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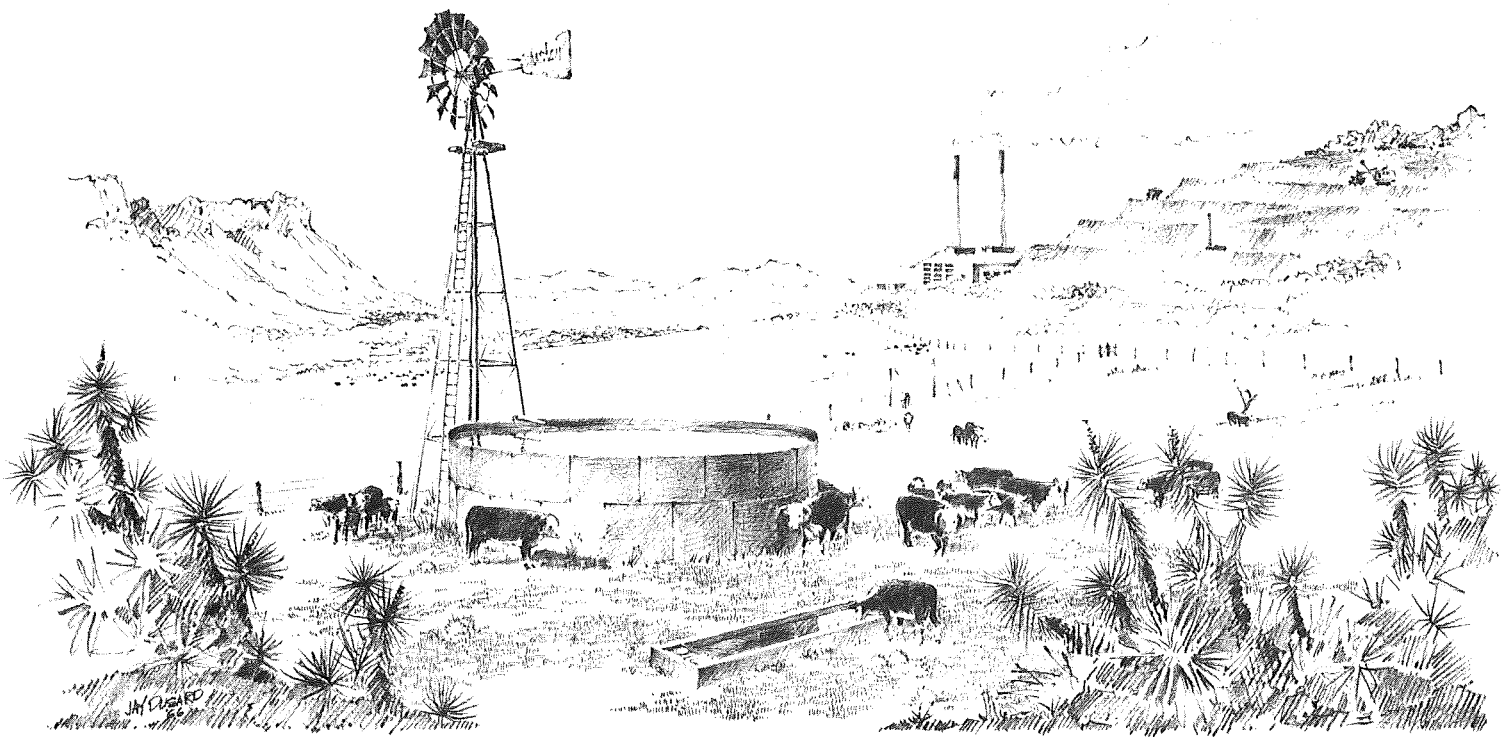
BASIC HYDROLOGIC DATA OF THE HUALAPAI, SACRAMENTO, AND BIG SANDY VALLEYS MOHAVE COUNTY, ARIZONA

BY
J. B. GILLESPIE
C. B. BENTLEY AND
WILLIAM KAM



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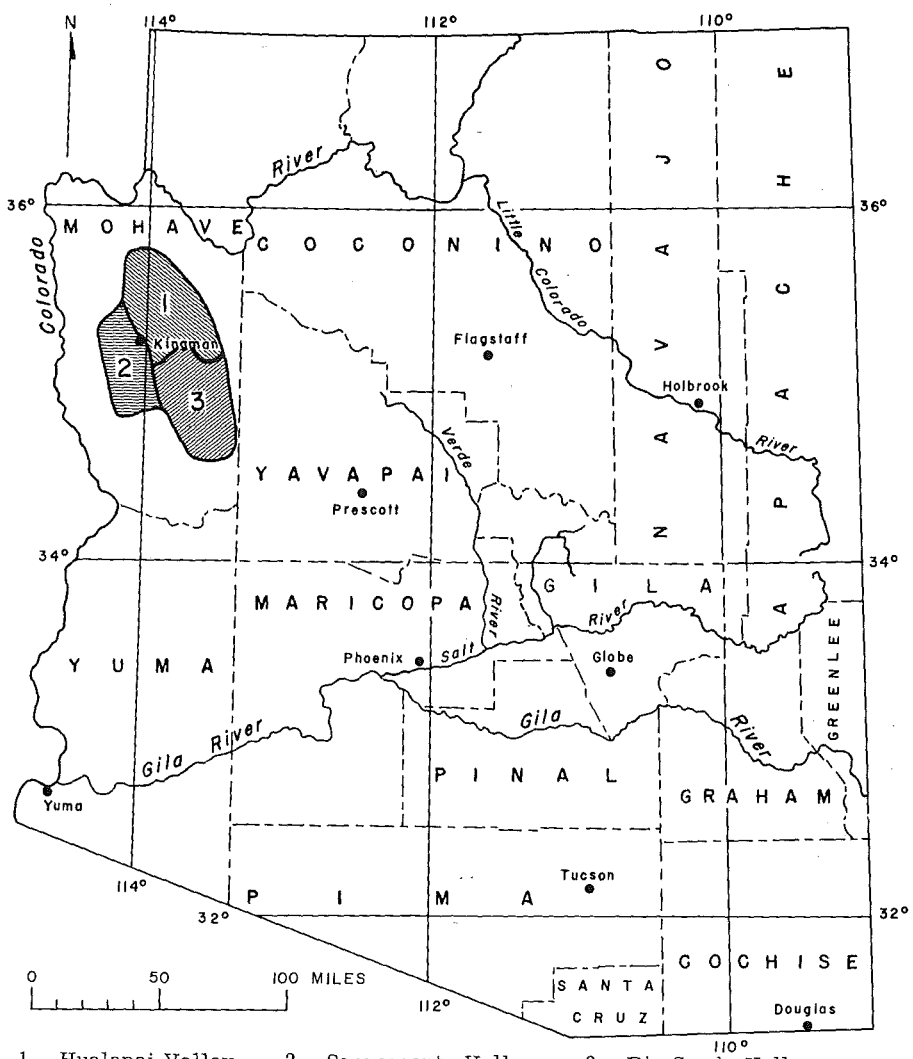
BASIC HYDROLOGIC DATA OF THE HUALAPAI, SACRAMENTO, AND BIG SANDY VALLEYS, MOHAVE COUNTY, ARIZONA

By J. B. Gillespie, C. B. Bentley, and William Kam

Introduction

In July 1964 the U.S. Geological Survey in cooperation with the Arizona State Land Department, Obed M. Lassen, Commissioner, began an investigation of the geology and water resources of the Hualapai and Sacramento Valleys. A similar cooperative study has been in progress in the Big Sandy Valley since 1959. The study areas (fig. 1) consist of broad sediment-filled valleys surrounded by mountains. Hualapai Valley includes about 975 square



1. Hualapai Valley 2. Sacramento Valley 3. Big Sandy Valley

Figure 1.--Area of report.

miles, Sacramento Valley about 770 square miles, and Big Sandy Valley about 1,200 square miles.

The report is a summary of the basic hydrologic data for the three valleys. The purpose of the report is to make available selected well records, drillers' logs, and quality-of-water information, which will be useful in developing the water resources of the area. Most of the data for the Hualapai and Sacramento Valleys have been collected since July 1964, although water levels in several wells have been measured since the middle 1940's. The data for Big Sandy Valley were collected chiefly from 1960 to 1962. The well and spring data were obtained from land owners, water records of the Bureau of Land Management, well-registration forms submitted to the Arizona State Land Department, well-drilling companies, and by personnel of the U.S. Geological Survey.

Acknowledgments

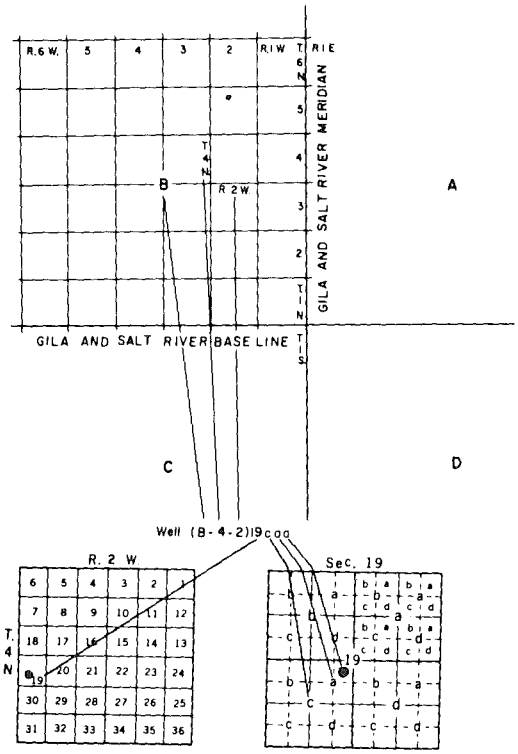
Many well owners and operators have been cooperative in furnishing information. In addition, the cooperation of the following individuals and firms is gratefully acknowledged: the officials and employees of the city of Kingman and Mohave County; several water companies serving the area; personnel of the Duval Corp. Mineral Park mine; J. N. McDougal, Mohave County Agricultural Agent; T. E. Dingman, Bureau of Land Management; C. C. Sweetin, County Sanitarian; and the well drillers who have been active in the area. R. E. Morrow, State Senator from Mohave County, and W. W. Welsh, Chairman, Mohave County Area Development Council, were instrumental in initiating the project.

Use of Tables and Maps

Included in the report are records of water wells, records of springs, drillers' logs that describe the materials encountered during the drilling of the wells, chemical analyses of water, well-location maps, water-table contour maps, and hydrographs of the water levels in wells. The well and spring locations are in order by township, range, and section according to the well-numbering system used in Arizona (fig. 2).

Tables 1, 2, and 3.--Tables 1, 2, and 3 include some information for most of the wells in the area. The land-surface altitude at wells, for the most part, was determined with an aneroid altimeter or was estimated from Army Map Service topographic maps. Well yields were reported by the owner or were measured or estimated by personnel of the Survey. The water level shown is the one most recently measured or reported for that well.

Tables 4 and 5.--Tables 4 and 5 include data for most of the springs in the Hualapai and Sacramento Valleys. The land-surface altitude at springs was estimated from Army Map Service topographic maps and is probably accurate to within 100 feet. Yields were reported by the owner or were estimated by personnel of the Survey.



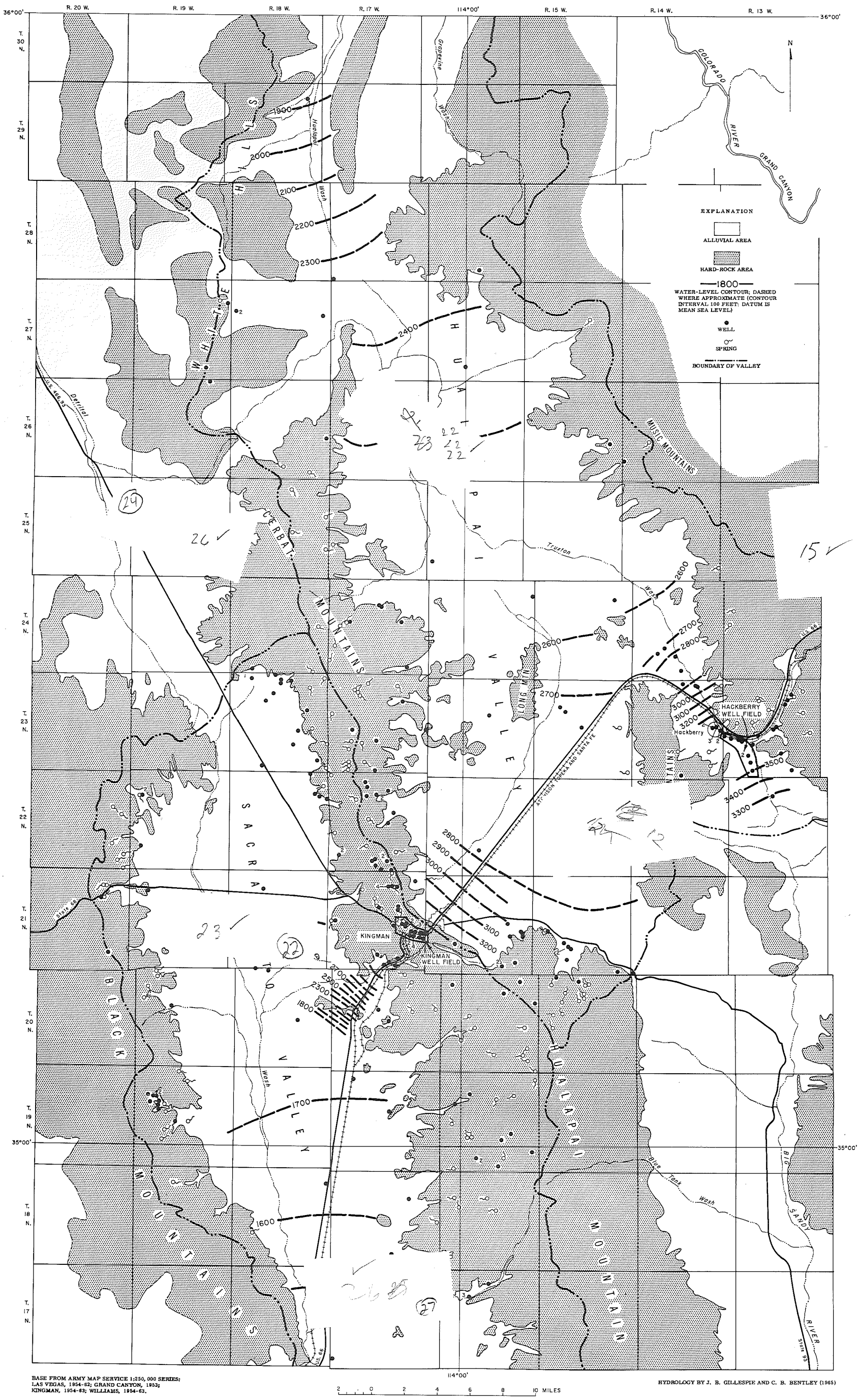
The well numbers used by the Geological Survey in Arizona are in accordance with the Bureau of Land Management's system of land subdivision. The land survey in Arizona is based on the Gila and Salt River meridian and base line, which divide the State into four quadrants. These quadrants are designated counterclockwise by the capital letters A B, C, and D. All land north and east of the point of origin is in A quadrant, that north and west in B quadrant, that south and west in C quadrant, and that south and east in D quadrant. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters a, b, c, and d after the section number indicate the well location within the section. The first letter denotes a particular 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. These letters also are assigned in a counterclockwise direction, beginning in the northeast quarter. If the location is known within the 10-acre tract, three lowercase letters are shown in the well number. In the example shown, well number (B-4-2)19caa designates the well as being in the NE$\frac{1}{4}$NE$\frac{1}{4}$SW$\frac{1}{4}$ sec. 19, T. 4 N., R. 2 W. Where there is more than one well within a 10-acre tract, consecutive numbers beginning with 1 are added as suffixes.

Figure 2. --Well-numbering system in Arizona.

Tables 6, 7, and 8. -- Tables 6, 7, and 8 include drillers' logs that are considered representative or otherwise of special significance. The drillers' terminology has been retained and is reproduced as originally submitted in logs to the Arizona State Land Department or the Geological Survey. Table 6 also contains lithologic logs of two Kerr-McGee Industries, Inc., test holes.

Tables 9 and 10. -- Tables 9 and 10 contain laboratory analyses of water from representative or key wells in Hualapai and Sacramento Valleys.

Illustrations. -- Figures 3 and 4 show the location of wells and springs in Hualapai, Sacramento, and Big Sandy Valleys; the figures also show contours of the altitude of the water levels, in feet above mean sea level, for spring 1965 in the Hualapai and Sacramento Valleys (fig. 3) and for spring 1960 in the Big Sandy Valley (fig. 4). Figures 5 and 6 are hydrographs of the water level in wells in and near the Kingman and Hackberry well fields——the only areas where heavy pumping has occurred in the last several years.



BASE FROM ARMY MAP SERVICE 1:250,000 SERIES: LAS VEGAS, 1954-82; GRAND CANYON, 1953; KINGMAN, 1954-83; WILLIAMS, 1954-63.

HYDROLOGY BY J. B. GILLESPIE AND C. B. BENTLEY (1965)

FIGURE 3.--LOCATION OF SELECTED WELLS AND SPRINGS AND WATER-LEVEL CONTOURS IN HUALAPAI AND SACRAMENTO VALLEYS.

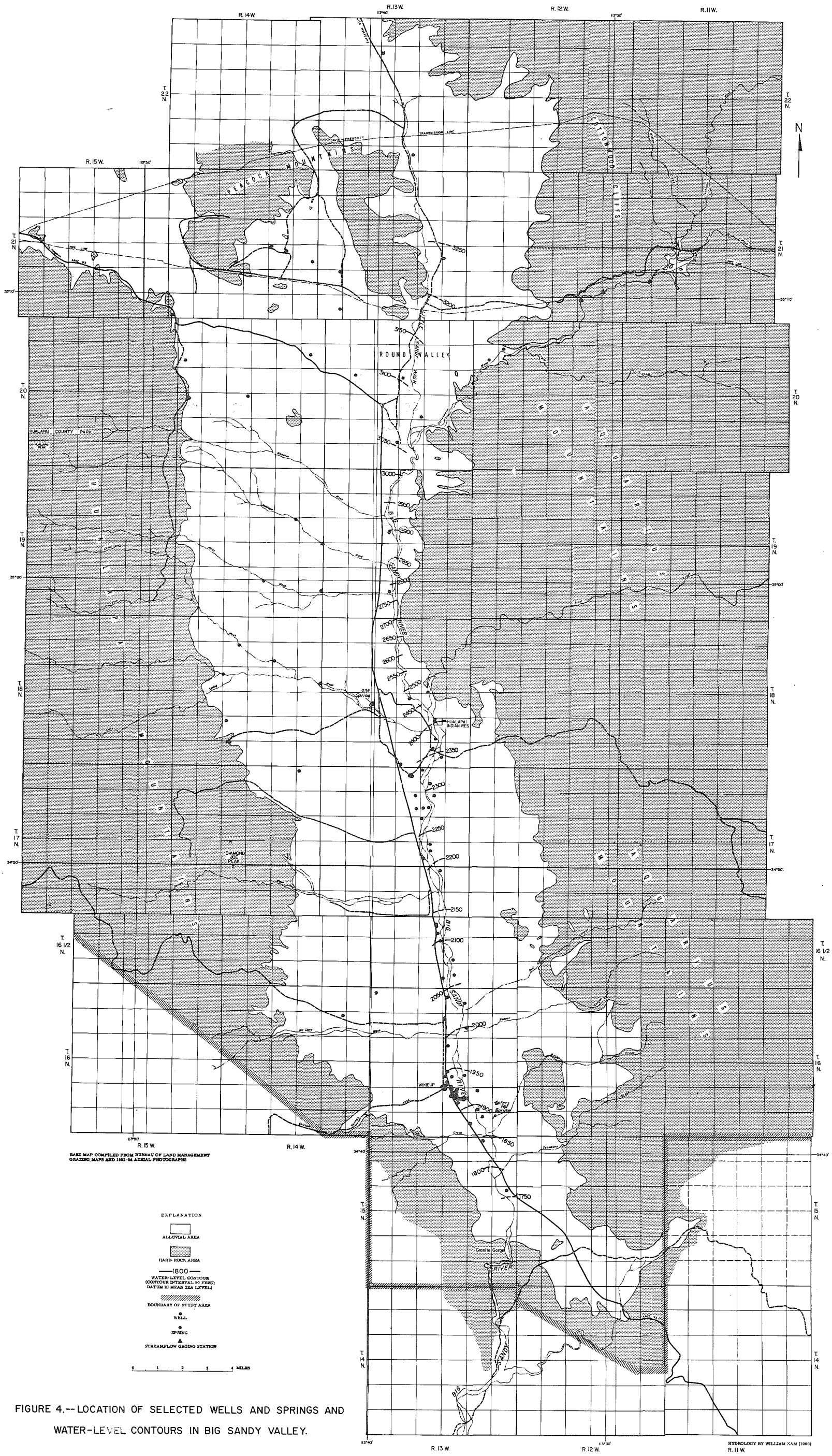


FIGURE 4.--LOCATION OF SELECTED WELLS AND SPRINGS AND WATER-LEVEL CONTOURS IN BIG SANDY VALLEY.

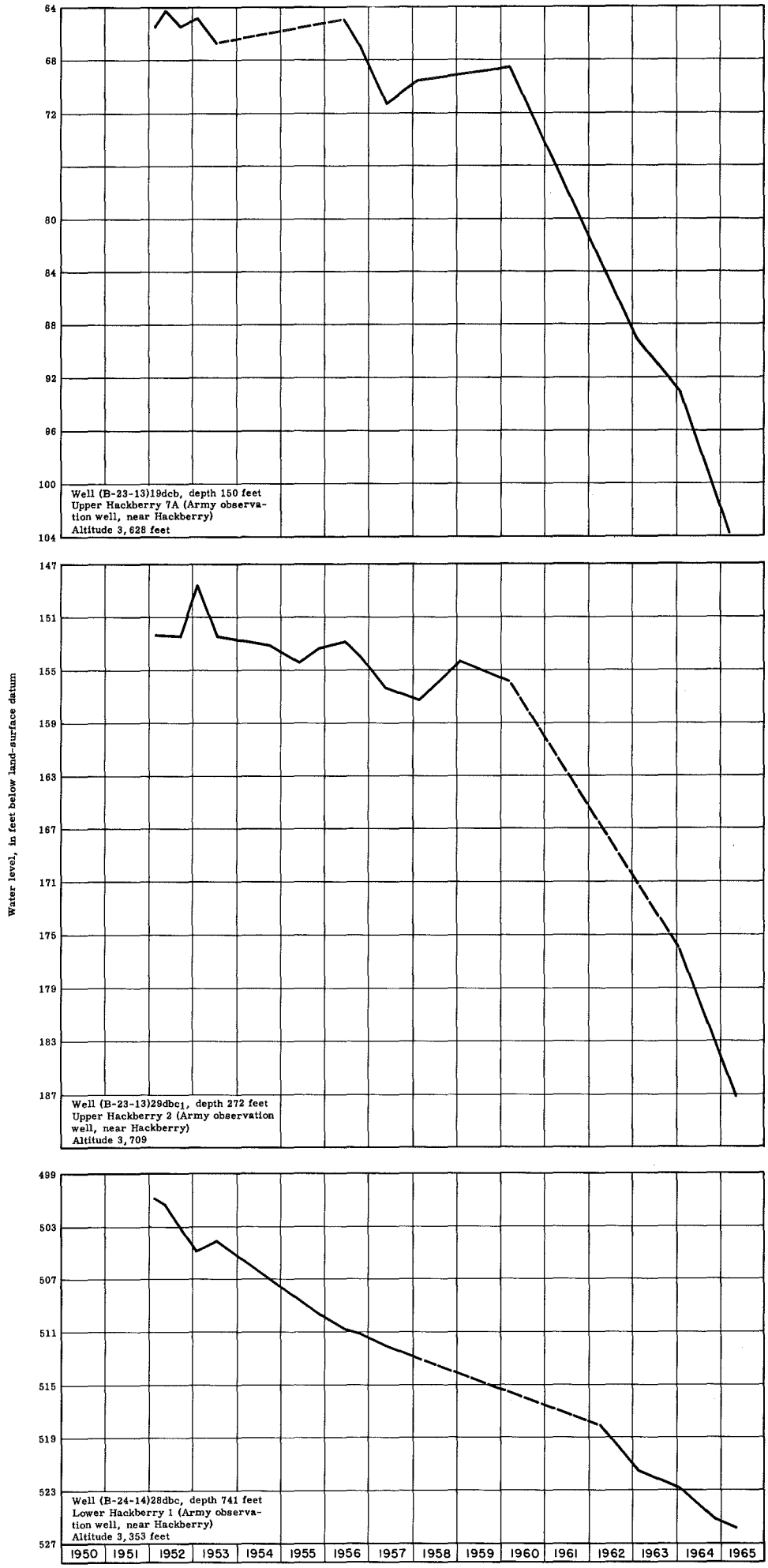


Figure 5.-- Water levels in selected wells in Hualapai Valley.

Figure 6.--Water levels in selected wells in Sacramento Valley.

TABLES

Table 1.--Records of selected wells in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.

Location: See p. 3 for explanation of well-numbering system.
Type of well: Ct, cable tool; Dg, dug; Ro, rotary.
Altitude: T, altitude estimated from topographic map (fig. 3) accurate to ±100 feet.
Depth of well: E, estimated.
Water level: In feet below land surface; rounded to nearest foot if reported and to nearest tenth of a foot if measured.
Use of water: D, domestic; In, industrial; Ir, irrigation; N, none; P, public supply; S, stock.
Remarks: Ca, chemical analysis of water included in table 9; L, log available but not included in report; L6, log included in table 6.

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-20-15)4bd	.....	Ct	5,600 T	165	.....	.....	.....	.....	1	S	Pumps dry in summer in 8 hours.
5bb	.....	Ct	5,000 T	785	720	1964	.....	.....	12	D, S	
(B-20-16)2adc	.....	Ct	4,800 T	140	70	1964	.....	.....	3	S	
12ddb	.....	.....	5,050 T	54	45	1964	.....	.....	2	S	Pumps dry in 2 to 3 hours.
(B-21-14)31cca	.....	Ct	4,575 T	450	350	1963	.....	.....	4	S	
(B-21-15)19acd	1960	Ct	4,000 T	152	78	1964	6	137	4	S	L.
28bca1	.....	Ct	4,400 T	200	110	1964	.....	.....	¾	S	
28bca2	.....	Ct	4,400 T	450	110	1964	.....	.....	2½	D, S	
28bdb	.....	Ct	4,450 T	212	200	1964	.....	.....	1½	N	Pumps only 1 hour per day.
29aaa	.....	Ct	4,400 T	160	80	1964	8	536	6-7	S	
33bbb	.....	Ct	4,550 T	700	75	1964	.....	.....	12	D, S	L; reported pumping level 615 feet.
36cd	.....	Dg	4,800 T	.....	.....	.....	.....	.....	1-2	S	
(B-21-16)14cdd	.....	Ct	3,600 T	690	480	1964	.....	.....	1½	S	
23dbc	.....	Dg	3,850 T	30	20	1964	.....	.....	½	N	Cattle will not drink this water.
24bd	.....	Ct	4,000 T	85	71	1964	.....	.....	¾	S	
24caa	.....	Ct	4,000 T	86	65	1965	.....	.....	¾	S	Rusty taste and color.
24cad	.....	Dg	4,050 T	30	.....	.....	.....	.....	½	S	Pumps dry.
35ad	.....	Ct	4,500 T	233	212	1964	.....	.....	1½	S	
35cbc1	.....	Ct	4,300 T	154	60	1964	.....	.....	.....	S	
35cbc2	.....	Ct	4,300 T	90	.....	.....	.....	.....	.....	S	
(B-21-17)1cab	1963	Ct	3,500 T	503	115	6- -63	8	500	300	P	Ca.
(B-22-13)9abc	1944	Ro	3,890	774	550	2- -44	5	774	10	S	
(B-22-14)10dcb	.....	.....	4,800 T	162	128	1- -57	8	150	17	S	L6.
30abd	.....	Dg	4,000 T	30	.....	.....	None	.....	1	N	
30cba	.....	Ct	4,000 T	180	110	1964	.....	.....	15	D, S	
(B-22-15)12ddb	.....	.....	4,050 T	.....	.....	.....	.....	.....	1½	S	
24adc	1950	.....	4,000 T	38	Dry	1964	.....	.....	Dry	N	Original water level 27 feet; pumps dry in 3 days.
24dab	.....	Ct	4,000 T	180	.....	.....	.....	.....	2½-3	S	

Table 1.--Records of selected wells in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.—Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-22-15)33dad	1965	Ct	3,687	1,220	911.1	4-29-65	8	1,150	.....	S	Ca.
35bdb	.....	Ct	3,750 T	450	Dry	1964	.....	.....	Dry	N	
(B-22-16)28dbb	.....	Ct	3,306	1,000	513	12-11-63	8	.....	500	D	Ca; reported drawdown 22 feet at 500 gpm.
(B-22-17)4cba	.....	Dg	4,800 T	.....	.....	.....	None	.....	20	S	100-foot mine tunnel; water used to flow from tunnel.
4cdc	.....	Dg	4,900 T	12	8	1962	None	.....	.....	S	Old mine shaft.
9add1	.....	Dg	4,200 T	289	15	1964	None	.....	10	S	
9add2	.....	Dg	4,200 T	20	16	1964	.....	.....	30	D, S	Pumps dry in summer.
9bdc	.....	Dg	4,700 T	60	30	1964	.....	.....	20-30	S	
10abc	.....	Dg	4,150 T	.....	.....	.....	.....	.....	5-10	S	
15dab	.....	.....	3,900 T	50	.....	.....	.....	.....	5-10	D	
22aac	.....	.....	4,150 T	.....	.....	.....	.....	.....	1-2	S	Abandoned well 40 feet south of this well.
(B-23-13)10dba	.....	Dg	3,770	42	39	11- -64	.....	.....	170	P	
10dbc	.....	Dg	3,800 T	.....	35.7	3- 5-52	36	.....	.....	N	
11bbb	.....	Ct	3,900 T	74	32	2- -64	12½	74	200	D, S	L.
19cbb	1944	Ro	3,584	150	65.5	4-29-65	8	150	.....	N	Ca; L6; old public well.
19dcb	1944	Ro	3,628	150	103.8	3- 2-65	6	150	.....	N	L6; observation well.
19dda	1962	Ct	3,634	1,030	140.3	5- 3-65	.....	.....	204	P	Ca; L.
20ccd	1944	Ct	3,644	355	129.2	5- 3-65	16	355	535	P	Ca; L6; cascading water at 77 feet.
21cbd	.....	Dg	3,700 T	75	53.0	5- 6-65	.....	.....	.....	N	
22bab	.....	Dg	3,730	30	4.2	4-12-44	.....	.....	.....	Ir	
22bbd	1963	Ct	.....	94	40	1-10-63	16	94	.....	D, Ir	L6.
27dbd	.....	Ct	4,000 T	150	.....	.....	6	.....	3-6	S	
29aaa	.....	Ct	3,662	40	30.6	5- 5-44	8	.....	5	D, S	
29dbc1	1943	Ct	3,709	272	187.1	5- 3-65	16	150	.....	N	L6; observation well.
29dbc2	1943	Ct	3,711	593	191.6	5- 3-65	16	476	360	P	Ca; L.
32aca	1944	Ct	3,767	472	247.1	5- 6-65	16	426	.....	S	L6.
32daa	1943	Ro	3,793	724	277.4	5- 6-65	3	724	.....	N	L6.
35cbd	.....	Ct	4,350 T	125	80	1963	6	75	5	S	
(B-23-14)3acd	1943	Ro	3,425	630	514.2	4-29-65	3	578	.....	N	L6.
3adc	1943	Ct	3,428	515	Dry	1964	16	161	.....	N	L; water level 457 feet on Nov. 10, 1943.

Table 1.--Records of selected wells in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.--Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-23-14)3bbb	1944	Ro	.....	738	.....	.....	5	.....	.....	N	L.
13cda1	.....	Dg	.....	103	65	1943	.....	.....	220	D, In	Lined with concrete 8.5 feet in diameter to a depth of 80.2 feet.
13cda2	1922	Ct	.....	87	56.4	5- 5-44	16	74	.....	N	
13cda3	1919	Ct	.....	90	54.6	4- 7-44	16	74	50	N	
14ddd1	.....	Dg	3,775 T	80 E	74.2	2-12-53	.....	.....	.....	D	Lined with concrete.
14ddd2	.....	Dg	3,775 T	80 E	53.1	11-25-43	.....	.....	.....	D	Lined with concrete 4 feet in diameter.
24aab1	1962	Ct	3,536	290	60	1- -65	10	290	.....	N	L6.
24aab2	1965	Ct	3,537	222	68.6	4-29-65	20	.....	.....	N	L.
33dad	.....	Ct	4,600 T	107	40	1961	8	80	½	S	L.
(B-23-15)8dbb	1964	Ct	3,115	600	368	3-18-65	20	.....	1,200	Ir	L.
8ddd	1964	Ct	3,130	929	402.9	5- 3-65	20-18	780	1,000	P	Ca; L6; drawdown 110 feet at 1,000 gpm.
16d	1917	Ro	3,276	1,040	489	1917	7½	40	.....	N	L6.
(B-23-16)15bac	.....	Ct	3,350	800	.....	.....	.....	.....	550	.....	
(B-23-17)11caa	.....	.....	4,150 T	.....	.....	.....	.....	.....	.....	S	
24dba	.....	.....	3,750 T	.....	.....	.....	.....	.....	5-10	S	
28aaa	.....	Dg	4,600 T	25	.....	.....	.....	.....	.....	S	
33ddb	.....	Dg	4,700 T	15	.....	.....	.....	.....	3	S	
(B-24-14)28dbc	.....	Ct	3,353	741	525.8	5- 3-65	16	741	.....	N	L6; observation well.
29aaa	1944	Ct	3,318	700	607.3	10- 1-64	16	674	.....	N	L6.
29acb	1944	Ro	3,331	949	.....	.....	5	.....	.....	N	L6.
33ada	1944	Ct	3,375	680	521.6	4-29-65	16	.....	.....	N	L6.
(B-24-15)11aaa	.....	Ct	3,125	550	Dry	.....	24	109	Dry	N	L.
(B-24-16)1ddd	.....	.....	3,000 T	.....	430	5- -64	.....	.....	.....	.....	
(B-24-17)10cbd	.....	Ct	3,550 T	100	25	12- -64	.....	.....	1-2	S	
10ccb	.....	Dg	3,550 T	30	25	12- -64	.....	.....	3	D, S	
14cda	.....	.....	3,800 T	40	30	12- -64	.....	.....	1	S	Pumps dry in 2 to 3 hours.
17ccc	.....	Ct	4,200 T	70	20	12- -64	8	.....	5	S	
35dba	.....	Ct	3,750 T	400	260	1964	.....	.....	1½	S	
(B-25-16)30cda	1961	Ct	2,951	600	438.0	5- 3-65	10-8	600	610	N	Reported drawdown 15 feet at 610 gpm.
(B-26-14)30cbc	.....	Ct	4,050 T	100	.....	.....	.....	.....	½-1	S	

Table 1.--Records of selected wells in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.--Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-26-15)24cac	.....	Ct	4,000 T	.....	.....	.....	6	.....	.....	N	
(B-26-16)28ddc	1958	.....	2,817	2,135	.....	.....	.....	.....	.....	.....	L6; mineral-test hole; not shown on map.
30ddd	1958	.....	2,743	2,608	.....	.....	.....	.....	.....	.....	Do.
(B-26-17)23ccc	1957	Ct	2,770 T	719	263	2-28-58	16-10	719	2,200	Ir, S	L; reported drawdown 68 feet at 2,200 gpm for 72 hours.
27aca	.....	Ct	2,750 T	613	.....	.....	6-4	613	.....	N	L.
35aaa	1957	Ct	2,775	800	265.9	4-28-65	16	702	1,500	N	L; reported drawdown 134 feet at 1,500 gpm for 5 days.
(B-26-18)24dab	.....	.....	3,600 T	.....	.....	.....	8	.....	.....	S	
(B-26-19)2abb	.....	.....	4,100 T	35	33	1- -65	.....	.....	2-3	N	
(B-27-16)33baa	.....	Ct	2,793	500	357.1	4-28-65	8	400	20	S	
(B-27-18)7cdb1	.....	Ct	4,050 T	65	35	1964	.....	.....	3	S	
7cdb2	.....	.....	4,050 T	65	35	1964	.....	.....	3	S	
13abb	.....	Ct	.....	.....	.....	.....	8	.....	.....	S	
(B-27-19)12acd	.....	.....	4,400 T	45	40	1964	.....	.....	3	S	
35bda	.....	Ct	4,100 T	100	65	1948	.....	.....	3	S	
(B-28-16)34bbd	.....	Ct	4,200 T	108	80	1961	6	.....	10	D	Pumps dry in dry weather.
(B-28-17)31ccc	1959	Ct	3,004	800	655.0	4-28-65	6	800	10	S	Ca.
(B-29-18)11aab	.....	Ct	2,195	.....	297.7	4-28-65	6	.....	.....	S	

Table 2.--Records of selected wells in the Sacramento Valley, including the Kingman area, Mohave County, Ariz.

Location: See p. 3 for explanation of well-numbering system.
Type of well: Ct, cable tool; Dg, dug; Dr, driven; Ro, rotary.
Altitude: T, altitude estimated from topographic map (fig. 3) accurate to ±100 feet.
Water level: In feet below land surface; rounded to nearest foot if reported and to nearest tenth of a foot if measured.
Use of water: D, domestic; In, industrial; Ir, irrigation; N, none; P, public supply; S, stock.
Remarks: Ca, chemical analysis of water included in table 10; L, log available but not included in report; L7, log included in table 7.

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-17-16)4dd	.....	.....	3,200 T	.....	.....	.....	.....	.....	7	N	Two abandoned open wells at same location.
8dab1	.....	.....	2,950 T	130	44	1- 4-65	.....	.....	½	S	
8dab2	.....	.....	2,950 T	86	45	1- 4-65	.....	.....	½	S	
8dab3	.....	.....	2,950 T	80	40	1- 4-65	.....	.....	½	S	
(B-17-17)31bcb	1962	Ct	1,694	460	268.3	4-27-65	6	.....	25	N	Ca; drawdown 2.13 feet at 25 gpm for 75 minutes.
(B-17-18)12acb	1961	Ct	1,860 T	450	360	1961	6	450	65	D	
12acc	1956	Ct	1,830 T	500	362	1956	8	500	20	D	
12bca	1903	Ct	1,804	1,004	309.4	3-12-65	10	753	350	P, In	Ca; L7; drawdown 88.74 feet at 350 gpm for 4 days.
12bcb	1924	Ct	1,804	787	300	1924	12	787	120	In	Ca; L.
12bcd	1899	Ct	1,804	534	300	1899	10-8	534	55	N	
12bda	1961	Ct	1,840 T	400	340	1961	4	400	60	D	
12dcc	1960	Ct	1,820 T	500	362	1960	6	500	20	D	
(B-18-17)11cbc	.....	.....	2,800 T	110	Dry	1964	.....	.....	Dry	N	
34bbb	.....	.....	2,650 T	165	105	10- -64	.....	.....	.....	S	Pumps dry in 1 day, recovers in 2 weeks.
(B-18-18)1dcd	.....	Ct	2,181	700	540	11- -64	.....	.....	250	In	
(B-19-16)7ddb	.....	.....	3,400 T	.....	Dry	1- -65	.....	.....	Dry	N	
8acd	.....	.....	3,500 T	80	.....	.....	.....	.....	3	S	
23cab	.....	.....	4,350 T	90	.....	.....	.....	.....	1	S	
25dbc	.....	.....	4,900 T	100	.....	.....	.....	.....	5-10	S	
27aba	.....	.....	4,700 T	60	.....	.....	.....	.....	4-5	S	
33bbd1	.....	.....	4,600 T	30	.....	.....	.....	.....	5	S	
33bbd2	.....	.....	4,600 T	100	.....	.....	.....	.....	1½	S	
34cad	.....	.....	4,800 T	90	.....	.....	.....	.....	1	S	
(B-19-17)6acb	1903	Ct	2,600 T	684	400	1901	12-8	575	.....	N	L7; reported dry in 1964.
16ada	.....	.....	2,700 T	90	.....	.....	.....	.....	1	N	
(B-19-19)7dab	1961	.....	3,200 T	35	20	1961	.....	.....	.....	D, Ir	
8cbc	.....	Dg	3,100 T	8	3	1964	.....	.....	.....	D	
8cbd1	.....	Dg	3,050 T	14	4	1964	.....	.....	.....	Ir	

Table 2. --Records of selected wells in the Sacramento Valley, including the Kingman area, Mohave County, Ariz. —Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-19-19)8cbd2	.....	Dg	3,050 T	14	4	1964	.....	.....	.....	Ir	
17baa	1965	Ct	2,800 T	304	28	4-21-65	7	272	.....	N	L7; new domestic well, not yet in use.
17bda	.....	Dg	2,750 T	28	4.0	3- 4-65	.....	.....	60	D, Ir	Pumps dry in summer, recovers in 2 days.
17caa	.....	Dg	2,800 T	30	18	1964	.....	.....	60	D, Ir	
18aad	.....	Dg	2,950 T	80	18	1964	.....	.....	15	D	Old mine shaft.
21bda	.....	.....	2,700 T	.....	.....	.....	.....	.....	.....	N	Artesian flow reported when drilled.
(B-20-16)6dab	.....	.....	3,600 T	150	96	1952	6	.....	2	S	Drawdown 15 feet at 4 gpm in 1952.
10aac	1963	.....	4,500 T	90	60	1963	.....	.....	50	D, S	
(B-20-17)16b	.....	Dg	3,200 T	.....	16.8	2-13-53	.....	.....	.....	D, S	Pumps dry, recovers quickly.
16ddd	.....	Dg	3,100 T	40	Dry	1964	.....	.....	Dry	N	
(B-20-18)4bba	1963	Ct	2,521	1,350	733.8	10-13-64	20	1,350	670	In	
22aaa	.....	Ct	2,500	800	737.5	5- 4-65	.....	.....	.....	N	Not yet in use.
(B-20-19)16bca	.....	Ct	2,750 T	300	150	1964	.....	.....	3-5	S	
(B-21-16)29bbd	1954	Ct	3,600 T	500	290	1964	.....	.....	25	S	
(B-21-17)2ccd	.....	Ct	.....	60-70	.....	.....	12	.....	.....	N	Old public well.
3dc1	.....	Ro	3,723	385	102.7	2-13-63	2½	.....	.....	N	
3dc2	.....	Ct	3,925	175	82.3	1-23-55	6	.....	.....	N	Do.
3dc3	.....	Ct	3,923	186	101.2	12-10-52	16-14	179	183	N	Ca; L.
3dc4	1944	Ct	3,907	129	.....	.....	14	.....	.....	N	L.
3ddb	1943	Ct	3,834	325	31.3	2-13-63	16-12	.....	.....	N	L7.
14ba	.....	Dg	.....	.....	1.7	2-13-53	.....	.....	.....	D, S	Lined with concrete 4 x 5 feet in diameter.
14bd	1942	Ct	.....	300	Dry	1965	10	.....	Dry	N	
15bbd	.....	Ct	.....	250	.....	.....	.....	.....	300	N	Old public well.
19bab	.....	Ct	3,200 T	600	105	1964	.....	.....	½	N	
23aac	1957	Ct	3,387	250	180	1957	None	.....	10	D	
23abc1	.....	Ct	3,389	260	190	12- -64	.....	.....	18	D, Ir	
23abc2	.....	Ct	3,386	360	225	3- -64	.....	.....	10	D	
23adb1	.....	Ct	.....	175	Dry	1948	8	.....	.....	N	
23adb2	1938	Ct	3,379	181	160.8	12-10-64	6	.....	12	N	
23bcd	1956	Ct	3,391	355	120	1956	8	.....	45	D	Pumps dry in 8 hours.

Table 2.--Records of selected wells in the Sacramento Valley, including the Kingman area, Mohave County, Ariz.—Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-21-17)24cad	.....	Ct	.....	.....	.....	.....	.....	.....	.....	In	
24cbb	.....	Ct	3,330	165	116.5	1-23-55	6	.....	.....	N	
24cbc	.....	Ct	3,330	.....	180	5- -65	.....	.....	175	P	Ca.
24cbd	.....	.....	.....	.....	.....	.....	.....	.....	.....	D	
24cca	.....	Ct	3,328	135	95	10- -64	3	135	.....	N	
24ccb	.....	Ct	3,338	160	97	11- -64	8	.....	.....	N	
24cda	.....	Ct	3,339	178	120.0	5- 4-65	15½	178	105	N	Ca; L7.
24cdb	1912	Ct	.....	232	.....	.....	12½	165	175	P	Ca; L7.
24cdd1	.....	Ct	3,330	.....	119.4	3- 2-65	6	.....	.....	N	Observation well.
24cdd2	.....	Ct	3,332	.....	.....	.....	.....	.....	150	P	Ca.
24dca	.....	Ct	3,397	357	120	1948	8	.....	50	D	
24dcd	.....	Ct	3,350	200	114.3	6-25-46	6	200	.....	N	
24ddc	.....	.....	.....	.....	.....	.....	.....	.....	.....	D	
25aaa	1963	Ct	3,385	460	180	3- -63	8	460	33	D	L.
34bbb	.....	Ct	3,000 T	168	153	1961	6	.....	5	D, S	
34dab	.....	Ct	3,080	80	59.6	3- 2-65	6	80	.....	N	Observation well.
34dbb	1949	Ct	3,080 T	80	64.8	7-22-52	6	80	.....	N	
35bd	1913	Dg	3,150 T	58	46.7	1-24-55	.....	.....	.....	.....	Lined with concrete 2 feet in diameter.
(B-21-18)9bbb	1962	Ct	2,860	1,518	1,025.1	4-27-65	16-14-12	1,476	130	P	Ca; L7.
20caa	1963	Ct	2,663	1,285	870.2	10-13-64	20	1,285	820	In	L.
30abb	1963	Ct	2,636	1,385	843.6	10-13-64	20-16	1,370	1,025	In	L7; reported drawdown 64 feet at 1,300 gpm.
32bbc	1963	Ct	2,578	1,355	791.1	11-30-64	20	1,300	800	In	L7; reported drawdown 84 feet at 975 gpm.
32dcc	1960	Ct	2,534	1,255	746.7	11-30-64	16	1,140	725	In	L; drawdown 95.7 feet at 725 gpm.
(B-21-19)7bdb	1943	.....	3,250 T	70	30	1943	8	70	10	S	
8bbc	1964	Ct	3,100 T	195	103	2- -64	20	195	4½	D	L7.
(B-21-20)11bcd	.....	Dg	3,600 T	18	14	5- -65	.....	.....	15	D	Pumps dry in 3 hours, recovers in 1 hour.
26dbd	.....	Dg	3,700 T	35	20	1964	.....	.....	60	.....	
(B-22-17)31abb1	.....	Dg	3,584 T	30	27.4	3-25-52	.....	.....	1-2	D, S	Lined with concrete 4 feet in diameter.
31abb2	.....	Ct	3,584 T	70	47.0	3-25-52	6	70	2	D, S	
33ac	.....	Dg	4,327	45	39.1	3-13-53	None	.....	.....	N	Possible drilled hole at bottom of dug hole.

Table 2. --Records of selected wells in the Sacramento Valley, including the Kingman area, Mohave County, Ariz. —Continued

Location	Year completed	Type of well	Altitude of land surface (feet)	Depth of well (feet)	Water level		Casing record		Yield (gpm)	Use of water	Remarks
					Depth (feet)	Date measured	Diameter (inches)	Depth (feet)			
(B-22-17)33ada	.....	.....	4,500 T	50	Dry	1964	.....	.....	Dry	N	
33da	.....	Dg	4,303	242	58.4	2-13-53	2½	.....	.....	N	
34acb1	1941	Ct	4,172	286	93	2- -44	12	20	400	N	L; old public well.
34acb2	1943	.....	4,180	275	100	12- -51	10	.....	30	N	Collapsed in 1951.
34ccd	.....	Dg	4,077	25	19.9	4-28-44	.....	.....	80	N	Two 150-foot drifts at bottom of well.
34ddc	1941	Ct	4,036	229	98	10- -43	12	20	260	N	Old public well.
(B-22-18)2aaa	.....	Dg	3,800 T	.....	17.5	3-25-52	.....	.....	.....	D, S	
12bc	.....	Dg, Dr	3,900 T	.....	10.4	3-25-52	3	.....	.....	S	
12caa	.....	.....	3,700 T	120	.....	.....	.....	.....	.....	N	Ca; reported water, corrosive.
12dad	.....	Dg	3,900 T	24	21.0	4- 4-52	.....	.....	.....	N	
(B-22-19)7acc1	.....	.....	3,500 T	60	.....	.....	.....	.....	2-3	S	
7acc2	.....	.....	3,500 T	60	.....	.....	.....	.....	4-5	S	
30dbb	.....	Dg	3,300 T	30	.....	.....	.....	.....	2-3	S	
(B-23-17)20bdd	.....	Dg	4,750 T	40	30	1964	.....	.....	.....	N	
(B-23-18)3adb	1961	Ct	4,140	145	115	3- -65	8	145	15	P	Ca; pumps dry in 30 minutes.
3bc	1959	Ct	4,020	210	.....	.....	10	.....	15	P	Pumps dry in 1 hour.
3cbb	1958	Ct	3,990	104	80	3- -65	8	104	15	P	Ca; pumps dry in 20 minutes.
4aac	.....	Dg	4,000	78	.....	.....	.....	.....	15	P	Old mine shaft; pumps dry in 25 minutes.
5bdc	.....	Ct	3,830 T	30	.....	.....	.....	30	1	S	
9abd	.....	Ct	3,825 T	70	.....	.....	.....	.....	5	S	
9cba	.....	Ct	3,770 T	49	35	1964	10	25	5-10	S	
14aac	.....	.....	4,400 T	33	28	10- -64	.....	.....	.....	S	
23bcd	.....	Ct	3,800	150	90	1964	6	150	5	S	
27ada	.....	.....	3,700 T	350	.....	.....	.....	.....	30	In	
33cbc	1957	Ct	3,380	810	Dry	1964	.....	.....	Dry	N	
36bad	.....	.....	3,850 T	400	40	1964	.....	.....	5	S	
(B-24-18)32cac	.....	.....	4,000 T	.....	.....	.....	.....	.....	.....	D	

Table 3.--Records of selected wells in the Big Sandy Valley, Mohave County, Ariz.

Location: See p. 3 for explanation of well-numbering system.
Type of well: Ct, cable tool; Dg, dug.
Water level: R, reported.

Pump type: B, bucket; C, cylinder; Cf, centrifugal; J, jet; N, none; T, turbine.
Pump power: E, electric; G, gasoline; H, hand; N, none; W, wind.
Use of water: D, domestic; I, irrigation; N, none; S, stock; Sa, sanitation.

Location	Type of well	Year completed	Depth of well (feet)	Diameter of casing (inches)	Length of casing (feet)	Water level		Altitude of land surface (feet)	Pump			Use of water	Remarks
						Depth below land surface (feet)	Date measured		Type	Power	Horse-power		
(B-15-13)2ab	Dg	1915	.....	48	.....	15.7 15.9	1-14-45 3- 8-60	1,857	C	W	.....	D, S	Observation well.
13ab	Ct	1960	120	16	95	20.4	11-14-60	1,785	N	N	.....	I	New well. Driller's log.
(B-16-13)3bc	Dg	1950	24	60	.....	23.0	11-15-60	2,054	B	H	.....	D	
3da2	Ct	1960	71	14	70	20.3	10-14-60	2,043	N	N	.....	I	New well.
6b	Ct	1949	350	8	.....	Dry	.....	.....	N	N	.....	N	
10bb1	Ct	1958	155	8	155	27.9	6- 3-59	.....	J	E	1	Sa	Water is used for sanitation purposes only.
10da	Ct	1959	75	12	62	26.3	11-15-60	2,026	C	E	.....	D, S	Dug to 13 feet. Drilled to 75 feet.
15bc	Dg	1932	21	60	.....	12 Dry	2-14-40 10- 8-59	.....	J	E	.....	N	
21ddd	Ct	1942	117	6	117	94.0 95.9	1-13-45 3- 8-60	.....	C	W, G	.....	D, S	Observation well.
22ad	Ct	.....	.....	30	.....	17.8	11-15-60	.....	T	E	15	I	
22bc	Ct	.....	.....	10	.....	61 R	11-15-60	.....	J	E	.....	D	
22ca	Dg	1935	32	60	.....	23.6 31.1	2-14-40 4-18-61	1,967	Cf	G	7.5	I	Do.
22cb	Ct	1957	130	6	110	65.5	11-15-60	.....	T	E	.....	D	
22cc	Ct	1957	105	8	105	.....	.....	.....	T	E	.....	D	
22ccc1	Ct	.....	188	6	.....	.....	.....	.....	T	E	5	D	
22ccc2	Ct	1957	125	6	125	.....	.....	.....	T	E	.....	D	School supply.
22cdc	Ct	.....	90	14	50	.....	.....	.....	C	E	.....	D, I, S	Dug to 40 feet. Drilled to 90 feet.
26ba	Ct	.....	.....	16	.....	22.7	10- 5-59	1,941	T	E	10	I	
26cd	Ct	1954	85	16	85	17.0	10- 5-59	1,918	T	E	10	I	
27abb	Ct	1960	66	6	66	28.6	11- 2-60	1,953	T	E	.....	D	
27abc	Ct	1951	150	18	150	31.2	11- 2-60	1,957	T	E	25	I	Produces 630 gpm. Log.
27acb	Ct	1956	167	16	167	35.5	11- 2-60	1,954	T	E	20	D, I	
27acd	Ct	1941	65	6	65	.....	.....	.....	C	W	.....	D	Dug 20 feet. Drilled 45 feet.
27ad	Dg Ct	1920 1943	26 90	96 12	 90	14	2-13-40	....	..... T	..... E	 10	 I	 Drilled in dug well.
27adc2	Ct	1952	64	16	64	22.4	11-15-60	1,931	T	E	.....	I	
27bab	Ct	1955	95	14	.....	.....	.....	.....	Cf	E	.....	D, I, S	Dug to 45 feet. Drilled to 95 feet.
27bad	Ct	1957	82	8	.....	40 R	.....	.....	J	E	.....	D	Dug to 40 feet. Drilled to 82 feet.

Table 3. --Records of selected wells in the Big Sandy Valley, Mohave County, Ariz. ——Continued

Location	Type of well	Year completed	Depth of well (feet)	Diameter of casing (inches)	Length of casing (feet)	Water level		Altitude of land surface (feet)	Pump			Use of water	Remarks
						Depth below land surface (feet)	Date measured		Type	Power	Horse-power		
(B-16-13)27bbb	Ct	1955	200	8	200	92.4 92.9	10- 6-59 11-14-60	2,074	N	N	.....	N	Log.
27bd	Ct	1957	130	16-12	100	29.1	11- 3-60	.....	T	E	.....	D	
27bda	Ct	1948	661	16	.....	42.9	11-15-60	1,965	N	N	.....	N	Well plugged back to about 190 feet.
27bdd	Ct	1954	116	16	116	30 R	.....	.....	T	E	5	D, I	
27db	Ct	1956	110	16	110	40 R	.....	.....	J	E	1	D	
35ab	Dg	.....	55	12	.....	20.7 24.1	1-12-45 4-18-61	1,893	C	G	1.5	D, I, S	Observation well.
35bc	Ct	1958	74	6	74	.....	.....	.....	C	W	.....	D	
36cc	Dg	1920	15	12	.....	9.6 11.4	1-12-45 4-18-61	.....	C	H	.....	D	Do.
(B-16-14)11a	Ct	1955	500+	8	.....	Dry	.....	.....	N	N	.....	N	
(B-16½-13)21ac1	Ct	1947	45	10	35	23.8	10- 9-59	2,155	N	N	.....	N	
21ac2	Ct	1959	106	8	103	.....	.....	.....	T	E	5	D, S	
21dc	Ct	1941	130	6	.....	16 R	.....	.....	T	E	.5	D, S	
27cd	Ct	1960	117	18	117	32.8	4-22-60	2,109	T	E	25	I	
28aa	Ct	1941	96	6	96	41.9	11-17-60	2,135	T	E	5	D, S	
33da	Ct	1959	323	12	.....	18 R	8-27-59	2,082	T	E	.....	I	Log.
34bdd	Ct	.....	56	6	.....	31.1	11-14-59	.....	T	E	.75	D, I, S	
(B-17-13)2bb	Ct	.....	95	12	.....	.....	.....	.....	T	E	.....	D	
2ca	Ct	1947	.....	12	.....	15.0 21.1	5- 9-60 11-16-60	2,324	T	E	15	I	
3ac1	Ct	.....	75	6	.....	.....	.....	.....	C	W	.....	D, S	
3ac2	Ct	1960	185	8	.....	.....	.....	.....	.....	.....	.....	D, S	
10aa	Dg	1920	98	36	.....	73.1 77.4	1-16-45 8-11-55	2,412	C	G	.....	D, I, S	Abandoned observation well.
10da	Ct	1956	80	.....	.....	55.5	11-16-60	2,333	T	E	.....	D	Drilled in old dug well.
11ab	Ct	.....	.....	.....	.....	20.9	11-16-60	2,318	T	E	.....	I	
11ca	Ct	1953	48	16	.....	16.1	11-16-60	2,301	T	E	15	I	Do.
11cb	Dg	1920	31	48	.....	16.8	3-18-40	.....	C	W	.....	D, S	
14bbb	Ct	.....	.....	12	.....	.....	.....	.....	T	E	10	I	
23baa	Ct	.....	115	10	.....	21.3	11-16-60	2,242	T	E	15	I	

Table 3.--Records of selected wells in the Big Sandy Valley, Mohave County, Ariz.--Continued

Location	Type of well	Year completed	Depth of well (feet)	Diameter of casing (inches)	Length of casing (feet)	Water level		Altitude of land surface (feet)	Pump			Use of water	Remarks
						Depth below land surface (feet)	Date measured		Type	Power	Horse-power		
(B-17-13)23bda	Ct	.....	400+	8	150	.....	.....	.....	T	E	15	I	
23cb	Ct	.....	57	14	57	17.8	6- 3-59	.....	C	E	2	D	Dug to 15 feet. Drilled to 57 feet.
26aa	Dg	.....	24	48	.....	20.5	10-27-60	2,201	C	E	.....	S	
(B-17-14)1b	Ct	1958	150	6	.....	.....	.....	.....	C	W	.....	S	Log.
(B-18-13)14cd	Dg	.....	26	6	.....	21.4	11-17-60	2,464	J	E	1	D	
21bcc1	Ct	1946	100	16	.....	10.1	4- 9-52	.....	T	E	5	D, S	Wells drilled at spring location.
21bcc2	Ct	1948	.....	8	.....	10.8	4- 9-52	.....	.....	.....	.....	D, S	Do.
22ab	Ct	1955	67	12	.....	21.5	11-17-60	2,504	T	E	.....	I	
26abb	Ct	1953	46	12	46	18.9	11- 5-59	.....	T	E	2.5	D, I	
26dc	Ct	1958	125	20 12	75 75-125	29.8 38.3	6- 5-59 11-16-60	2,411	T	E	30	I	
34cc	Ct	.....	72	6	.....	45.5 44.0 48.9	1-29-59 11- 5-59 3- 8-60	2,474	C	W	.....	S	
35ab	Ct	.....	47	16	47	.....	.....	.....	T	E	15	I	
35da2	Dg	.....	35	48	.....	17.7	11-16-60	2,355	C	G	.....	D, I	
(B-18-14)9ab	Ct	.....	70	.....	.....	.....	.....	.....	C	W	.....	S	
11cb	Ct	.....	.....	6	.....	19	1-25-60	.....	C	W	.....	S	
13da	Ct	.....	165	6	.....	.....	.....	.....	C	W	.....	S	
16bc	Ct	.....	120	6	.....	.....	.....	.....	C	W	.....	S	
28bb	Ct	1957	170	8	150	.....	.....	.....	C	W	.....	S	Log.
33ba	Ct	1957	154	8	20	.....	.....	.....	C	W	.....	S	Do.
(B-19-13)16db	Ct	1931	79	6	79	.....	.....	.....	.....	E	.....	D, S	Do.
28dc	Ct	.....	.....	6	.....	.....	.....	.....	C	W	.....	S	
(B-19-14)14aa	Ct	.....	220	6	220	120 R	5- 4-60	.....	C	W	.....	S	
24aa	Ct	1950	260	6	.....	.....	.....	.....	C	W, G	.....	S	
25dd	Ct	.....	.....	6	.....	323	1-24-60	.....	C	W, G	.....	S	
27db	Ct	.....	85	6	.....	.....	.....	.....	C	W	.....	S	
(B-20-12)7d	Ct	.....	300	6	.....	190 R	4- 9-52	.....	N	N	.....	N	Granite at 200 feet.
8bbd	Ct	1958	192	8	192	85	11-17-60	.....	C	W	.....	.....	Granite at 192 feet. Log.
(B-20-13)15bca	Ct	1946	300	6	.....	169.7	4- 8-52	3,294	C	W	.....	S	

Table 3. --Records of selected wells in the Big Sandy Valley, Mohave County, Ariz. —Continued

Location	Type of well	Year completed	Depth of well (feet)	Diameter of casing (inches)	Length of casing (feet)	Water level: Depth below land surface (feet)	Water level: Date measured	Altitude of land surface (feet)	Pump: Type	Pump: Power	Pump: Horse-power	Use of water	Remarks
(B-20-13)17b	Ct	1948	500	6	.....	442 R	11-17-60	.....	C	W	.....	S	Log.
22d	Ct	1948	130	6	.....	100 R	11-17-60	.....	C	W	.....	S	
28dd	Ct	.....	200	8	.....	107 R	11-17-60	.....	T	E	3	D, S	
(B-20-14)7c	Ct	.....	120	6	.....	60 R	.....	.....	C	W	.....	S	Pumps dry in 30 to 45 minutes.
12b	Ct	.....	600	8	.....	Dry	.....	.....	N	N	.....	N	
19b	Ct	1956	165	6	.....	60.1	5-18-60	.....	C	W	.....	S	
21a	Ct	1940	160	4	.....	57 R	.....	.....	C	W, G	.....	S	Struck water at 80 feet, which rose to about 16 feet below land surface.
(B-21-13)24bcc	Ct	.....	400+	6	.....	377.0 375.9 375 375.7	10-12-43 11- 6-59 11-17-60 4-19-61	3,620	C	W	.....	S	
30aa	Ct	.....	650	6	.....	610 R	.....	.....	C	W	.....	S	
31daa	Ct	1961	1,000	10	.....	532 R	1- 5-62	.....	.....	.....	.....	S	
(B-21-14)21dcc	.....	1958	350	.....	.....	.....	.....	.....	.....	.....	.....	.....	Log.
23a	.....	.....	780	.....	.....	750 R	5-19-60	.....	C	W	.....	S	
23bbb	.....	1958	915	5	.....	726 R	8- 5-60	.....	C	W	.....	S	Do.
24dac	.....	1963	1,000	.....	.....	700 R	- -63	.....	.....	.....	.....	.....	
31c	Ct	1951	350	6	.....	220 R	4- 8-52	.....	C	W	.....	S	
(B-22-13)9abc	Ct	1944	774	5	774	550 R 520 R	2- -44 3- -62	3,890	C	W, G	5	S	One of 3 wells. Log.
34ad	Ct	.....	570	6	.....	539.7	11-17-60	3,833	C	W; G	8-10	D, S	

Table 4.--Records of selected springs in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.

Spring location: See p. 3 for description of numbering system.
Improvements: C, concrete box; D, dugout; N, none; P, piped; Sh, shaft; T, tunnel.

Altitude: All altitudes estimated from topographic map (fig. 3) accurate to ±100 feet.
Use of water: D, domestic; Ir, irrigation; N, none; S, stock.

Spring location	Name of spring	Improvements	Land-surface altitude (feet above mean sea level)	Rock type	Terrain	Yield		Use of water	Remarks
						Amount (gpm)	Date		
(B-20-15)3cbb	Charlot	N	6,000	Granite	Hillside	Seep	1964	S	Dry in summer.
4dab	Grapevine (Burn)	N	5,800	do	do	Seep	1964	S	
6dab	McLain	T	5,100		Stream bank	1	1964	D, Ir	
8abb	Boulder	N	5,600	Clay	Hillside	1	1964	S	
8cab	The Falls	N	5,800	do	Stream bed	1½	1964	S	
9abd		N	6,200	Granite	Hillside	Seep	1964	S	Dry in summer.
9acd	Dean	T	6,600	do	do	3	1964	S	
9caa	Hank	N	6,800	do	do			S	Natural pool, no visible outflow.
(B-21-15)19ac	Holder	D	4,050	do	Foothills	¼	1964	S	
(B-22-17)16cd	Rock Cabin	D	4,700	do	Wash			S	Owner plans to convert spring into well. Yields 3 gallons per hour.
26ccb	Pat	D	3,900	Tuff		3	1964	S	
(B-23-13)3aaa	Valentine	N	3,750	Alluvium	Stream bed	300	1964	S	Flow decreases to 150 gpm in dry season.
9baa	Boulder	C	4,600	do	do	5	1964	S	Flow decreases in dry season.
9bbd	Seep	P	4,400	Granite	Hillside	5	1964	S	Several seeps.
11bdb		P	4,000	Alluvium	Wash	3	1964	S	Flow decreases in dry season.
14adb		P	4,550	Granite	Hillside	2	1964	S	
16aab	Dead Cedar	D	4,200	Deep soil	do	1	1964	S	
17ddc	South	P	4,000	Granite	do	3	1964	S	
18dcd		T	3,800	do	do	3	1964	S	Old mine tunnel; no flow in summer.
24dba	Cottonwood	D	4,600		Stream bed	10	1964	S	Flow decreases to 2 gpm in dry season.
(B-23-14)1ada		N	3,800	Granite	Foothills	6	1950	N	
26acb		T	4,200	Clay	do	3	1964	S	
28aca		T	4,600	Clay and gravel.	Hillside	5	1964	S	Old mine tunnel.
35aab	Hackberry 2	T	4,450	Clay	do	3	1964	S	
(B-23-15)13cdb	Crescent	C	3,800		Base of hill	2-3	1965	S	
36dba	North Water	D	4,000		Valley slope	15	1964	S	Flow decreases to 4 gpm in dry season.
(B-23-17)2cb	Mustang	C	4,800			Small	1964	S	
4ca	Vock	D	4,800	Tuff	Canyon floor	10	1964	S	10 openings.

Table 4.--Records of selected springs in the Hualapai Valley, including the Hackberry area, Mohave County, Ariz.—Continued

Spring location	Name of spring	Improvements	Land-surface altitude (feet above mean sea level)	Rock type	Terrain	Yield		Use of water	Remarks
						Amount (gpm)	Date		
(B-23-17)5cdd	Brushy		5,600			Small	1964	S	
8aba		D	5,400			Small	1964	S	
8adb	Manzanita		5,300			Small	1964	S	
23cca	Merrit	T, P	4,100		Foothills	4	1965	S	No flow in summer.
29ada	Upper C.O.D. Mine	T	5,900	Granite	Hillside	1	1964	S	
(B-24-13)7dca	Stone Corral 2		5,200		Stream bed	2	1965	S	
18cad	Stone Corral 1	C	4,700	Granite	Hillside	3	1965	S	Spring flowed at 12 gpm in 1948.
(B-24-17)18ddd	Cedar	N	4,200	do	do	Dry	1964	N	Spring went dry 10 years ago due to pumping of nearby well.
19ab	Mustang	N	4,300	do	Stream bed	Small	1964	S	
30bd	Orienta	N	4,650	do	do	Small	1964	S	
31bcb	Lucky Boy	N	4,800	do	Hillside			S	Natural pool, no visible outflow.
(B-24-18)24ba	Packsaddle	N	5,700	do	do	Small	1964	S	
(B-25-14)36aad		T	5,000	do	do	$1\frac{1}{4}$	1964	S	
(B-25-17)19ccd	Canyon	Sh	3,950			1	1964	S	
(B-26-14)20dbb	Cohenow	D, P	5,800		Hillside	Small	1964	S	
(B-26-18)34bbc	Antelope	D, P	4,600		do	5	1965	S	
35dba	Cane	T, Sh (100 ft)	3,900		Canyon	$5\frac{1}{2}$	1964	D, S	2 openings.
(B-27-15)15ac	Clay	D, P	4,600	Limestone	do	6	1964	S	3 openings; flow decreases to 3 gpm in dry season.
(B-27-19)12bab	Red Willow	D	4,400		Hillside	Seep	1965	S	Spring gradually drying up.

4/5 gpm

318 mg/yr

669 ac-ft/yr

Table 5. --Records of selected springs in the Sacramento Valley, including the Kingman area, Mohave County, Ariz.

Spring location: See p. 3 for description of numbering system.
Improvements: C, concrete box; CT, concrete trough; CoB, collection box; CoS, collection sump; CoT, collection tank; D, dugout; N, none; P, piped; S, storage tank; T, tunnel.

Altitude: All altitudes estimated from topographic map (fig. 3) accurate to ±100 feet.
Use of water: D, domestic; Ir, irrigation; N, none; S, stock.

Spring location	Name of spring	Improvements	Land-surface altitude (feet above mean sea level)	Rock type	Terrain	Yield		Use of water	Remarks
						Amount (gpm)	Date		
(B-18-16)7da	Rock Creek	P	3,800		Stream bed	6	1964	S	Flow decreases to 3 gpm in dry season.
9da		D	4,900	Granite	Hillside	1½	1964	S	
15	Mud	D	5,000		Stream bed	3	1964	S	
17bb	Little Hackberry	D	3,800		do	1½	1964	S	Flow decreases in dry season.
31abd	Deadman	D	3,200		Foothills	Dry	1952	N	
(B-18-17)24aad	Little Hackberry	D	3,350		Stream bed	2	1964	S	
(B-18-18)20cdc	Caliche	D	2,500	Tuff	Hillside	2	1964	S	
(B-18-19)4cdd	Antelope	N	2,700	do		Seep	1964	S	
(B-19-16)1acd		N	6,800		Stream bed	2	1964	S	Flow decreases in dry season.
10ca		N	4,250		do	2	1964	S	Do.
11ba		N	4,600		do	2	1964	S	Do.
19ab		N	3,500		do	10	1964	S	Flow decreases to 5 gpm in dry season.
20dc		D	4,500	Granite	Hillside	3	1964	S	Flow decreases in dry season.
20dd	Whiskey Basin	D	4,400	do	do	3	1964	S	Do.
31ddb	Santa Fe	D	4,200			5	1964	S	
34aa		N	5,400	Granite	Hillside	3	1964	S	
(B-19-19)3cca	Cactus	N	2,600	Tuff	Foothills	Seep	1965	S	
4ac	Dripping	D, C	2,800	do	Base of hill	8	1965	S	
17aac		D	2,900	do	Hillside	10	1965	S	Several openings.
17daa	Twin	N	2,800		Foothills	Seep	1965		2 seeps.
20dbd	Cool (Brown)	CoB	3,400	Tuff	Wash	Small	1965	D	
22bdb	Baker	CoT	2,550	Caliche	do	4	1965	S	Flow decreases to 3 gpm in dry season.
29ac	Walker	N	3,200	Tuff		Seep	1965	S	
(B-20-15)17bdd	Tunnel	T	6,800	Clay	Hillside	½	1965	S	No flow in early summer.
18add	Lonepine	CT	5,800	do	do	1	1965	S	
19aac	Dicky	N	6,200	Granite	Stream bed	3	1965	S	
(B-20-16)17dba	Grapevine	N	4,000		do	25	1964	S	Flow decreases in dry season
21bcb	Cottonwood	D	4,100		Wash	10	1964	S	Flow decreases to 5 gpm in dry season.

Table 5.--Records of selected springs in the Sacramento Valley, including the Kingman area, Mohave County, Ariz.--Continued

Spring location	Name of spring	Improvements	Land-surface altitude (feet above mean sea level)	Rock type	Terrain	Yield		Use of water	Remarks
						Amount (gpm)	Date		
(B-20-16)24bbd	Whiskey	N	5,500	Granite	Hillside	1½	1964	S	
25cab		C	6,200	do	do	3	1964	S	
25ccc	Granite	P	5,500	do		¾	1964	S	
26cdc	Yellowflower	P	4,600		Stream bed	20	1964	S	Flow decreases to 5 gpm in dry season.
29bba	Granite	N	4,200		do	15	1964	S	Flow decreases to 10 gpm in dry season.
36bd	Dripping	P	5,900	Granite		¾	1964	S	
36ddc		N	6,550		Stream bed	20	1964	S	Flow decreases to 5 gpm in dry season.
(B-20-17)2cbd	Dozer	D	3,400			1	1964	S	
3adb	Indian	CT	3,350		Foothills	1	1964	S	
13aca	Yellow Jacket	D, C	4,100	Granite	Stream bed	5	1964	S	Flow decreases to 3 gpm in dry season.
14bdc	Lookout	C, P	3,500		do	10	1964	S	Flow decreases to 5 gpm in dry season.
(B-20-19)5bb	Cave	N	3,200	Tuff	Foothills	Seep	1965	S	
5bcd		N	3,500	do	do	Seep	1965	S	
7ab	Trough	N	3,400	do	Stream bed	Seep	1964	S	
7cd	Scenery	N	3,400	do	do	Seep	1964	S	
(B-21-17)2cc	Johnson	T	3,800	Basalt	Canyon	100	1943	N	Old public spring; present flow probably much less.
3aa	Johnson 2	T		Andesite and tuff.		Dry	1943	N	Old reported flow, 40 gpm.
9bb	Willow (Curtain)	T	4,350	Tuff	Hillside	8	1964	D, S	Several openings.
10da	Van Martyr	N	3,750		Stream bed	1	1964	N	
14bd	Lang	T, P		Tuff		50	1944	N	Old public spring; present flow probably much less.
15bbb	Grapevine (Peach)	D	3,750	do		20	1943	S	
15bd	Beale	CoS	3,550	Andesite	Foothills	90	1943	N	Do.
19bab	Jones Seep	T	3,200		do	3	1964	S	Several openings.
29bba		T	3,600	Tuff	Hillside	2	1964	S	Old mine tunnel.
(B-21-20)2cad	Vine (Vind)	D, S	3,850	do	Canyon	10	1965	Ir	
2dbc	Little	D	3,600	do		10	1965	S	

Table 5.--Records of selected springs in the Sacramento Valley, including the Kingman area, Mohave County, Ariz.--Continued

Spring location	Name of spring	Improvements	Land-surface altitude (feet above mean sea level)	Rock type	Terrain	Yield		Use of water	Remarks
						Amount (gpm)	Date		
(B-21-20)11bdc	----------	D, C	3,700	Tuff	----------	2	1965	D	
(B-22-17)6bb	Golconda Mine	T	4,100	Granite	Hillside	12	1964	S	
8dbd	Pine	D, T	4,600	do	----------	1	1964	S	
19cac	O'Fallon	D, T	4,000	do	Wash	Seep	1964	S	Gradually drying up.
28bdc	Hackberry	D	4,700	do	----------	4	1949	S	
34ddc	Johnson Wash 3	D	----------	----------	Canyon	Dry	1943	N	Went dry when nearby well was pumped.
(B-22-18)1dc	Conejo Wash	----------	4,000	----------	----------	-------	-----	S	Natural pool, no visible outflow.
(B-22-20)7acc	Mud	D, P	3,500	Tuff	Foothills	Small	1965	S	No flow in dry season.
13cad	Cottonwood	D	3,550	----------	Stream bed	50	1964	S	
14ada	Willow	N	3,700	----------	do	8	1964	S	
26ad	Burro	N	4,000	----------	do	8	1964	S	
36abb	Little Thorms	D	3,550	Tuff	Canyon	4	1964	S	
36bcd	Red Rock	N	3,600	do	do	3	1964	S	
36dcc	Brasswell	P	3,600	do	do	2	1964	S	
(B-23-17)18bc	Carl Loma Mine	T	4,700	Granite	Hillside	1	1964	S	Old mine tunnel.
29bac	----------	T	5,300	do	----------	1	1964	S	
29cb	Tyler Mine	T	5,300	do	Hillside	1	1964	S	
32bc	Summit Mine	T	5,000	do	do	5	1964	S	
32cb	Alpha Mine	T	5,400	do	do	5	1964	S	
32ccb	Knight Hawk Mine	T	4,400	do	do	5	1964	S	
(B-23-18)1adb	Samoa Mine	T	6,000	do	do	3	1964	S	Flow decreases to 2 gpm in dry season.
2dad	Mayflower Mine	T	4,800	do	do	2	1964	S	
24bcb	Gross	N	4,400	----------	Stream bed	5	1964	S	
25a	----------	N	4,200	----------	do	20	1964	S	Consists of several small springs along ½-mile length of stream bed; flow decreases to 5 gpm in dry season.
36dda	Hog Ranch	T	4,000	Granite	Hillside	1	1965	S	
(B-24-18)36ccc	East Tennessee Mine	T	5,650	do	do	2	1964	S	

Table 6.--Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz.

	Thickness (feet)	Depth (feet)
(B-22-14)10dcb		
Decomposed granite	110	110
Sand	10	120
Clay and sand	25	145
Granite	10	155
Sand and clay	5	160
Granite	2	162
TOTAL DEPTH		162
(B-23-13)19cbb		
Rock	10	10
Sand and gravel	15	25
Rock	5	30
Sand and gravel	3	33
Hard rock and boulder	1	34
Hard rock	1	35
Hard rock, started to break through	5	40
Hard rock	1	41
Broken rock	4	45
Very hard boulder and clay	10	55
Hard rock	1	56
Hard rock and gravel	9	65
Hard rock and sand	50	115
Sand, shale, and boulders	35	150
TOTAL DEPTH		150
(B-23-13)19dcb		
Top soil and sand, very soft	30	30
Sand and boulders, hard and getting harder	45	75
Boulders and clay, boulders were very hard	15	90
Boulders and clay getting softer	10	100
Sand and boulders	50	150
TOTAL DEPTH		150
(B-23-13)20ccd		
Soil	3	3
Cemented boulders	72	75
Clay and gravel	40	115
Volcanic tuff	75	190
Clay and gravel	100	290
Sand and clay	45	335
Cemented clay with soft streaks and sticky	20	355
TOTAL DEPTH		355
(B-23-13)22bbd		
Soil	4	4
Fine sand	28	32
Gravel	9	41
Boulders, gravel, sand	23	64
Granite, sand, clay	30	94
TOTAL DEPTH		94
(B-23-13)29dbc1		
Clay, sand, and gravel; few boulders	33	33
Sand, gravel, and stratified clay beds	79	112
Reddish brown clay, with some sand and gravel	68	180
Sand and gravel	50	230
Sand with some gravel	30	260
Sand and gravel	12	272
TOTAL DEPTH		272
(B-23-13)32aca		
Clay and gravel	46	46
Hard rock, brown	84	130
(B-23-13)32aca—Continued		
Soft brown rock	20	150
Soft clay	20	170
Clay and gravel	60	230
Sand and gravel, streaks of clay	190	420
Clay with streaks of brown rock	35	455
Gray rock	17	472
TOTAL DEPTH		472
(B-23-13)32daa		
Surface soil to sand	20	20
Gravel and rock	20	40
Gravel and boulders	10	50
Gravel and boulders, some sand	20	70
Hard sand	40	110
Various rocks	150	260
Brown clay with boulders	90	350
Sand, clay, silt, and gravel	10	360
Hard rock	10	370
Gravel and clay	130	500
Gravel and clay, very hard	10	510
Sand, with streaks of clay	20	530
Sand, clay, and gravel	50	580
Very hard gravel, silt and shale	30	610
Clay, sandstone, and quartz	114	724
TOTAL DEPTH		724
(B-23-14)3acd		
Gravel	20	20
Gravel and boulders	110	130
Hard gravel and boulders	30	160
Hard boulders	20	180
Gravel and boulders, some sand	50	230
Gravel and boulders	50	280
Hard sand, boulders, some sand	90	370
Gravel and boulders	60	430
Hard sand and boulders	40	470
Gravel and boulders	50	520
Boulders and sand	40	560
Hard sand	30	590
Boulders and sand	10	600
Boulders	20	620
Hard red sand	10	630
TOTAL DEPTH		630
(B-23-14)24aab1		
Surface sand	10	10
Sand and gravel	30	40
Granite and boulders	140	180
Red sand and boulders	60	240
Red sand and boulders, with light streaks of clay	20	260
Red sand and boulders	30	290
TOTAL DEPTH		290
(B-23-15)8ddd		
Clay and sand	9	9
Clay and gravel	171	180
Conglomerate	180	360
Clay and gravel	40	400
Red clay and gravel	30	430
Clay and gravel	25	455
Conglomerate	30	485
Clay and gravel	35	520
Hard conglomerate	90	610
Clay and gravel	25	635
Conglomerate and rock	10	645
Hard conglomerate	25	670
Very hard conglomerate	10	680
Red hard conglomerate	10	690
Red cinders	5	695

Table 6.--Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz.--Continued

	Thickness (feet)	Depth (feet)
(B-23-15)8ddd--Continued		
Red conglomerate	73	768
Hard conglomerate	84	852
Conglomerate	24	876
Hard conglomerate	20	896
Conglomerate with brown clay	28	924
Conglomerate and clay	5	929
TOTAL DEPTH		929
(B-23-15)16d		
Decomp. granite and boulders	75	75
Cemented gravel and boulders	20	95
Quicksand	7	102
Gravel and boulders	38	140
Hard cemented sand and gravel	28	168
Very hard gravel	35	203
Soft streak with adobe	24	227
Hard boulders and gravel	23	250
Boulders and gravel	28	278
Boulders, gravel, and sand	5	283
Hard gravel and sand	20	303
Boulders and gravel	37	340
Boulders and gravel, with very hard streaks	33	373
Soft streaks of adobe	35	408
Hard streaks, some boulders and some adobe streaks	32	440
Loose sand and gravel with hard streaks, some water	49	489
Boulders and gravel	2	491
Sand and gravel, loose streaks	24	515
Hard gravel and sand	35	550
Gravel and some clay streaks	10	560
Hard sand streaks and some water	45	605
Boulders, gravel, and some soft streaks	41	646
Sand, gravel, and some soft streaks	22	668
Hard gravel and adobe	60	728
Sandstone, some water	22	750
Hard lime conglomerate	15	765
Lime conglomerate, volcanic formation	21	786
Very hard rock, volcanic	2	788
Soft burnt clay	32	820
Burnt clay with hard streaks	70	890
Very hard malpais	6	896
Soft malpais	8	904
Very hard malpais	6	910
Soft red porphyry	19	929
Very hard malpais and quartz	11	940
Red malpais mixed with quartz	56	996
Very hard malpais and quartz	39	1,035
Soft malpais and quartz	3	1,038
Solid malpais and quartz	2	1,040
TOTAL DEPTH		1,040
(B-24-14)28dbc		
Alluvium, clay, sand, and gravel with occasional boulders	103	103
Clay, sand, and gravel	6	109
Sand and gravel, some clay	11	120
Clay, sand, and gravel	60	180
Clay and sand, some gravel	11	191
Clay, sand, and gravel as much as half an inch	104	295
Clay and sand, with some gravel	25	320
Clay, sand, and gravel as much as half an inch	88	408
Sand and gravel with some clay, gravel as much as half an inch	14	422
Clay, sand, and gravel as much as half an inch	104	526
Sand and gravel, cemented	4	530
Sand and gravel with some clay	18	548
Clay, sand, and gravel	26	574
Sand and gravel with red clay, gravel as much as half an inch	16	590
Sand and gravel, some red clay, gravel as much as 4½ inches	20	610
Red clay, sand, and gravel	30	640
Brown clay, some sand and gravel	70	710
Brown and reddish-brown clay, some sand and gravel	10	720
Clay, sand, and gravel, hard drilling	21	741
TOTAL DEPTH		741
(B-24-14)29aaa		
Soil	2	2
Gravel and boulders	43	45
Clay and gravel cemented	50	95
Cemented gravel	60	155
Cemented gravel and boulders	135	290
Clay and gravel	130	420
Boulders and gravel	102	522
Rock or boulders	88	610
Cemented gravel	54	664
Rock or boulders	36	700
TOTAL DEPTH		700
(B-24-14)29acb		
Sand and small gravel, red	20	20
Sand and gravel	10	30
Fine sand	10	40
Sand and gravel	30	70
Sand	10	80
Sand and gravel	30	110
Sandstone and coarse sand	20	130
Sandstone	10	140
Sandstone and fine red gravel	8	148
Sandstone	28	176
Quartz and feldspar	37	213
Sand and quartz	7	220
Sand	10	230
Sand and gravel	10	240
Sand	10	250
Sand and gravel	10	260
Brown sand	40	300
Reddish-brown sand	10	310
Shale and brown sand	17	327
Quartz and brown sand	3	330
Quartz and feldspar	13	343
Sand	17	360
Sand and gravel	23	383
Basalt and feldspar	7	390
Sandstone and quartz	10	400
Sandstone	40	440
Sandstone and quartz	40	480
Sandstone, sand, and shale	10	490
Basalt, shale, and feldspar	40	530
Shale and feldspar	10	540
Sand	10	550
Sandstone	44	594
Shale	6	600
Basalt and feldspar	30	630
Sand	150	780
Basalt and feldspar	42	822
Sand	78	900
Basalt and quartz	10	910
Basalt and bedrock	26	936
Basalt and feldspar	4	940
Basalt	9	949
TOTAL DEPTH		949
(B-24-14)33ada		
Decomposed granite and clay	30	30
Decomposed granite and boulders	55	85
Hard boulders	100	185
Hard brown sand	110	295
Hard sand and gravel	75	370
Gravel and boulders	20	390
Brown sandstone and boulders	40	430
Brown gravel	30	460
Brown sand and gravel. Water at 480 feet	20	480
Gravel and rocks	95	575
Solid rocks	5	580
Hard brown sand and gravel	10	590
Quartz	90	680
TOTAL DEPTH		680

Table 6.--Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz.--Continued

	Thickness (feet)	Depth (feet)
(B-26-16)28ddc		
Surface soil. Few small rounded pebbles	10	10
Clay, brown	40	50
Clay, brown and white, silty, little sandstone	10	60
Gravel, small	40	100
Sandstone, medium- to coarse-grained, little brown clay	50	150
Clay, light-brown	60	210
Clay, brown, with large amount sandstone, medium coarse pebbles	50	260
Clay, brown, silty	90	350
Clay, brown, 40 percent sand and small pebbles	50	400
Clay, brown, with small amount sandstone, medium coarse grained	50	450
Clay, brown	130	580
Clay, brown, silty, with 20 percent medium coarse grained sandstone	20	600
No samples	90	690
Clay, brown, with small sand, medium coarse	10	700
Clay, brown, small amount sandstone, medium coarse	90	790
Clay, brown, silty	40	830
Clay, brown to red brown	30	860
Clay, brown	30	890
Clay, brown, with medium coarse conglomerate	30	920
Clay, light-brown	60	980
Clay, light-brown to dark-brown	20	1,000
Clay, light-gray to brown, slight sandstone, medium coarse	10	1,010
Clay, brown to red brown	26	1,036
Cored--no recovery	20	1,056
Recovery--11 feet brown clay	20	1,076
Recovered 18 feet brown and green clay	20	1,096
Brown clay	15	1,111
Clay, brown	39	1,150
Clay, light-brown with slight gray shale	30	1,180
Clay, dark-brown	70	1,250
Clay, brown, with 10 percent sandstone, medium coarse	30	1,280
Clay, brown, with 10 percent sandstone, medium coarse, with slight gypsum and anhydrite	10	1,290
At 1,290 feet pulled bit and ran core barrel. Ran core from 1,290 to 2,135 feet; 845 feet of interval cored.		
Recovered 2 inches brown clay	15	1,305
Recovered 8 inches brown and gray silty shale	15	1,320
No recovery	16	1,336
Brown clay	3	1,339
Recovered 12 feet brown clay	17	1,356
Recovered 18 feet brown clay, with little gypsum	20	1,376
Brown and gray shale	11	1,387
Brown and gray shale with little gypsum and anhydrite	20	1,407
Blue shale, few pieces gypsum, occasional pebble	20	1,427
Blue shale with small blebs of gypsum	20	1,447
Blue and gray shale with little gypsum and anhydrite	10	1,457
Bedded anhydrite and gypsum, with brown clay, inclusions	10	1,467
Anhydrite 60 percent, little gypsum with brown clay partings	20	1,487
Anhydrite 20 percent, blue shale	13	1,500
Shale, brown to green, approximately 40 percent clear halite	38	1,538
Halite, clear, approximately 12 percent brown to reddish-brown clay, small blebs of anhydrite	30	1,568
Halite very clear, coarse grained, inclusions of brown clay	2	1,570
Halite, clear, medium-grained, 15 percent gray clay inclusions	4	1,574
Halite, clear, coarse-grained. Approximately 20 percent brown to reddish-brown clay inclusions	20	1,594
Brown clay parting	1	1,595
Halite, clear, medium- to coarse-grained, varying amounts from 10 to 20 percent brown silty clay	20	1,615
Halite, clear, medium- to coarse-grained. Approximately 12 percent brown to reddish-brown to gray clay inclusions, 2-inch clay parting at bottom	35	1,650
Halite, clear, medium- to coarse-grained. Approximately 5 percent brown clay	15	1,665
Halite, very clear, coarse-grained, small brown clay inclusions	10	1,675
Halite, clear, coarse-grained. Approximately 10 percent brown to reddish-brown clay. A 6-inch vertical clay-filled fracture from 1,690 to 1,690.5 feet	20	1,695
(B-26-16)28ddc--Continued		
Halite, clear, coarse-grained. Approximately 8 percent brown clay, little gray clay	10	1,705
Halite, clear, medium- to coarse-grained	5	1,710
Halite, very clear, coarse-grained	1	1,711
Halite, clear, coarse-grained. Approximately 5 percent gray clay	3	1,714
Halite, clear, approximately 3 percent black clay, little brown with 2-inch clay parting at 1,722 feet	31	1,745
Halite, very clear, medium-grained	3	1,748
Halite, very clear, coarse-grained	2	1,750
Halite, clear, coarse-grained. Approximately 8 percent brown clay	19	1,769
Halite, clear. Approximately 8 percent brown and gray silty clay	11	1,780
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown silty clay	7	1,787
Halite, clear, coarse-grained. Approximately 20 percent brown clay	4	1,791
Halite, clear, coarse-grained. Approximately 4 percent brown clay, little gray clay	31	1,822
Brown clay	2	1,824
Halite, clear, coarse-grained. Approximately 8 percent brown silty clay	4	1,828
Halite, clear, coarse-grained. Approximately 6 percent brown clay, little gray clay	22	1,850
Halite, clear, coarse-grained. Approximately 4 percent brown clay; 6-inch brown clay parting at bottom	28	1,878
Halite, clear, medium-grained. Approximately 8 percent brown clay in the top, grading to 2 percent in the bottom	12	1,890
Halite, clear, coarse-grained, 4 percent brown clay	10	1,900
Halite, very clear, very coarse grained, 3 percent brown clay	8	1,908
Halite, clear, coarse-grained. Approximately 10 percent brown silty clay	16	1,924
Halite, clear, coarse-grained. Approximately 6 percent gray to dark-gray clay	9	1,933
Halite, clear, coarse-grained. Approximately 8 percent dark-brown clay, little gray clay	8	1,941
Halite, clear, coarse-grained, 3 percent brown clay	24	1,965
Halite, clear, coarse-grained. Approximately 4 percent brown silty clay	4	1,969
Halite, clear, coarse-grained. Approximately 8 percent brown clay, occasional clay parting, few gray clay inclusions	32	2,001
Halite, clear, coarse-grained. Approximately 5 percent brown, silty clay, clay parting at bottom	15	2,016
Halite, very clear, very coarse grained	4	2,020
Halite, clear, coarse-grained. Approximately 4 percent brown clay	37	2,057
Halite, clear, coarse-grained. Alternating bands of brown clay and halite top 4 feet	23	2,080
Halite, very clear, coarse-grained. Approximately 8 percent brown to reddish-brown clay	5	2,085
Halite, clear, medium- to coarse-grained. Approximately 18 percent brown clay, little gray clay inclusions	20	2,105
Halite, clear, coarse-grained. Approximately 12 percent brown clay	30	2,135
TOTAL DEPTH		2,135
(B-26-16)30ddd		
Surface soil (clay, brown and gray, few small rounded pebbles)	10	10
Clay, brown, silty, few pebbles	10	20
Clay, brown, silty, approximately 10 percent white loose clay	20	40
Clay, brown, silty, slight white	10	50
Clay, brown and white, silty, few small pebbles	10	60
Gravel (small rounded), brown clay	10	70
Gravel (small rounded)	30	100
Sand and gravel (small gravel)	10	110
Sand and gravel	40	150
Sand and gravel. Approximately 50 percent brown		

Table 6.--Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz.—Continued

	Thickness (feet)	Depth (feet)
(B-26-16)30ddd—Continued		
clay, silty	10	160
Clay, brown, silty, few small pebbles	10	170
Clay, brown, silty, 50 percent gravel	10	180
Clay, brown, silty, few small pebbles	30	210
Clay, brown, silty, occasional small pebble	90	300
Sand and small gravel. Approximately 50 percent brown clay	10	310
Sand and gravel, brown clay	10	320
Clay, brown, silty. Approximately 50 percent sand and gravel	20	340
Clay, brown, silty; 10 percent sand and gravel	10	350
Clay, brown, silty, occasional small pebble	30	380
Clay, brown, sandy, few small pebbles	20	400
Clay, brown	30	430
Clay, brown, occasional small pebble	10	440
Clay, brown	70	510
Brown clay, occasional pebble	10	520
Clay, brown	20	540
Clay, brown, occasional pebble	10	550
Clay, brown. Approximately 15 percent small gravel	10	560
Clay, brown, few small pebbles	30	590
Clay, brown	70	660
Clay, brown. Approximately 30 percent coarse sand and small gravel	40	700
Clay, brown	10	710
Clay, brown, stringers of gray shale	70	780
Clay, brown, stringers of shale, few pieces of gypsum	10	790
Clay, brown, traces of gypsum	10	800
Clay, brown, stringers of gray shale	10	810
Clay, brown, stringers of gray shale, few pebbles	10	820
Sand, medium- to coarse-grained, some brown clay	10	830
Sand, medium- to coarse-grained, some brown clay, gray shale stringers	10	840
Clay, brown, few small pebbles	10	850
Clay, brown, stringers of gray clay, occasional small pebbles	10	860
Clay, brown and gray	30	890
Clay, gray brown	20	910
Clay, gray brown, inclusions of red and gray clay	20	930
Clay, gray	40	970
Clay, brown and gray, few small pebbles	10	980
Clay, brown and gray	10	990
Clay, brown, gray, and slight bluish	30	1,020
Clay, brown and gray, a little reddish brown	10	1,030
Clay, brown and gray, a little bluish gray clay	70	1,100
Clay, brown	70	1,170
Clay, brown, little gray	30	1,200
Clay, brown	50	1,250
Clay, brown, a little gypsum	20	1,270
Clay, brown. Approximately 25 percent gypsum	30	1,300
Gypsum	10	1,310
At 1,310 feet set 4½-inch O.D. casing, Feb. 25, 1958. Lost circulation. No samples	90	1,400
Recovered 6 feet. Bedded anhydrite and brown silty shale	18	1,418
Recovered 3 feet. Badly leached halite with gray and brown clay inclusions	20	1,438
Recovered 6 feet. Badly leached halite with brown silty clay inclusions	21	1,459
Halite, clear, medium- to coarse-grained. Approximately 12 percent brown silty clay	14	1,473
Halite, very clear, very coarse grained. Light inclusions of brown clay in the top 11 inches	3	1,476
Shale, brown, silty. A few blebs of halite and white anhydrite	1	1,477
Halite, clear, coarse-grained	1	1,478
Shale, brown to gray, silty. Approximately 30 percent clear halite	2	1,480
Halite, clear, coarse-grained. Approximately 10 percent brown silty clay	14	1,494
Halite, clear, medium-grained. Light inclusions of black clay	3	1,497
Halite, clear, medium- to coarse-grained. Approximately 8 percent brown to reddish-brown silty clay	15	1,512
Halite, very clear, coarse-grained	1	1,513
Shale, brown, silty. Few blebs of halite	1	1,514
Halite, clear, medium- to coarse-grained. Approximately 10 percent brown, silty clay	6	1,520
(B-26-16)30ddd—Continued		
Halite, clear, medium-grained. Approximately 5 percent brown to reddish-brown, silty clay	39	1,559
Halite, clear, medium-grained. Approximately 8 percent gray, silty clay	3	1,562
Clay, brown and gray, silty. Few halite blebs	1	1,563
Halite, clear, medium-grained. Approximately 10 percent brown, silty clay	1	1,564
Halite, clear, medium-grained. Approximately 5 percent brown, silty clay. An irregular brown clay parting at 1,571.25 feet	8	1,572
Halite, very clear, very coarse grained	1	1,573
Clay, brown, silty		1,573
Halite, clear, medium-grained. Approximately 8 percent brown, silty clay	3	1,576
Halite, very clear, very coarse grained. Light inclusions of brown clay	1	1,577
Clay, brown, silty. A few halite crystals	1	1,578
Halite, clear, medium- to coarse-grained. Approximately 4 percent brown, silty clay. Clay partings at 1,577.75 and 1,582.16 feet	21	1,599
Halite, clear, medium- to coarse-grained. Approximately 2 percent brown clay	4	1,603
Halite, clear, coarse-grained. Approximately 4 percent brown clay	11	1,614
Halite, clear, coarse-grained	1	1,615
Halite, clear, coarse-grained. Approximately 5 percent brown silty clay	3	1,618
Halite, clear, medium- to coarse-grained. Approximately 6 percent brown, silty clay	6	1,624
Halite, clear, coarse to very coarse grained. Approximately 2 percent brown, silty clay	8	1,632
Halite, very coarse grained. Clear. Light inclusions of brown clay in top 12 inches	3	1,635
Halite, clear, coarse-grained. Approximately 30 percent sandy brown clay. Clay parting at bottom	1	1,636
Halite, clear, medium- to coarse-grained. Varying amounts from 2 to 5 percent brown silty clay	44	1,680
Halite, clear, coarse-grained. Approximately 3 percent brown silty clay	3	1,683
Halite, clear, coarse-grained. Approximately 25 percent brown, silty clay	1	1,684
Halite, clear, coarse-grained. Approximately 2 percent brown, silty clay	3	1,687
Halite, clear, medium- to coarse-grained. Approximately 7 percent brown, silty clay	4	1,691
Halite, clear, medium-grained. Approximately 3 percent brown, silty clay	9	1,700
Clay, gray, sandy	1	1,701
Halite, clear, medium-grained. Approximately 25 percent brown to gray sandy clay. Approximately 20 inches clay-filled vertical fracture in bottom	4	1,705
Halite, very clear, coarse-grained. Very light inclusions of brown, silty clay	1	1,706
Halite, clear, medium-grained. Approximately 3 percent brown, silty clay. A thin seam at top	19	1,725
Halite, clear, coarse-grained. Very light inclusions of brown silty clay	1	1,726
Halite, clear, medium- to coarse-grained. Approximately 4 percent brown silty clay	20	1,746
Halite, clear, coarse-grained. Light inclusions of brown clay. Occasional blebs of white anhydrite	6	1,752
Halite, very clear, very coarse grained	1	1,753
Halite, clear, medium- to coarse-grained. Approximately 4 percent brown silty clay. Light inclusions of black clay from 1,759 to 1,764 feet	14	1,767
Halite, clear, coarse-grained. Light inclusions of brown silty clay	1	1,768
Halite, clear, medium- to coarse-grained. Approximately 8 percent brown and gray silty clay	7	1,775
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown silty clay	22	1,797
Halite, very clear, very coarse grained	2	1,799
Halite, clear, medium-grained. Approximately 5 percent brown silty clay	9	1,808
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown to reddish-brown clay. Clay partings at 1,816 and 1,837 feet	31	1,839

Table 6. --Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz. ——Continued

	Thickness (feet)	Depth (feet)
(B-26-16)30ddd——Continued		
Halite, clear, coarse-grained. Approximately 5 percent gray clay	3	1,842
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown clay	2	1,844
Halite, clear, coarse-grained. Approximately 1 percent brown silty clay	9	1,853
Halite, clear, coarse-grained. Approximately 3 percent brown silty clay. Thin brown clay parting at 1858.66 feet	6	1,859
Halite, clear, coarse-grained. Approximately 2 percent brown silty clay	11	1,870
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown silty clay	31	1,901
Halite, very clear, very coarse grained	2	1,903
Halite, clear, coarse-grained. Approximately 4 percent brown clay	1	1,904
Halite, very clear, very coarse grained. Brown clay parting at bottom	3	1,907
Halite, clear, medium- to coarse-grained. Approximately 5 percent brown silty clay	12	1,919
Halite, very clear, very coarse grained	5	1,924
Halite, clay medium to coarse grained. Approximately 2 percent brown silty clay	5	1,929
Halite, clear, coarse-grained. Approximately 4 percent brown silty clay	6	1,935
Halite, clear, medium-grained. Approximately 5 percent gray clay, some brown	2	1,937
Halite clear, medium- to coarse-grained. Approximately 3 percent brown clay	10	1,947
Halite, clear, medium-grained. Approximately 4 percent brown silty clay	2	1,949
Halite, clear, medium- to coarse-grained. Approximately 8 percent brown silty clay. A thin clay seam at 1933.5 feet. A ½-inch vertical clay-filled fracture in the bottom 15 inches	6	1,955
Halite, very clear, very coarse grained. A clay parting at the bottom	2	1,957
Halite, clear, medium-grained. Approximately 3 percent brown clay	2	1,959
Halite, very clear, very coarse grained	3	1,962
Halite, clear, medium- to coarse-grained. Approximately 3 percent brown clay	7	1,969
Halite, very clear, very coarse grained. Light inclusions of brown clay	1	1,970
Halite clear, medium-grained. Approximately 6 percent brown clay	2	1,972
Halite, very clear, very coarse grained	2	1,974
Shale, reddish-brown, silty	2	1,976
Halite, clear, medium-grained. Approximately 5 percent brown and gray clay	4	1,980
Halite, clear, medium- to coarse-grained. Approximately 8 percent gray sandy shale	1	1,981
Shale and fine sandy shale, gray. Approximately 15 percent halite	1	1,982
Halite, clear, coarse-grained. Approximately 4 percent brown sandy clay	8	1,990
Halite, clear, coarse-grained. Approximately 10 percent brown silty clay	9	1,999
Halite, clear, coarse-grained. Approximately 5 percent brown silty clay	10	2,009
Halite clear, coarse-grained. Approximately 10 percent brown silty clay. An 8-inch vertical clay-filled fracture from 1,990.08 to 1,990.75 feet	7	2,016
Halite, clear, coarse-grained. Approximately 6 percent dark-gray clay. A little brown clay	9	2,025
Halite, clear, coarse-grained. Approximately 4 percent brown silty clay. A clay parting at the bottom	3	2,028
Halite, clear, medium- to coarse-grained. Approximately 12 percent brown silty clay in the top 2 feet grading to 5 percent in the bottom 18 inches	4	2,032
Halite, clear, medium-grained. Clear coarse grained in the top 2 inches. Approximately 8 percent brown silty clay	2	2,034
Halite, very clear, very coarse grained. Light inclusions of brown silty clay	10	2,044
Halite, clear, medium- to coarse-grained. Approximately 5 percent black clay, some brown clay	8	2,052
Halite, clear, coarse-grained. Approximately 6 percent brown silty clay, some gray clay	25	2,077
Halite, very clear, very coarse grained. A ½-inch brown silty clay seam at the bottom	1	2,078
Halite, clear, medium- to coarse-grained.	17	2,095
Halite, very clear, very coarse grained	2	2,097
Halite, very clear, very coarse grained. Light inclusions of brown clay	1	2,098
Halite, clear, coarse-grained. Approximately 3 percent brown silty clay	1	2,099
Halite, very clear, very coarse grained	1	2,100
Halite, clear, coarse-grained. Approximately 7 percent brown silty clay in the top 4 feet grading to 3 percent in the bottom 6 feet	10	2,110
Halite, very clear, coarse-grained	1	2,111
Halite, clear, medium- to coarse-grained. Approximately 4 percent black clay	3	2,114
Halite, clear, medium- to coarse-grained. Approximately 6 percent brown silty clay	28	2,142
Halite, clear, medium-grained. Approximately 2 percent reddish-brown clay	7	2,149
Halite, clear, medium- to coarse-grained. Approximately 3 percent black clay	3	2,152
Halite, clear, coarse-grained. Approximately 9 percent brown silty clay. Occasional clay parting. Occasional black clay inclusion	26	2,178
Halite, clear, medium- to coarse-grained. Approximately 4 percent brown silty clay, a little black clay	12	2,190
Halite, clear, medium-grained. Approximately 7 percent brown silty clay	2	2,192
Sandstone, fine-grained, gray. A few clear halite crystals	2	2,194
Halite, clear, medium- to coarse-grained. Inclusions of gray fine-grained sandstone	2	2,196
Halite, clear, coarse-grained. Approximately 5 percent brown silty clay. A 1-inch band of brown clay at 2,197.75 feet	5	2,201
Halite, very clear, very coarse grained. Very light inclusions of black clay	2	2,203
Clay, black, a little brown	1	2,204
Halite, clear, coarse-grained. Approximately 7 percent black clay	13	2,217
Clay, black	1	2,218
Halite, clear, coarse-grained. Approximately 2 percent black clay and halite at 2,223 feet and a brown clay parting at 2,233.5 feet	18	2,236
Halite, clear, coarse-grained. Approximately 2 percent black clay	6	2,242
Halite, clear, medium-grained. Approximately 8 percent brown clay in the top 2 feet grading to 3 percent in the bottom	6	2,248
Halite, clear, coarse-grained. Approximately 4 percent black clay	5	2,253
Clay, gray	1	2,254
Halite, clear, medium- to coarse-grained. Approximately 3 percent black clay	1	2,255
Halite, clear, medium- to coarse-grained. Approximately 6 percent reddish-brown clay	6	2,261
Halite, clear, coarse-grained. Approximately 3 percent black clay. A clay parting at the bottom	4	2,265
Halite, clear, coarse-grained. Approximately 6 percent reddish-brown silty clay. A clay parting at the bottom	1	2,266
Halite, clear, coarse-grained. Approximately 3 percent black clay	3	2,269
Halite, very clear, very coarse grained bands alternating with bands of clear coarse grained with clay inclusions. Clay partings at 2,271.33, 2,273, and 2,274.33 feet	7	2,276
Clay, reddish-brown, silty. Bands of clear, coarse-grained halite	1	2,277
Halite, very clear, very coarse grained	1	2,278
Lost core	2	2,280
Clay, brown, silty	3	2,283
Halite, clear, medium- to coarse-grained. Approximately 5 percent brown silty clay	19	2,302
Halite, dark-gray clay. Approximately 4 percent clay medium to fine grain	5	2,307
Halite, very clear, fine grain	1	2,308
Halite, clear with clay inclusions, M-C grained. Approximately 4 percent clay. Clay partings at 2,309.16 and 2,310.16 feet	6	2,314
Halite, very clear, fine-grained	4	2,318

Table 6.--Selected drillers' logs of wells in the Hualapai Valley, Mohave County, Ariz.--Continued

	Thickness (feet)	Depth (feet)
(B-26-16)30ddd--Continued		
Halite, clear with clay inclusions. Approximately 7 percent clay	4	2,322
Halite, very clear, with alternating clay parting. Approximately 8 percent brown clay	1	2,323
Halite, clear, coarse-grained	3	2,326
Halite, clear, medium- to coarse-grained. Approximately 8 percent brown clay	3	2,329
Brown clay partings	1	2,330
Halite, clear, coarse-grained. Approximately 1 percent brown clay	4	2,334
Halite, clear, coarse-grained, with small brown clay inclusions	3	2,337
Halite, clear, with alternating bands of brown clay, silty. Approximately 3 percent clay. Coarse grained	4	2,341
Halite, clear, coarse, with approximately 10 percent brown clay, silty, with clay partings at bottom	10	2,351
Halite, clear, coarse-grained, with approximately 2 percent dark-gray clay	7	2,358
Clay, brown, silty	1	2,359
Halite, clear, with large clay inclusions. Approximately 5 percent clay, brown, coarse	1	2,360
Halite, clear, with dark-gray clay, coarse-grained; 3 percent clay	12	2,372
Clay, silty	1	2,373
Halite, clear, coarse-grained. Approximately 3 percent brown clay	9	2,382
Clay with bands halite	1	2,383
Halite, clear, dark-gray, with clay inclusions. Approximately 5 percent gray clay	19	2,402
Halite, clear, clay inclusions. Coarse to medium grained. Clay 3 percent	12	2,414
Halite, clear, clay parting with vertical fractures. Approximately 20 percent reddish-brown clay	2	2,416
Halite, clear, gray clay, medium- to coarse-grained	8	2,424
Halite, clear, medium- to coarse-grained, light-gray, gray clay inclusions. Approximately 12 percent clay	13	2,437
Halite, very clear, fine-grained, with clay partings	1	2,438
Halite, clear, with clay inclusions, light-brown. Approximately 10 percent clay	1	2,439
(B-26-16)30ddd--Continued		
Silty clay parting, light-brown	11	2,450
Halite, clear, grading from fine to coarse grained, grading light gray to dark gray in color. Approximately 8 percent clay	21	2,471
Halite, clear, vertical fracture, 18 percent clay, medium-grained, gray	2	2,473
Halite, clear, medium- to coarse-grained, dark-gray, clay inclusions	4	2,477
Halite, clear, dark-gray, medium- to coarse-grained. Approximately 12 percent gray clay	9	2,486
Halite, clear, coarse-grained; 2-inch silty clay parting, light brown in color	4	2,490
Halite, clear, 4-inch clay parting, brown, medium- to coarse-grained. Approximately 8 percent brown clay. Color grading from dark brown to light gray. Little brown silty clay inclusions	17	2,507
Halite, clear, medium- to coarse-grained. Approximately 7 percent brown silty clay inclusions	15	2,522
Halite, clear, medium- to coarse-grained. Approximately 8 percent dark-gray clay with some brown clay inclusions	21	2,543
Halite, clear, medium- to coarse-grained. Approximately 30 percent silty brown clay, 3-inch brown clay parting	2	2,545
Halite, clear, coarse-grained. Approximately 15 percent silty dark-gray clay	6	2,551
Halite, clear, medium- to coarse-grained. Approximately 9 percent silty brown clay	18	2,569
Halite, clear, medium- to coarse-grained, large light-brown clay inclusions. Approximately 15 percent brown silty clay, with some gray clay inclusions	5	2,574
Halite, clear, coarse-grained. Approximately 5 percent brown silty clay	6	2,580
Halite, clear, coarse-grained, light-brown, grading to light gray. Approximately 4 percent silty clay	12	2,592
Halite, clear, coarse-grained. Approximately 10 percent brown silty clay, grading to light gray at bottom; 6-inch brown clay parting	16	2,608
TOTAL DEPTH		2,608

Table 7. --Selected drillers' logs of wells in the Sacramento Valley, Mohave County, Ariz.

	Thickness (feet)	Depth (feet)
(B-17-18)12bca		
Cemented sand and gravel	370	370
White shale	85	455
Cemented gravel	100	555
Tuff or lava	250	805
Malpais	22	827
Tuff or lava	78	905
Granite	99	1,004
TOTAL DEPTH		1,004
(B-19-17)6acb		
Sand and boulders	45	45
Brown sand	45	90
Large boulders	70	160
Brown sand	15	175
Sand and gravel	45	220
Black lava rock	85	305
Yellow sand	75	380
Black lava rock	25	405
Flint rock	6	411
Black lava rock	5	416
Gray granite	56	472
Black lava rock	8	480
Gray granite	54	534
Shale	41	575
Disintegrated	25	600
Hard solid granite	84	684
TOTAL DEPTH		684
(B-19-19)17baa		
Rhyolitic tuff	94	94
Pink clay	13	107
White and gray clay	11	118
Pink clay	12	130
Lava, fractured	43	173
Gray clay	88	261
Gravel	2	263
Gray clay	5	268
Blue clay	8	276
Gray clay	10	286
Yellow clay	16	302
Basalt	1	303
Rhyolitic tuff	1	304
TOTAL DEPTH		304
(B-21-17)3ddb		
Basaltic sand and boulders	9	9
Transition from dense basalt to vesicular lava	19	28
Medium hard basalt	15	43
Hard, dark-colored basalt	73	116
Volcanic breccia	4	120
Basalt breccia and volcanic breccia	14	134
Basalt breccia	13	147
Light-gray basalt	35	182
Gray basalt	12	194
Basalt with yellow clay	29	223
Volcanic breccia	2	225
Basalt and volcanic breccia, beds alternating	53	278
Basalt	47	325
TOTAL DEPTH		325
(B-21-17)24cda		
Top soil	5	5
Hardpan	13	18
Sand	2	20
Sand, cemented	6	26
Cemented gravel	69	95
Small gravel	2	97
Decomposed granite	49	146
Malpais	32	178
TOTAL DEPTH		178
(B-21-17)24cdb		
Clay and shale	65	65
Shale, talc, and porphyry	100	165
Malpais rock	67	232
TOTAL DEPTH		232
(B-21-18)9bbb		
Dry sand	25	25
Fine sand and silt	35	60
Coarse sand and gravel	30	90
Sand and silt	70	160
Sand and fine gravel	20	180
Coarse sand	50	230
Sand, silt, and gravel	160	390
Sand, gravel, and boulders	105	495
Clay and boulders	105	600
Sand and gravel with clay streaks	55	655
Clay and large boulders	90	745
Sand, silt, and boulders	225	970
Sand, silt, and gravel	50	1,020
Sand, fine gravel, water at 1,035 feet	15	1,035
Sand, gravel, and boulders (water)	40	1,075
Hard sandstone	70	1,145
Soft sandstone with fine gravel	85	1,230
Sandstone, gravel with layers of clay	20	1,250
Pink slate	20	1,270
Pink clay	20	1,290
Clay and large boulders	60	1,350
Clay, boulders with streaks of sand	20	1,370
Clay with gravel	20	1,390
Bentonite, white	77	1,467
Clay, silt, and sand	51	1,518
TOTAL DEPTH		1,518
(B-21-18)30abb		
Top soil	4	4
Caliche	26	30
Sandy clay	220	250
Cemented sand and gravel	77	327
Loose sand and gravel	33	360
Hard conglomerate	70	430
Sand and gravel with hard clay	370	800
Tight cemented sand and gravel	60	860
Cemented sand, gravel, and clay	70	930
Cemented gravel and small boulders, very little clay	288	1,218
Clay, very sticky	112	1,330
Fine sandy clay	15	1,345
Packed sand and gravel	30	1,375
Sticky clay	10	1,385
TOTAL DEPTH		1,385

Table 7.--Selected drillers' logs of wells in the Sacramento Valley, Mohave County, Ariz.—Continued

	Thickness (feet)	Depth (feet)
(B-21-18)32 bbc		
Top soil	6	6
Sandy clay and some gravel	264	270
Sand and gravel and clay binder	425	695
Gravel and cemented pack sand	115	810
Sand, gravel, and boulders	15	825
Sand and gravel, cemented	60	885
Conglomerate	145	1,030
Red clay streaks	30	1,060
Very hard conglomerate	115	1,175
Extra hard conglomerate	20	1,195
Lava boulders with sand and sticky clay	41	1,236
Boulders, sand, and sticky clay	39	1,275
Conglomerate showing quartz	60	1,335
(B-21-18)32bbc—Continued		
Quartz	20	1,355
TOTAL DEPTH		1,355
(B-21-19)8bbc		
Cemented gravel and granite boulders	72	72
Hard decomposed granite	118	190
Hard solid granite	5	195
TOTAL DEPTH		195

Table 8. --Selected drillers' logs of wells in the Big Sandy Valley, Mohave County, Ariz.

	Thickness (feet)	Depth (feet)
(B-15-13)13ab		
Soil and boulders	17	17
Boulders and silt	3	20
Sand, boulders, and water	15	35
Clay and rock	85	120
TOTAL DEPTH		120
(B-16-13)27abc		
Sand and gravel	34	34
Hard rock	6	40
Sand and gravel	65	105
Clay, brown	20	125
Gravel, white	5	130
Clay, red	20	150
TOTAL DEPTH		150
(B-16-13)27bbb		
Rock, sand, and clay	96	96
Rock, sand, very little clay	54	150
Sand	40	190
Clay and rock	10	200
TOTAL DEPTH		200
(B-16½-13)33da		
Soil, sand, and gravel	23	23
Sandstone, hard	5	28
Clay	281	309
Rock, very hard	1	310
Sand	13	323
TOTAL DEPTH		323
(B-17-14)1b		
Sand and boulders	50	50
Decomposed granite	50	100
Sand, fine	50	150
TOTAL DEPTH		150
(B-18-14)28bb		
No information	37	37
Altered granite, first water	3	40
Granite, more water	14	54
Limestone(?)	6	60
Granite and water	13	73
Diabase	53	126
Fault gouge and conglomerate	24	150
Coarse material	20	170
TOTAL DEPTH		170
(B-18-14)33ba		
Granite	154	154
TOTAL DEPTH		154
(B-19-13)16db		
Soil	4	4
Clay, sand, loam	38	42
Gravel, quicksand	13	55
Hardpan	5	60
Gravel, quicksand	18	78
Hardpan	1	79
TOTAL DEPTH		79
(B-20-12)8bbd		
Sand and gravel	40	40
Sand and clay	70	110
Decomposed granite	10	120
Sand and gravel(?)	72	192
Granite	.....	192
TOTAL DEPTH		192
(B-20-13)17b		
Clay	442	442
Coarse gravel	58	500
TOTAL DEPTH		500
(B-21-14)21dcc		
Limestone	12	12
Black cinders	33	45
Red shale	25	70
Sandy blue clay	65	135
Sandy blue clay and hard ledges	55	190
Red clay and sand	8	198
Blue sand	3	201
Red sandy clay	48	249
Hard rock	18	267
Granite wash and conglomerate	10	277
Sand	4	281
Conglomerate	11	292
Sandy clay and conglomerate	14	306
Conglomerate and gravel	8	314
Conglomerate and granite	3	317
No data	33	350
TOTAL DEPTH		350
(B-21-14)23bbb		
Gravel and boulders	114	114
Sand and hard ledges	136	250
Sand and hard malpais ledges	84	334
Clay and hard malpais ledges	26	360
Sand and hard malpais ledges	75	435
Clay	25	460
Hard rock	5	465
Sandy clay and hard ledges	50	515
Clay and hard ledges	81	596
Sand and hard ledges	34	630
Sandy clay and hard ledges	115	745
Clay and hard ledges	44	789
Hard rock	7	796
Clay and hard ledges	34	830
Sand and hard ledges	25	855
Sand and malpais ledges	43	898
Hard rock	7	905
Sandy clay and hard ledges	5	910
Schist and quartz sand, no rounding, hard	5	915
TOTAL DEPTH		915
(B-22-13)9abc		
Sand, clay, and boulders; very hard sand at 30 feet	40	40
Fine red sand and coarse blue sand	60	100
Fine red sand	30	130
Fine red sand, streaks of red sand	35	165
Fine red sand, streaks of blue sand	70	235
Fine red sand	18	253
Red sand and boulders	17	270
Red sand	17	287
Red sand, very hard	18	305
Red sand and boulders	16	321
Red sand, blue sand, and boulders	17	338
Brownish sand, blue sand, and boulders	19	357
Reddish-brown sand, blue sand, and boulders	18	375
Reddish-brown sand, blue sand, boulders, and basalt	16	391

Table 8.--Selected drillers' logs of wells in the Big Sandy Valley, Mohave County, Ariz.—Continued

	Thickness (feet)	Depth (feet)
(B-22-13)9abc—Continued		
Reddish-brown sand, some blue sand, basalt boulders	14	405
Brownish sand, black sand, boulders	12	417
Reddish-brown sand, black sand in small quantities, boulders	16	433
Reddish-brown sand, boulders	16	449
Reddish-brown sand, some blue sand	17	466
Brown and red sand, little clay	17	483
Brown and red sand, small amount of clay	20	503
Reddish-brown sand, blue sand boulders	17	520
Reddish-brown sand, small amount of clay	21	541
Bluish sand, with small particles of red sand	19	560
(B-22-13)9abc—Continued		
Red sand with blue sand	22	582
Bluish sand and red sand. Some harder and beginning to change to gray	28	610
Gray rock, showing some red, very hard	35	645
Gray rock, still showing some red, softer	15	660
Gray and red, harder	20	680
Gray and red rock, firm	20	700
Gray rock and red, still firm	30	730
Gray rock showing more red rock	44	774
TOTAL DEPTH		774

Table 9.--Chemical analyses of ground water in the Hualapai Valley, Mohave County, Ariz.

[Analytical results in parts per million except as indicated. Remarks: ASHL, Arizona State Health Laboratory; USGS, U.S. Geological Survey]

Well location	Date of collection	Depth (feet)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Hardness as $CaCO_3$	Remarks
(B-21-17)1cab	9-11-63	503	.....	48	31	12	180	0	12	6.0	0.4	9.0	.....	358	250	Annual well sample, ASHL.
(B-22-15)33dad	6-10-65	1,220	.....	15	5	83	176	0	38	30	1.2	12	0.26	302	58	USGS.
(B-22-16)28dbb	1- 9-64	1,000	.....	29	19	30	152	0	13	.5	.9	8.0	.....	282	150	Annual well sample, ASHL; chromium, 0.03.
(B-23-13)19cbb	11-10-64	150	0.9	30	32	42	172	4	36	52	.5	5.0	.....	415	210	Annual well sample, ASHL.
19dda	11-10-64	1,030	.....	40	17	47	174	10	26	46	.5	2.0	.....	358	168	Do.
20ccd	11-10-64	355	.....	50	33	45	228	8	39	58	.5	8.0	.....	444	260	Do.
29dbc2	11-10-64	593	.2	69	28	42	240	12	37	66	.4	2.0	.....	486	290	Do.
(B-23-15)8ddd	3- 5-65	929	.2	48	9	53	132	0	45	57	1.7	7.0	.....	344	158	Do.
(B-28-17)31ccc	6-10-65	800	.....	3.6	1.2	460	120	41	95	528	1.2	.4	.55	1,200	14	USGS.

Table 10.--Chemical analyses of ground water in the Sacramento Valley, Mohave County, Ariz.

[Analytical results in parts per million except as indicated. Remarks: ASHL, Arizona State Health Laboratory; U. of A., University of Arizona Agricultural Experiment Station; USGS, U.S. Geological Survey]

Well location	Date of collection	Depth (feet)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids	Hardness as $CaCO_3$	Remarks
(B-17-17)31bcb	6-10-65	460	.....	42	22	42	150	0	65	63	0.9	6.4	0.08	352	196	USGS.
(B-17-18)12bca	- -62	1,004	.....	34	26	42	.....	.....	34	46	.9	12	.....	339	193	Annual well sample, ASHL.
12bcb	6-17-61	787	.....	26	23	39	183	0	27	46	1.2	.....	.....	344	159	U. of A.
(B-21-17)3dc3	11-10-64	186	.....	45	26	11	204	0	10	15	.4	6.0	.....	322	220	Annual well sample, ASHL.
24cbc	11-10-64	.....	.....	58	30	26	208	2	29	41	.6	7.0	.....	390	270	Do.
24cda	- -62	178	.....	66	25	25	.....	.....	31	48	.8	15	.....	391	270	Do.
24cdb	11-10-64	232	.....	62	25	27	200	12	28	51	1.0	9.0	.....	422	260	Do.
24cdd2	11-10-64	.....	.....	45	24	26	124	0	34	65	.9	14	.....	376	210	Do.
(B-21-18)9bbb	3-14-63	1,518	0.2	47	18	79	120	0	162	56	.6	6.0	.....	487	194	ASHL.
(B-22-18)12caa	7- 8-64	120	.....	122	47	116	390	0	295	88	1.1	.....	.....	1,058	499	U. of A.
(B-23-18)3adb	- -62	145	.....	200	84	100	.....	.....	475	50	2.2	.....	.....	1,674	746	ASHL.
3cbb	- -62	104	.....	200	34	225	.....	.....	460	264	1.7	150	.....	1,431	765	ASHL.