

Table 40.--Selected well logs--Continued

Material	Thick- ness (feet)	Depth (feet)	Material	Thick- ness (feet)	Depth (feet)	Material	Thick- ness (feet)	Depth (feet)	Material	Thick- ness (feet)	Depth (feet)		
<u>17/28-18bd--Continued</u>			<u>17/29-18bd--Continued</u>			<u>18/29-5bac--Continued</u>			<u>18/29-5aaa--Continued</u>				
Shale	16	1,266	NOTE.--D. F. Hewett, of the U.S. Geological Survey, visited this well in May 1922, when it was 2,845 feet deep. He reported (U.S. Geol. Survey open-file report, 1922): water level stood 300 feet below surface, gas bubbled up from outside the casing and was under slight pressure in casing cuttings were "largely greenish shaly clay, probably derived from finely divided water laid tuff, and no volcanic flow or breccia material was recognized. Cuttings contained minute shells, which in field were considered to be gastropods and bivalves. Specimens were submitted to the National Museum, but the only fossils found were simple ostracods considered to be derived from fresh water Tertiary rocks." R. W. Richards (U.S. Geol. Survey open-file report, 1947) mentioned that various items in the Churchill County Eagle between June 10, 1922, and October 1923 stated that the well reached 3,036 feet with rotary equipment, then was deepened either 96 or possibly 264 feet by cable-tool, between September 1922 and October 1923. In June 1922, 6 1/2-inch casing was set at 2,590 feet; later this casing was pulled and 4-inch casing was run to 3,035 feet and 3-inch to 3,128 feet; 70 feet of hard sandstone with "oil and gas showing" is reported below about 2,875 feet, and below 3,128 feet, very hard sandstone, with drilling rates from 1 to 3 feet a day, and a "strong gas show" between 3,147 and 3,152 feet. Richards reported, however, that C. D. Murray, who did most of the cable-tool drilling, recollected in 1946 that most of the section was soft shale.			Sand, fine grained, subangular	5	385	Sand, brown, poorly sorted fine to coarse, little rounded	12	182		
Limestone shale, hard	.5	1,266.5				Clay, gray, hard	5	390	basalt gravel, grass roots, little clay, loose				
Shale, sandy	9.5	1,276				Clay, gray, sandy, trace of lime	25	415	Sand, brown, poorly sorted, round to subangular, loose			5	187
Limestone shale, hard	1	1,277				Clay, gray, trace of sand	5	420	Sand, brown, poorly sorted, subangular, loose, green and gray clay			35	222
Shale, blue, with limestone streaks	11	1,288				Clay, gray, more sand	10	430	Sand, dark brown, poorly sorted fine to coarse, round to subangular; quartz and basalt grains, less clay than above, loose mud			20	242
Sand	2	1,290				Clay, gray, sticky, trace of sand	27	457	Clay and sand, poorly sorted silt to fine sand, clay green and black, sand grains subangular			7	249
Limestone shale	2	1,292				Clay, gray with subangular fine sand	60	517	Sand, poorly sorted to medium grain, subangular, little green clay; formation tight			18	267
Shale, blue	16	1,308				Clay, gray with trace of sand	20	537	Sand and clay, sand poorly sorted, subangular; clay green and black, formation tight, grass roots			10	277
Shale, blue, and limy shale beds	54	1,362				Clay, gray, sticky	39	576	Sand, brown, rounded to subangular, poorly sorted mostly coarse grains; little clay green, gray and black; formation loose			30	307
Shale, blue	4	1,366				Sand, fine, free	5	581	Sand, poorly sorted fine to coarse, subangular, little clay			14	321
Sand, hard	2	1,368				Clay, gray with trace of fine to coarse sand	55	636	Sand, brown, poorly sorted medium to subangular, round to subangular; some clay, green, gray and black; formation loose			31	352
Rock	1	1,369				Sand and gravel, subangular, trace of gray clay	6	642	Clay, gray with fine subangular sand; formation hard			10	362
"Quartz"	5	1,374				Sand and dark gray clay, fine to medium subangular sand	19	661	Clay, gray and green with fine grained sand, grass roots, few pebbles of white rock; formation soft; little mica	34	396		
Conglomerate(?), very hard	3	1,377				Sand, medium to coarse grained and gray clay, trace of gravel, tight formation	4	665	Clay, gray and green with fine grained round to subangular sand, grass roots; formation hard	7	403		
Conglomerate(?), extra hard	4	1,381				Clay, sandy gray	33	698	Clay, same as above with very little sand; formation is soft	37	440		
Conglomerate(?) extremely hard	1	1,382				Clay, dark blue	3	701	Sand, brown, poorly sorted fine to pea gravel, some clay green, gray and black. Lower 12 feet has more clay and more coarse sand; some basalt grains	45	485		
"Lime," blue, with thin shale streaks; very hard; gas showing	59	1,441				Clay, gray, soft	2	703	Clay, gray with poorly sorted sand, grass roots, some mica; formation soft	23	508		
Shale, soft, blue	5	1,446				Basalt gravel and volcanic dust well cemented	1	704	Clay, same as above with more sand, finer grained, little brown clay	34	542		
Shale, hard	4	1,450				Basalt gravel and cinders cemented with quartz sand or glass (volcanic tuff); very little country sand; marine shells, 7/10 to 7/14	13	717	Sand, gray, poorly sorted fine to coarse, subangular, little clay	14	321		
Shale, blue	7	1,457				Basalt sand and volcanic dust loosely cemented; small basalt grain size	2	719	Sand, brown, poorly sorted medium to coarse, round to subangular; some clay, green, gray and black; formation loose	31	352		
Shale, hard	3	1,460				Basalt cinder rock and volcanic sand well cemented	11	730	Clay, gray with fine subangular sand; formation hard	10	362		
Shale, blue	3	1,463				Basalt gravel and volcanic sand, loose	4	734	Clay, gray and green with fine grained round to subangular sand, grass roots; formation hard	7	403		
Sand	7	1,470				Basalt gravel and volcanic sand, cemented	3	737	Clay, gray and green with fine grained sand, grass roots, few pebbles of white rock; formation soft; little mica	34	396		
Shale, hard	4	1,474				Basalt gravel and volcanic sand, cemented and loose	9	751	Clay, gray and green with fine grained round to subangular sand, grass roots; formation hard	7	403		
Shale and sand, strong gas showing	8	1,482				Gray sand, fine to medium subangular grained, and gray clay; little basalt rock, cemented	25	776	Clay, same as above with very little sand; formation is soft	37	440		
Shale	4	1,486				18/29-5aaa (Kingman, D. S., 1959, fols. p. 15)			Sand, brown, poorly sorted fine to pea gravel, some clay green, gray and black. Lower 12 feet has more clay and more coarse sand; some basalt grains	45	485		
Shale and sand	18	1,504				Sand, gray, poorly sorted fine (50%) to pea gravel (2%), round to subangular, marine shells, some basalt chips	17	17	Clay, gray with poorly sorted sand, grass roots, some mica; formation soft	23	508		
Shale, gray	14	1,518				Sand, coarse, brown, fairly well sorted, rounded, 99% quartz	10	27	Clay, same as above with more sand, finer grained, little brown clay	34	542		
Rock	.5	1,518.5				Sand, fine, free, well sorted, gray 99% quartz	10	37	Sand, gray, poorly sorted fine to small gravel, few grains of basalt pebbles; some mica and gray clay	41	583		
Shale and "oil" sand	1.5	1,520				Basalt sand and volcanic dust loosely cemented; small basalt grain size	2	719	Cemented sand and gravel, rounded medium sorted sand; lot of porous basalt grains, dark color; formation hard; more basalt and less sand near bottom of formation	7	590		
Shale	28	1,548				Basalt cinder rock and volcanic sand well cemented	11	730	Cemented basalt gravel with sand and clay matrix	11	601		
Sand, hard	4	1,552				Basalt gravel and volcanic sand, loose	4	734	Cemented basalt gravel, very few porous cuttings; fine grained sand near top, harder formation in middle; some clay near bottom; very hard	8	609		
Sand and shale	13	1,565				Basalt gravel and volcanic sand, cemented	3	737	Basalt pea gravel, loose, reddish brown, little clay	2	611		
Sand, hard, and shale	22	1,587				Basalt gravel and volcanic sand, cemented	3	737					
Shale	31	1,618				Basalt gravel and volcanic sand, cemented, little gray clay	5	742					
Shale, very hard	8	1,626				Basalt gravel and sand with gray clay; streaks cemented and loose	9	751					
Sand and shale	36	1,662				Gray sand, fine to medium subangular grained, and gray clay; little basalt rock, cemented	25	776					
Rock	5	1,667				18/29-5aaa (Kingman, D. S., 1959, fols. p. 15)							
Shale	11	1,678				Sand, coarse, free, subangular, quartz and country sand	17	17					
Sand and shale	12	1,690				Clay, gray with rounded gravel	10	27					
Sand, hard	5	1,695				Clay, gray, some sand	18	45					
Shale	25	1,720				Sand, brown, fine to medium grained, rounded to subangular	3	48					
Sand	11	1,731	Clay, black and gray, little sand	14	62								
Sand, hard	2	1,733	Sand, medium to coarse, tight	8	70								
Sand and shale; crevice, lost circulation	21	1,754	Basalt gravel cemented with fine sand	2	72								
Shale	26	1,780	Sand, fine, tight	15	87								
Shale, hard, gas showing	1	1,781	Clay, gray, soft and sticky, grass roots	5	92								
Sand, shaly; crevice, lost circulation	13	1,794	Sand, fine grained with basalt grains, tight	10	102								
Shale	4	1,798	Sand, rounded to subangular, medium to coarse grained, free, quartz and country sand	40	142								
Shale, hard, sandy	1	1,799	Gravel, small, subangular; brown clay to sandy gravel and brown clay	20	162								
Shale, lost circulation	4	1,803	Clay, gray with some pea-sized gravel	25	187								
Shale, soft, blue	33	1,836	Clay, gray	10	197								
Shale, sticky, gooey	24	1,860	Clay, black and gray, sticky	37	234								
Sand, fine	5	1,865	Clay, gray, sandy	71	305								
Shale, gray	14	1,879	Sand, fine to medium grained, subangular; gray clay	7	312								
Sand, hard	2	1,881	Sandy gray clay with streaks of gray clay, trace of pea-sized gravel	68	380								
Shale, gray	35	1,916											
Sand, hard	5	1,921											
Shale	17	1,938											
Sand and shale	32	1,970											
Shale, hard	4	1,974											
Sand and shale	21	1,995											
Shale	35	2,030											
Sand, hard	5	2,035											
Shale	25	2,060											
Sand, hard	6	2,066											
Shale	20	2,086											
Shale, brown	14	2,090											
Sand, hard	6	2,096											
Sand and shale	24	2,120											
Sand, running	14	2,134											
Shale	19	2,153											
Sand, hard	7	2,160											
Shale	32	2,192											
Sand, hard, and shale	20	2,212											
Quicksand	16	2,228											
Sand and shale	30	2,258											
Lime, blue	2	2,260											
Shale, sticky, blue	12	2,272											
Sand and shale	22	2,294											
Shale, sticky, blue	44	2,338											
Sand, hard	3	2,341											
Lime, white	6.5	2,347.5											
Sand, hard	3.5	2,351											
Shale, sticky	43	2,394											
Clay, sticky	15	2,409											
Shale, nonsandy	10	2,419											
Shale, sticky	12	2,431											
Shale and sand	73	2,504											
Sand	40	2,544											
Shale, sticky	60	2,604											
Sand, fine	16	2,620											
Shale, hard	16	2,636											
Shale	48	2,684											
Sand, hard	14	2,698											
Sand, fine, gas showing	11	2,709											
Shale	26	2,735											

(continued)