calcite "cement" -----	3	41
Magnetite, massive -----	1	42
Magnetite breccia -----	5	47
Andesite and a little magnetite -----	7	54
No record -----	7	61
Magnetite, little core, but with some amphibole rock -----	5	66
Magnetite breccia, calcite "cement," and some dolomite fragments -----	10	76
Andesite, a little magnetite -----	3	79
Andesite -----	1	80
Andesite, with some dolomite -----	5	85
Andesite, little magnetite -----	6	91
Magnetite breccia, some dolomite -----	4	95
No record -----	11	106
Magnetite breccia, a little actinolite rock, and copper stains -----	5	111
Magnetite breccia, limonite breccia, and a little andesite -----	5	116
Magnetite breccia, and a little limonitic clay -----	3	119
No record -----	5	124
One small bit of magnetite only recovery -----	6	130
No record -----	5	135
Siltstone, pink -----	6	141
Sandstone, and a little quartzite (conglomerate) -----	5	146
Sandstone, andesite, and quartz monzonite (conglomerate) ---	6	152

15N/8E-36F1. Silver Lake Airport. Altitude about 920 ft. Drilled by Ephraim Harris. 6-inch casing 0-90 ft, perforated 70-90 ft.

Sand, very little clay -----	90	90
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APPENDIX D

TABLE 4. CHEMICAL ANALYSES OF WATER FROM WELLS





Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm)														pH	Specific conductance (micromhos at 25°C)	Analyzing Laboratory and sample number				
				Silica (SiO <sub>2</sub> )	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO <sub>3</sub> )	Carbonate (CO <sub>3</sub> )	Sulfate (SO <sub>4</sub> )	Chloride (Cl)	Fluoride (F)	Nitrate (NO <sub>3</sub> )	Baron (B)	Calculated (Sum of determined constituents)				Residue on evaporation at 180°C	Hardness as CaCO <sub>3</sub>	Noncarbonate hardness as CaCO <sub>3</sub>	Percent sodium
U.S. Public Health Service drinking-water standards (1962)																								
12N/7E-08B	1-1-51	37.5		59	0.11	5.0	1.0	224		307	36	94	250	1.0	45	500	500	681	17	97	97	WR-1009		
12N/7E-08C	12-1-51			46	.23	29	4.8	2158		367	0	64	48		.4	659	531	537	92	92	92	WR-1011		
12N/7E-08D	6-20-54	85	73		.06	30	6.9	136		3317		67	55		1.9	426	45	45	100	75	75	DA-6385	8.4	744
12N/7E-08E	1-7-57		74		.06	30	4	145		323	0	68	65		6.6	484	250	250	91	76	76	DWR-R118	7.8	778
12N/7E-08F	1-7-57				.06	30	2	157		314	0	66	60		1.4	479	510	510	83	79	79	DWR-R1506	7.6	892
12N/7E-08G	1-1-56	60		12	.26	16	7.2	2110		1,070	0	740	643		T	3,000	3,130	3,130	70	97	97	WR-1010		
12N/7E-11F1	7-1-74		75		20	2	226		273	0	310	755	10		8.9	1,980	2,010	2,010	58	95	95	DWR-R637	7.7	5,120
12N/7E-11F2	10-8-50		75		16	3.8	3.8	717		261	0	317	750	8.0	6.8	2,010	2,010	2,010	56	96	96	DWR-10794	7.7	3,470
11L2	7-14-53				.32	5.2	5.2	797		360		366	824		T	2,200	2,210	2,210	101	94	94	DA-6461	7.8	4,530
11L1	1-1-50	103	78		.13	18	6.3	658		229		316	688		1.0	1,880	1,930	1,930	71	99	99	WR-1008		
11L2	4-1-51		74		.18	18	3	674		250	0	322	675	9.7	12.9	1,850	1,860	1,860	57	95	95	DWR-R656	7.8	3,030
27R1	1-7-19	11.5		71	.05	21	4.4	227		365	1	108	105		.7	718	744	744	70	87	87	WR-953	8.2	877
27R1	6-8-32	11		50	.24	24	6.0	188		336	0	75	69		2.5	522	524	524	63	78	78	DA-6384	8.1	740
27R1	1-12-53		72		.06	24	3.7	160		284	0	55	81		1.5	509	527	527	75	81	81	FO-2015	8.1	830
27R1	1-26-54				.06	24	5	154		299	0	68	78		2.2	485	554	554	80	80	80	DWR-P652	7.7	820
27R1	1-6-51		71		.12	6	4	226		488	0	9	123	3.0	1.5	654	605	605	26	82	82	DWR-11153	7.2	1,170
27R1	1-25-3E		71		7	7	5.5	210		354	0	65	74		3.1	540	543	543	40	92	92	DA-5599	8.6	903
37A1	1-26-54	10.1		64	.45	44	3.6	290		488	0	109	106	4.0	0	762	800	800	22	90	90	DWR-4326	8.0	1,270
37A1	1-26-54	34.1	71		3.8	8	1	290		564	10	41	110	4.0	1.1	752	778	778	24	95	95	DWR-4327	8.3	1,260
27R/3E-4B1	10-8-59		74		40	18	7	273		237	0	128	240	3.0	4.6	834	785	785	74	88	88	DWR-10768	7.6	1,350
13N/7E-20R1	2-26-57		75		81	14	7.2	185		220	0	606	246		2.8	1,570	1,620	1,620	64	92	92	WR-485	8.1	3,070
13N/7E-20R1	7-17-57				.20	14	44	2640		234	3	686	431	8.0	.3	2,000	2,020	2,020	125	92	92	E-43-4957	7.6	3,070
13N/7E-20R1	1-1-54	4.1		16	.10	12	10	2315		184	4	318	177	4.0	1.4	966	984	984	70	88	88	E	8.1	
13N/7E-20R1	1-5-57		75		10	36	56	1,500		305	0	24	2,350	.8	22	4,170	4,170	4,170	322	91	91	DWR-10795	7.8	7,530
13N/7E-20R1	1-1-57				.2	13	7	280		152	12	121	252		.25	800	780	780	55	91	91	H-65319	8.3	1,360
13N/7E-20R1	5-15-53	4.0		64	.45	62	50	591		198	0	108	270	4.0	1.8	2,010	2,140	2,140	360	78	78	DWR-3140	8.0	3,180
13N/7E-20R1	6-17-54				.32	108	88	2623		153	6	153	1,100		10	2,250	2,300	2,300	631	68	68	DWR-R691	8.4	3,180
14N/7E-20Q1	4-1-57	36.1		52	.32	27	23	1,160		271	0	239	1,560		20	3,160	3,160	3,160	160	94	94	WR-458	8.3	5,120
27R1	7-14-52	4.0		32	.142	107	107	759		217	0	188	1,880	1.6	19	2,800	3,080	3,080	795	61	61	DA-6462	8.3	5,120
36A1	1-28-61			23	.2	140	104	1,020		219	0	265	1,300		.96	3,660	4,540	4,540	1,000	69	69	DWR-R4160	7.9	5,180
36A1	3-7-53			43	.153	151	143	1,000		250	0	258	1,880	2.0	16	3,660	4,540	4,540	1,000	67	67	SOE	7.7	5,230
36A1	5-4-64			42	.182	143	143	1,000		254	0	258	1,930	2.0	21	3,730	3,890	3,890	1,040	67	67	DWR-L4566	8.1	6,200
36A1	5-4-64			42	.182	143	143	1,000		254	0	258	1,930	2.0	21	3,730	3,890	3,890	1,040	67	67	DWR-L6747	7.8	5,800

Well number	Date of collection	Depth of well (feet)	Water temperature (°F)	Results in parts per million (ppm)													pH	Specific conductance (micromhos at 25°C)	Analyzing laboratory and sample number					
				Silica (SiO <sub>2</sub> )	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO <sub>3</sub> )	Carbonate (CO <sub>3</sub> )	Sulfate (SO <sub>4</sub> )	Chloride (Cl)	Fluoride (F)	Nitrate (NO <sub>3</sub> )	Baron (B)				Calculated (Sum of determined constituents)	Residue on evaporation at 180°C	Hardness as CaCO <sub>3</sub>	Noncarbonate hardness as CaCO <sub>3</sub>	Percent sodium
U.S. Public Health Service drinking-water standards (1962)																								
14N/BE-468C	10-20-61	14'		0.3	108	81	816	14	259	0	203	1,380	250	1.0	45	0.6	2,800	2,990	605	393	74	4,860	7.8	DWR-R4161
14N/BE-7082	3-31-60			0.6	18	18	256	6.4	334	0	161	217	250	0.5	31	1.6	679	808	118	8	81	1,640	8.2	PH
30E1	4-15-60				13	14	350	8.2	0	0	167	27	250	3.0	9.4	96	1,010	979	90	0	48	1,640	8.2	DWR-3136
34E1	3-15-61			0.15	35	40	317	12	320	0	223	317	250	0.5	8.9	1.4	1,120	1,170	254	254	73	1,930	7.8	FC-1580
	3-11-61				30	34	280	12	300	7	200	282	250	1.4	13	1.2	1,010	1,050	212	8	73	1,790	8.2	DWR-3197
	5-6-64				34	34	297	12	307	0	214	284	250	1.7	17	1.0	1,010	1,090	216	0	74	1,600	8.2	DWR-F569
	7-1-64				30	30	270	12	314	14	178	266	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	DWR-R306
	7-1-64				30	30	270	12	288	0	254	254	250	0.8	13	2.0	967	1,010	211	0	73	1,430	7.8	D



APPENDIX E

TABLE 5. PUMPING TESTS OF WELLS



Table 5.--Pumping tests of wells

Source of data: D driller; DA U.S. Department of Agriculture;  
DGT Thompson (1929); DWR California Department of Water Resources;  
GS U.S. Geological Survey; O owner; SCE Southern California  
Edison Co.

Depth of well: The depth shown is the depth of the well, in feet,  
reported by the person making the test.

Pumping rate: The pumping rate, reported in gallons per minute (gpm),  
does not necessarily indicate the maximum capacity of the well, but  
is the rate at which the well was pumped at the time of the test.

Water level: The static, or standing, water level is the reported  
depth to water at the time of the test. If the static water level  
was not made prior to the test, the pumping water level has been  
shown and footnoted.

Drawdown: The drawdown is the difference, in feet, between the static  
water level and the pumping water level.

Specific capacity: The specific capacity is a measure of the physical  
condition of the well and the aquifer or aquifers which it penetrates.  
A well with a large specific capacity is capable of a greater yield  
than a well with a small specific capacity. Specific capacity is  
obtained by dividing the pumping rate, in gallons per minute, by the  
drawdown, in feet, after an extended period of pumping.

Well number	Source of data	Depth of well (feet)	Date tested	Pumping rate (gpm)	Static water level (feet)	Drawdown (feet)	Specific capacity (gpm/ft of dd)
11N/7E-13R1	D	475	1953	400	75	75	5.3
11N/8E-7J1	DGT-23	150	12- 6-19	225	5.3		
7P1	DGT-21	23	12- 7-19	20	8.9	1	20.0
7Q3	D	442	3-17-53	1,000	75	75	13
10E1	D	276	1919	160	6		
18G1	DGT-30a	80	1919	150	a30		
18H1	DGT-30	154	12- 7-19	180	3.0		
18J1	DGT-31	90	1919	100	a30	17	5.9
11N/10E-20Z1	DGT	246	10-28-15	125	196	10	12.5
29B1	O			210		82	2.5
12N/7E-17P1	DGT-35	150	1919	540	12		
19H1	D	252	7- -52	400 470 500 550 600 620	a65 a75 a85 a87 a89 a90		
29A1				50			
29B1	DGT-38	85.5	12- 5-19	225	21.3		
29B3	DGT-39	133.7	12- 5-19	300	22.0		
30J1	DA	85	6- 8-32	44	30.5		
12N/8E-11F1	DWR GS	7.1	4- 7-55 6- 9-65	20 10	(b) .52		
11F2	GS	12	10-27-54	15	(b)		
11L1	DGT-10	103	12- 7-19	90	(b)		
11Z1	DGT	39	9- 9-17	150	(b)		

See footnotes at end of table.

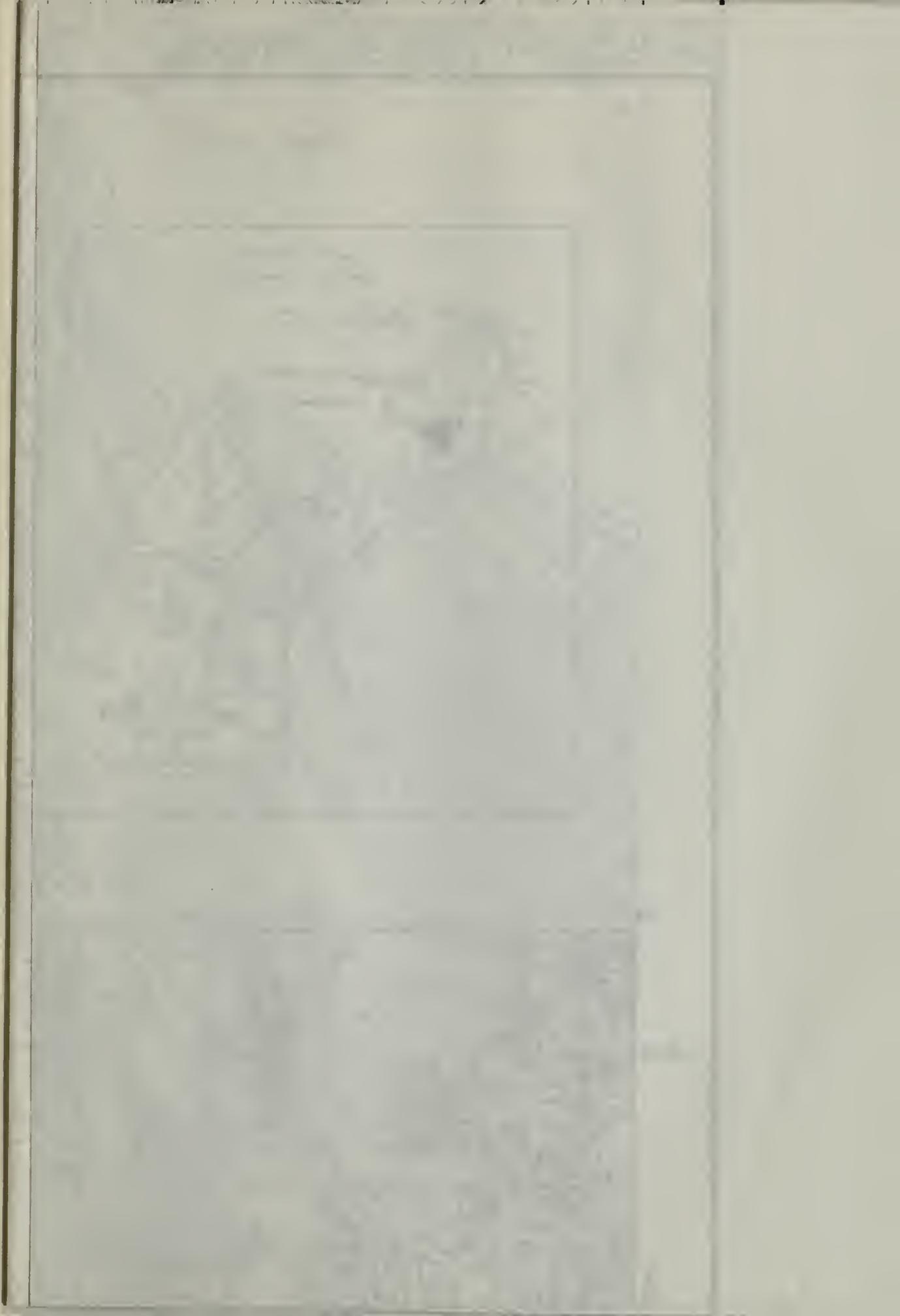
Well number	Source of data	Depth of well (feet)	Date tested	Pumping rate (gpm)	Static water level (feet)	Drawdown (feet)	Specific capacity (gpm/ft of dd)
12N/8E-22A1	GS	5.1	6- 8-65	0.04	b4.00		
27N1	DGT-12	17.8	12- 7-19	100	12.6		
13N/5E-10R1	DGT		2-26-18	2	(b)		
18L1	D	430	1- -44		185		
				54	a221	36	1.5
				70	a238	53	1.3
				76	a240	55	1.4
				95	a252	67	1.4
				100	a270	85	1.2
				105	a292	107	.98
13N/9E-20J1	DWR		4- -55	1,700			
14N/8E-25P1	GS	65	6-25-65	2.5	49.77		
25Q1	DGT-6	36.5	9- 9-17	7	34.7		
36B1	GS	175	6-25-65	18	28.15		
14N/9E-30A1	D	180	2- -55	20	100.5		
30F1	DWR		9-11-53	30	61.2		
	GS	125	2-17-54	110			
	SCE		7-18-63	89	63.5	5.5	16
30F2	GS	206	6-26-65	25	63.11		
30K1	DWR		5- 9-57	5	a75.9		
14N/11E-7E1	DGT		1917	1	(b)		
	GS		7- 8-65	(c)	b6		
15N/8E-15Q1	O		11- 9-64	60	137		
15Q2	O		5-19-65	60	142		
22K1	DGT-2		1917	15			
15N/10E-14L1	DGT	3	8-23-16	.25	(b)		
28K1	DWR	202	5-27-55	20	165		
15N/11E-17K1	GS	d130	7- 8-65	40	62.95		

a. Pumping water level.  
d. Inclined shaft.

b. Flowing.

c. Flowing less than 1 gpm.







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