Geology and Ground-Water Resources of the Paducah Area Kentucky

By H. L. PREE, JR., W. H. WALKER, *and* L. M. MACCARY

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By H. L. Pree, Jr., W. H. Walker, and L. M. MacCary

ABSTRACT

The present report describes the geology and ground-water resources of the Paducah area in the Jackson Purchase region of western Kentucky. The area, which lies between parallels of latitude 36°52'30" and 37°10'00" N. and meridians of longitude 88°30'00" and 88°45'00" W., includes parts of McCracken, Graves, and Livingston Counties. Paducah lies in the northern part of this area at the confluence of the Tennessee and Ohio Rivers.

The Paducah area includes alluvial flood plains, river terraces, and uplands which range in altitude from 300 to 500 feet above mean sea level. The natural resources of this humid area, where the original forest cover has been almost entirely removed, consist of a good soil cover, gravel, sand, clay, and abundant water supplies. Paducah, the largest city in this primarily agricultural area, had a population of 50,488 in 1954.

This area is in the northeastern part of the Mississippi embayment of the Gulf Coastal Plain, a trough of Paleozoic rocks filled with unconsolidated sand and clay of Cretaceous and Eocene age, gravel of Pliocene(?) age, loess of Pleistocene age, and alluvium of Pleistocene and Recent age. The Ripley formation, the Holly Springs sand, the gravel of Pliocene(?) age, and the alluvium are the principal water-bearing beds. The Ripley formation, which thickens to about 260 feet in the southwestern part of the Paducah area, consists of clays and fine silty sands. The Holly Springs sand, with a maximum thickness of about 150 feet, consists of lenticular bodies of sand and clay. The Pliocene(?) gravel, in places 50 feet thick, contains medium to coarse gravel and sand. The alluvium, as much as 100 feet thick, is composed of sand, gravel, and clay.

Enough water for domestic and stock use can generally be obtained from shallow wells anywhere in the Paducah area, and larger supplies can probably be obtained from deeper wells in the Holly Springs sand and the Ripley formation. The Ripley yields as much as 113 gpm (gallons per minute) to wells ranging in depth from 42 to 500 feet. Silt and clay make it difficult to develop wells in the upper part of this aquifer in most of the area. Water from the Holly Springs sand is pumped at rates as high as 48 gpm from wells ranging in depth from 7 to 125 feet. The gravel of Pliocene(?) age is the source of water for 52 percent of the wells in the Paducah area. Water from this aquifer is pumped at rates as high as 40 gpm from wells ranging in depth from 6 to 67 feet. Water from the alluvium is pumped at rates as high as 9 gpm from wells ranging in depth from 9 to 105 feet.

Static water levels in wells in the Paducah area depend upon both topography and geology. The piezometric surface in the Ripley formation is reported to range from 15 to 150 feet below land-surface datum. Water in the Holly Springs sand, generally under water-table conditions, occurs at depths of 5 to 80 feet

below land-surface datum. Static water levels in wells in the gravel of Pliocene(?) age, in which water generally occurs under water-table conditions, range from 5 to 60 feet below land-surface datum. Water in the alluvium occurs under both water-table and local artesian conditions, with static water levels ranging from 5 to 25 feet below land-surface datum.

The chemical quality of the water contained in the four aquifers underlying the Paducah area differs considerably. Water from the alluvium is generally hard to very hard. Water from most of the aquifers, however, is relatively soft and low in dissolved solids, the most objectionable characteristic being the relatively high iron content. Water from the Ripley formation, the Holly Springs sand, and the alluvium contains objectionable amounts of iron; water from the gravel of Pliocene(?) age generally contains only small amounts of iron.

INTRODUCTION

PURPOSE AND SCOPE OF INVESTIGATION

The growth of urban and rural areas like the Paducah, industrial expansion, and modernization of homes have increased the demand on water supplies. The quantity of water available usually is the most important factor, but the quality and temperature also are significant. At the present rate of withdrawal, the danger of seriously depleting the ground-water supply in the Jackson Purchase region of western Kentucky seems very slight, but there is a definite need for an adequate understanding of the quantity and quality of the available supply, where additional or better supplies can be obtained, and what measures may be necessary to safeguard their continuance.

Recognizing the need for more information on the ground-water resources of the State, the Agricultural and Industrial Development Board of Kentucky and the United States Geological Survey established a cooperative program of ground-water investigations. For convenience in making investigations, the State has been divided into the five regions shown in figure 1. These are the Jackson Purchase, the Western Coal Field, the Mississippian Plateau, the Blue Grass region, and the Eastern Coal Field.

The present report gives detailed information on the occurrence, quantity, and quality of ground water in the 155 square miles covered by the Paducah area in the Jackson Purchase region of western Kentucky. Field work was begun in 1950 by H. L. Pree, Jr., geologist, and W. H. Walker, engineer, under the supervision of E. H. Walker, geologist, Louisville, Ky. Geologists T. W. Lambert and L. M. MacCary, who were assigned to the project in December 1952 and July 1953, respectively, assisted in the completion of the geologic field work and in the preparation of illustrations. The information presented is for use in the future development of the ground-water resources of the area. The data on the water-bearing characteristics of the different geologic units can also be applied to other areas in the Jackson Purchase region where these same units occur.

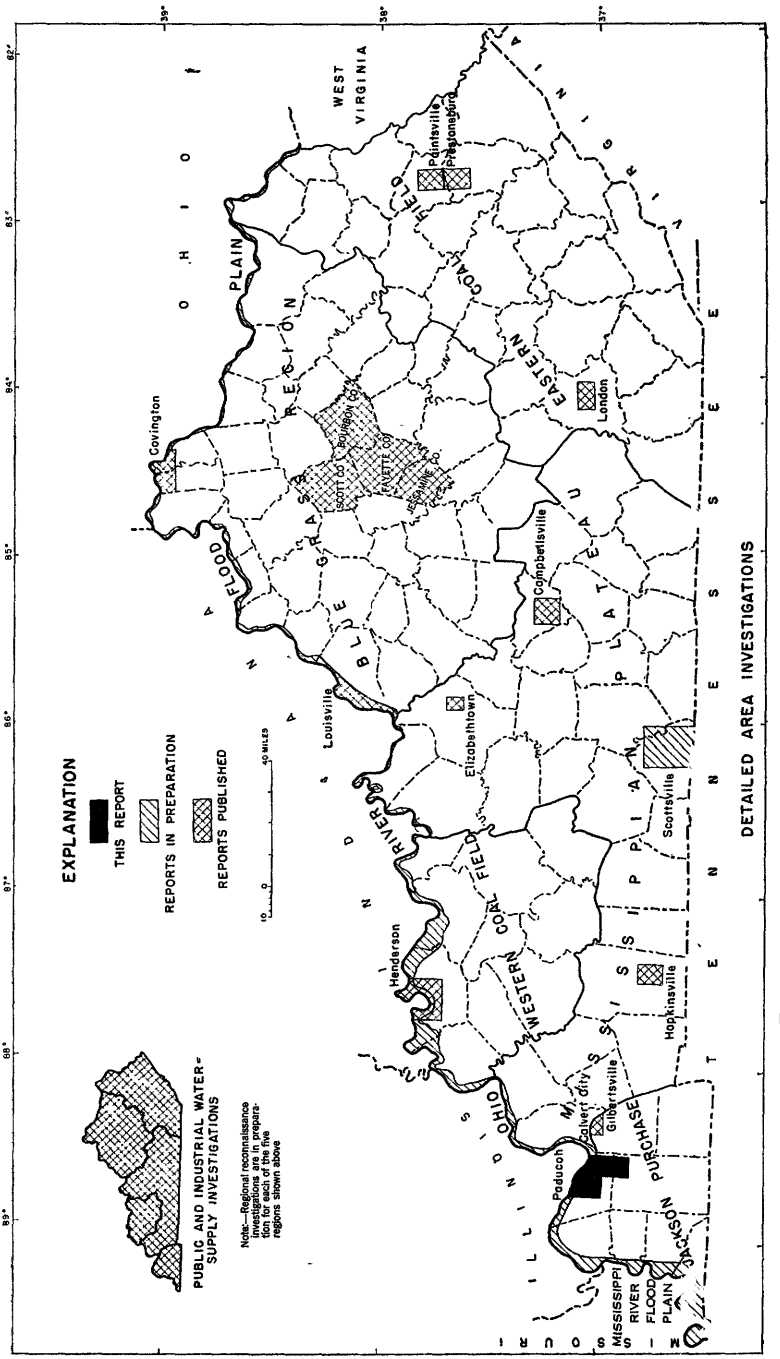

FIGURE 1.—Index map of Kentucky showing progress of ground-water investigations.

Figure 1 shows areas in Kentucky that are already covered by ground-water reports and areas where work is in progress.

Ground-water investigations by the U. S. Geological Survey are under the general direction of A. N. Sayre, chief, Ground Water Branch, U. S. Geological Survey, Washington, D. C. This report was begun under the direction of M. I. Rorabaugh, formerly district engineer. Work in Kentucky is now under the direction of G. E. Hendrickson, district geologist, Louisville. Field work was done under the supervision of E. H. Walker, geologist, Louisville, Ky., and the report was written under the supervision of Mr. Hendrickson. Determinations of permeability, porosity, moisture content, and particle-size distribution of rock samples were made under the direction of A. I. Johnson, chief, Hydrologic Laboratory, Denver, Colo. Chemical analyses of water samples were made under the direction of W. L. Lamar, district chemist, Quality of Water Branch, Columbus, Ohio.

LOCATION AND EXTENT OF AREA

The area covered by the present report is in the Jackson Purchase region of western Kentucky and lies between parallels 36°52′30″ and 37°10′00″ N. latitude and meridians 88°30′00″ and 88°45′00″ W. longitude (fig. 1). It includes the Kentucky part of the Paducah, Ky.-Ill., 15-minute quadrangle and the entire Symsonia, Ky., 7½-minute quadrangle. This 155-square-mile area includes about 120 square miles of McCracken County, 32 square miles of Graves County, and 3 square miles of Livingston County. Paducah, the county seat of McCracken County, lies in the northern part of this area, at the confluence of the Tennessee and Ohio Rivers.

PREVIOUS INVESTIGATIONS

This report presents the first detailed study of the ground-water resources of the Paducah area. However, brief references to the geology and ground-water resources of parts of this area have been made in several earlier reports on the entire Jackson Purchase and in earlier reports on small areas within the Purchase. R. H. Loughridge (1888) contributed one of the earliest reports on the geology of the entire area. The first report concerned primarily with the ground-water resources of this region, was a reconnaissance investigation by L. C. Glenn (1906) on the geology and ground-water resources of southern Illinois and of Tennessee and Kentucky west of the Tennessee River. A report by J. K. Roberts and Benjamin Gildersleeve (1950, p. 110–111) on the geology and mineral resources of the Jackson Purchase contains a brief statement on ground-water resources. A report on the industrial utility of public water supplies in the East South Central States by E. W. Lohr, G. A. Billingsley, J. W. Geurin,

and W. L. Lamar (1952) contains data on the public water supply at Paducah. A report on the public and industrial water supplies of the Jackson Purchase region by H. L. Pree, Jr., and W. H. Walker (1953) presents information on all public and industrial water-supply installations in the Jackson Purchase pumping more than 5,000 gpd (gallons per day) and gives general information on the occurrence of ground water in the area. A report by H. L. Pree, Jr., and W. H. Walker (1952) provides detailed geologic and hydrologic information on the Calvert City-Gilbertsville, area, a small area about 15 miles east of Paducah (fig. 1).

METHODS OF INVESTIGATION AND PRESENTATION OF DATA

From July 1950 to December 1953, 1,872 wells, springs, and test holes listed in tables 16 and 17 were inventoried. The location of these is shown on plates 1, 2, and 3. The depths of the wells and depths to water in them were measured. Records of fluctuations in 25 observation wells were obtained (pls. 1, 2, and 3). Water-level measurements with a steel tape were made in 17 of these wells, and continuous records of water-level fluctuations were made in 8 of them (table 18). Water-level measurements with a steel tape were made in 38 other observation wells for short or interrupted periods (table 19). Specific capacity tests on 13 wells provided information on drawdowns and pumping rates. Measurements of flow from 4 springs were made. Percolation tests provided information on the permeability of the sand underlying two housing developments about 2 miles southwest of Paducah. Sixty-two samples of water were collected for chemical analysis and 103 water temperatures were measured. A summary of the hydrologic data is presented on the map showing the availability of ground water (pl. 8).

The geology of the area was studied and geologic maps (pls. 4, 5, and 6), a block diagram (pl. 7), and a geologic cross section (fig. 5) were prepared. Information concerning the thickness and character of the geologic formations in the subsurface was obtained from logs of 112 water wells and test holes provided by well drillers and owners and from examination of sample cuttings from 7 wells.

WELL-NUMBERING SYSTEM

Wells, springs, and test holes inventoried by the U. S. Geological Survey in Kentucky are numbered according to a grid system of 5-minute meridians of longitude and 5-minute parallels of latitude (fig. 2). Numbers consist of three parts: the first part is the degrees and minutes of the meridian at the east side of the 5-minute quadrangle, the second part is the degrees and minutes of the parallel at the south side of the 5-minute quadrangle, and the third part is the

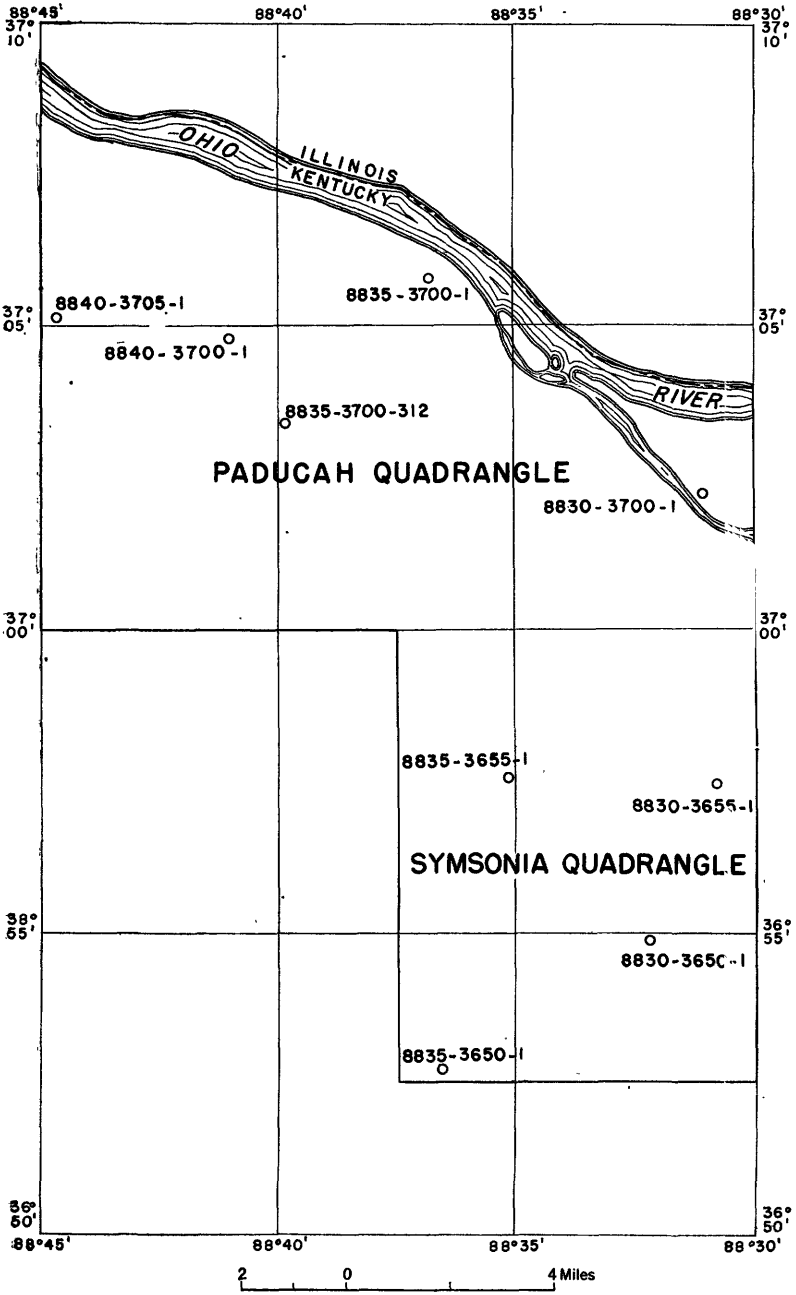

FIGURE 2.—Map showing well-numbering system in the Paducah area, Kentucky.

number assigned to each well, spring, or test hole in that quadrangle in the order in which it is inventoried. Thus, well 8835–3700–1 in the sketch (fig. 2) is the first well, spring, or test hole inventoried in the 5-minute quadrangle west of 88°35′ W. longitude and north of 37°00′ N. latitude. The next well, spring, or test hole inventoried in that 5-minute quadrangle would be designated 8835–3700–2, and all wells, springs, or test holes inventoried subsequently in that quadrangle would be numbered in the order in which they were inventoried.

ACKNOWLEDGMENTS

The authors express their appreciation for the courteous and generous assistance of all who contributed information and aided in the collection of field data for this report. Well owners and drillers in the area supplied most of the data concerning wells, springs, and test holes. The Kentucky Department of Highways, the Illinois Central Railroad, and the U. S. Corps of Engineers provided logs of test holes. Well drillers, including R. B. Elrod, Walter Bingham, Royster and McAlpin, Charles Yancy, Casey & Case Foundation Co., James E. Jennings, Ode Shelton, D. P. McNeely, Henry Harper, and W. H. Ellis, provided logs of wells and other subsurface information. The Kentucky Geological Survey, the Tennessee Valley Authority, and Dr. Paul E. Potter contributed much valuable geologic information.

GEOGRAPHY

NATURAL FEATURES OF THE REGION

TOPOGRAPHY AND DRAINAGE

The Paducah area includes alluvial flood plains, river terraces, and uplands. The narrow alluvial flood plain along the Ohio and Tennessee Rivers, at altitudes of 300 to 325 feet above mean sea level, has a maximum width of about half a mile in this area. Lying just south of the flood-plain belt is a river terrace 25 to 35 feet higher than the flood plain. This terrace, which extends up Clarks River and the East and West Forks of this river, ranges in width in this part of the area from 1 mile to almost 4 miles. At Paducah it is 2 miles wide and has an altitude of about 340 feet. Its surface is level except where streams have cut channels 15 to 30 feet deep across it. Southeast and southwest of the alluvial terraces, the low, rolling uplands are nearly flat in the interstream areas and considerably broken near the streams. The general upland slope is slightly northward. The highest altitude, in the southwestern corner of the Symsonia quadrangle, is about 500 feet. The average altitude of the uplands is about 400 feet.

All drainage from the Paducah area flows into the Ohio River which borders the area on the north. The Tennessee River flows

into the northeastern part of this area and empties into the Ohio River at Paducah. Clarks River, from the confluence of its East and West Forks, flows into the Tennessee River 4 miles southeast of Paducah. Massac and Perkins Creeks, the only other streams of appreciable size in this area, flow directly into the Ohio River. Clarks River is the only one of the smaller streams that has a significant flow during dry seasons.

CLIMATE

The climate of the Paducah area, like that of the rest of the Jackson Purchase region, is of the humid continental type. The average annual precipitation at Paducah for the period of record, 1892–1953 inclusive, is 45.98 inches (fig. 3). The heaviest rainfall usually occurs during the spring and winter; the lightest during the autumn. Table 1 shows monthly distribution of precipitation at Paducah for the 60-year period of record, 1894–1953.

TABLE 1.—*Summary of precipitation and temperature data recorded at or near Paducah, Ky., 1894–1953*

[From records of U. S. Weather Bureau]

Precipitation data:		
Length of record	years	72
Average annual precipitation	inches	45.98
Minimum annual precipitation	inches	27.69
Year of minimum precipitation		1887
Maximum annual precipitation	inches	72.35
Year of maximum precipitation		1927
Temperature data:		
Length of record	years	54
Average growing season	days	199
Average date of last killing frost in spring		Apr. 6
Average date of first killing frost in fall		Oct. 22
Earliest date of last killing frost in spring		Feb. 28, 1908
Latest date of last killing frost in spring		May 7, 1944
Earliest date of first killing frost in fall		Sept. 30, 1949
Latest date of first killing frost in fall		Nov. 12, 1908
Mean annual temperature		59°F
Average January temperature		37°F
Average July temperature		80°F

Winters are moderately cold and summers are hot according to United States Weather Bureau data that are summarized in table 2. Temperatures during the winter months rarely fall below 0°F and during the summer months rarely exceed 100°F. The mean annual temperature is 59°F. The frost-free period (table 1) is from early April until late October.

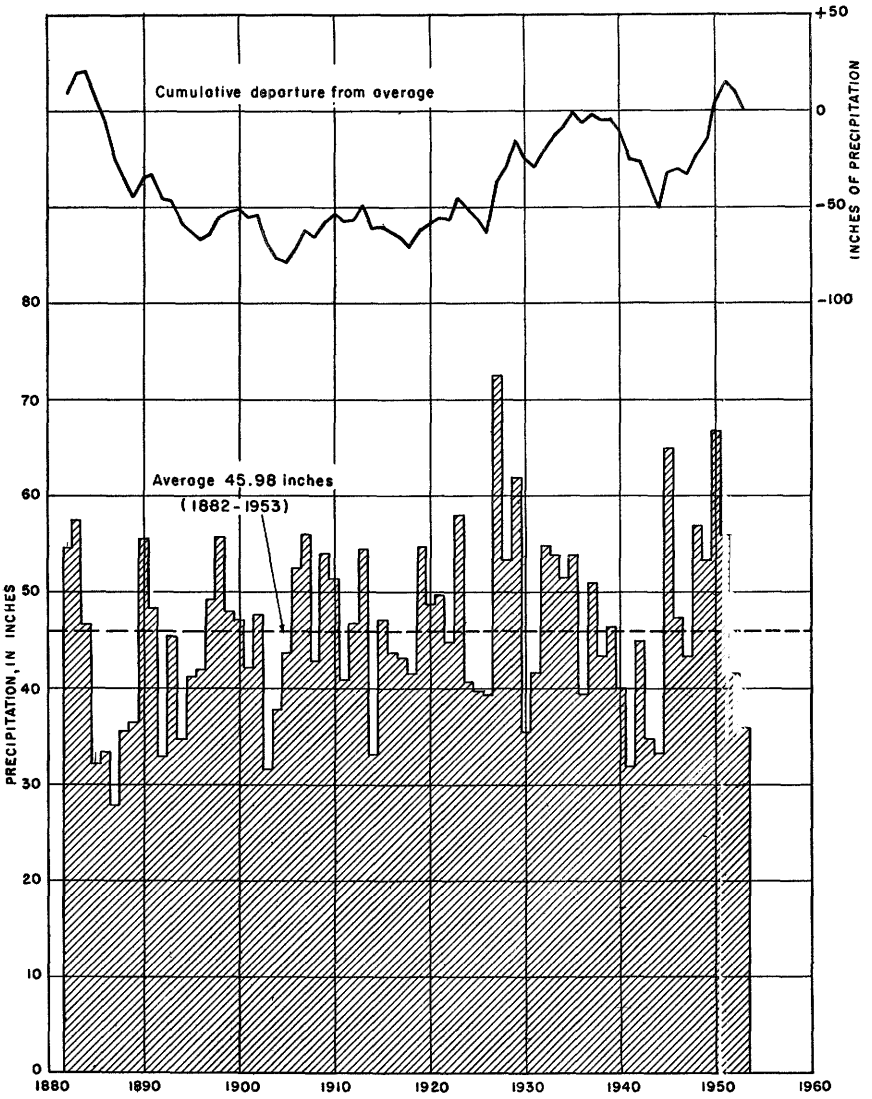

FIGURE 3.—Annual precipitation and cumulative departure from average precipitation at or near Paducah, Ky. (1882–1953). From records of the U. S. Weather Bureau.

TABLE 2.—*Monthly distribution of precipitation and temperature at or near Paducah, Ky.*

[From records of U. S. Weather Bureau]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Precipitation, in inches												
Maximum	17. 53	10. 18	13. 79	13. 25	11. 05	19. 22	11. 94	8. 16	9. 35	10. 81	9. 88	9. 53
Year	1937	1909	1935	1927	1927	1928	1910	1926	1934	1925	1921	1902
Minimum	0. 47	0. 28	0. 70	0. 76	0. 63	0. 28	Trace	0. 37	0. 00	0. 18	0. 20	0. 92
Year	1943	1895	1941	1915	1932	1946	1914	1925	1897	1924	1904	1925
Average	5. 00	3. 44	5. 00	4. 22	4. 13	3. 82	3. 50	3. 43	3. 25	2. 96	3. 79	3. 87
Median	4. 35	2. 93	4. 72	4. 03	3. 34	3. 31	3. 26	3. 01	2. 65	2. 67	3. 03	3. 58
Temperature, in degrees Fahrenheit												
Maximum	79	81	90	94	98	105	112	112	106	98	86	78
Year	1952	1918	1929	1895	1902	1952	1901	1930	1925	1917	1946 1950	1893
Minimum	−20	−12	6	24	30	43	47	45	30	23	1	−10
Year	1918	1899 1951	1899 1943	1914	1931	1917	1947	1927	1895	1925	1950	1917
Average	37	40	49	59	68	77	80	80	73	61	48	39

VEGETATION

Vegetation in both the bottom-land and upland sections of this area has changed since the days of the first settlement (Lewis, 1923, p. 54–59). When white men first came into the country the grass-covered prairies were more extensive and the forested areas were more restricted than at a later date. The hills and bottoms were forested but in the more level interstream areas the trees had been burned off by Indians in order to increase the area of grass-covered prairie. After the Indians left, fires were no longer set intentionally and there was an increase in the area covered by forests. The early forests in the lowlands consisted mainly of white oak, various water oaks, gum, and tulip trees. The early forests in the uplands contained dominantly oak, hickory, and other hardwoods. This early forest cover was almost entirely removed by timbering during the late 19th and 20th centuries, but second-growth woodland now occupies about 20 percent of the area.

NATURAL RESOURCES

The natural resources of the Paducah area, in addition to a fertile soil and abundant water supplies, consist of gravel, sand, and clay. The extensive gravel and sand deposits of Pliocene(?) age which blanket most of this area furnish gravel for road construction. Large quantities of sand pumped from the Ohio River are used for molding and building purposes. Clay deposits have not been developed, but one small pit in the clay of the Holly Springs sand has been opened up 11 miles south of Paducah. Up to the present (1953) tests for oil and gas in this area have been unsuccessful. A small amount of oak and gum wood is cut for crossties and rough building lumber. At present there are no sawmills operating in the area included in this report.

DEVELOPMENT

POPULATION

Paducah stands on the site where George Rogers Clark stopped to regroup his forces during his campaign against the British in Illinois. Later, in 1827, the town was laid out on part of the land granted to Clark as a reward for his exploits. The name of the original settlement, Pekin, was changed to Paducah in honor of Chief Paduke, chief of the Chickasaw Indians from whom the Jackson Purchase region was purchased (Neuman, 1927, p. 25).

The growth of Paducah, first incorporated in 1830, and the nearby rural areas is shown in table 3.

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TABLE 3.—*Population data, Paducah and McCracken County, 1830–1954*

[Information obtained from Paducah Association of Commerce]

Paducah		McCracken County	
Year	Population	Year	Population
1830	105	1830	1, 297
1840	(1)	1840	4, 745
1850	2, 428	1850	6, 067
1860	4, 590	1860	10, 360
1870	6, 866	1870	13, 988
1880	8, 036	1880	16, 262
1890	12, 797	1890	21, 051
1900	19, 446	1900	28, 285
1910	22, 760	1910	35, 064
1920	24, 735	1920	37, 246
1930	33, 541	1930	46, 271
1940	33, 765	1940	48, 534
1950	32, 828	1950	49, 137
1952	51, 783	1952	81, 898
1953	60, 000	1953	90, 000
1954	50, 488	1954	69, 750

[1] Not returned separately.

The large increase in population from 1950 to 1953 is the result of the location and construction of the United States Atomic Energy Commission plant and other large industrial plants in the Jackson Purchase region. The population decreased after 1953 upon the completion of the atomic plant.

INDUSTRIES

Most of the business and industrial activities in the Paducah area are located within the city limits of Paducah, and many are related directly to agriculture. These include the sale and processing of tobacco and the processing of meat, dairy products, fruits, and grains. Other products are locomotive parts, shoes, nylon stockings, work clothes, radio parts, radiators, boats and barges, batteries, boxes, and pottery. Transportation by both river and railroad also is an important source of employment. Many small businesses resulting from recreational activities on Kentucky Lake, 18 miles east of Paducah, have been started since the completion of Kentucky Dam.

Paducah and the nearby rural areas also are affected by industrial development near Kentucky Dam, which began in 1948, and by construction of the U. S. Atomic Energy Commission plant located on the Ohio River 12 miles northwest of Paducah. Factors influencing this development include cheap power from Kentucky Dam, proximity of limestone, coal, oil, and gas in adjacent regions, the availability of good water supplies, cheap river transportation for both raw materials

and finished products, an adequate labor market, and a fairly equable climate.

The Illinois Central Railroad crosses the Paducah area, connecting Paducah with Louisville to the northeast and with Fulton and other cities to the southwest. The Nashville, Chattanooga & St. Louis Railway also crosses this area, connecting Paducah with Murray and Hazel to the southeast.

RURAL LAND USE

Agriculture is still important to the economy of the Paducah area. The industrial expansion and its accompanying large increase in population are creating a greater demand for farm products, especially truck crops. Corn, wheat, hay, and tobacco are the chief field crops. Fruits, such as apples, peaches, pears, and strawberries are a lesser source of farm income. Dairy farming and the raising of dairy and beef cattle are becoming more important.

The agricultural economy has been affected within the past few years by labor shortages and summer droughts. As a result, the strawberry crop, once a large source of income in this area, has dwindled to almost nothing. Farms are becoming more highly mechanized in order to utilize available labor to best advantage, and interest in the feasibility of irrigating crops during dry periods is increasing.

GEOLOGY

Paducah is in the northeastern part of the Mississippi embayment of the Gulf Coastal Plain (fig. 4). Unconsolidated sand, clay, and gravel deposits within this area fill a bedrock trough that deepens to the south at about 20 to 30 feet per mile.

The geologic maps (pls. 4, 5, and 6) show the areal geology of the Paducah area, and the block diagram (pl. 7) and cross sections (fig. 5 and pl. 9) show the general geologic structure.

Plate 4 is both a structure map on the base of the Ripley formation and a contour map on bedrock. The zero or sea-level line runs through Paducah. This plate is useful for estimating the depth to bedrock in the area covered by the report by algebraically subtracting the bedrock elevation from the land-surface elevation.

Plate 5 shows the geologic formations in the Paducah area with the Pliocene(?) and younger rocks removed.

The rocks of Pliocene(?) to Recent age are shown on plate 6. An inspection of plate 6 shows that the Pliocene(?) and younger deposits mantle nearly all the outcrop of the older geologic formations. In order to show any of the Eocene and older rocks, it is necessary to place the geologic formations on two maps.

Plate 7 is a diagrammatic sketch of the Paducah area showing geologic relationships in three-dimensional cross sections. It includes

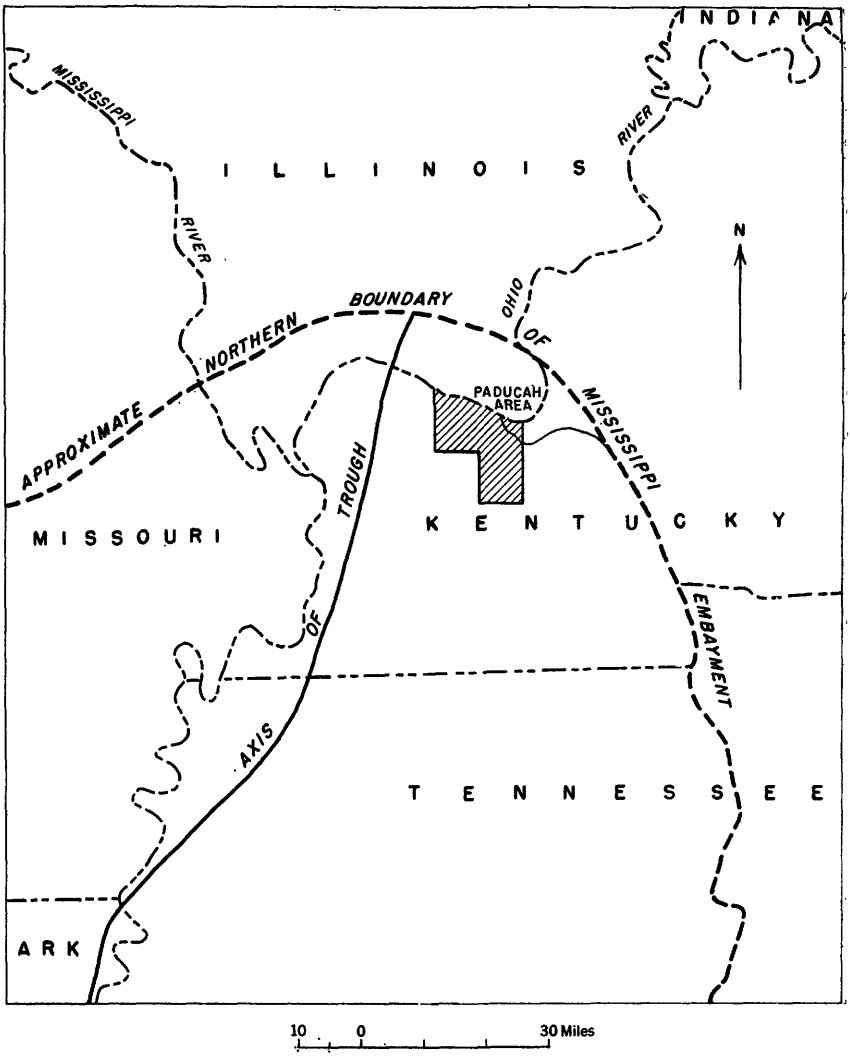


FIGURE 4.—Map showing position of the Paducah area, Kentucky, within the northern part of the Mississippi embayment of the Gulf Coastal Plain.

all the formations discussed in the report and is useful for coordinating the geologic maps and cross sections.

SUMMARY OF STRATIGRAPHY

The Paleozoic bedrock beneath most of the Paducah quadrangle is of Mississippian age; that beneath the Symsonia quadrangle is of Silurian and Devonian age (Roberts and Gildersleeve, 1950). The oldest formation that crops out in the Paducah area, however, is the Ripley formation of Late Cretaceous age which rests unconformably

on the bedrock floor. The Porters Creek clay of Paleocene age, the only Tertiary formation in this area which is of marine origin, unconformably overlies the Ripley formation. The Holly Springs sand of Eocene age lies above the Porters Creek clay. Deposits of gravel and sand of Pliocene(?) age lie on the eroded surface of the Holly Springs sand. Loess of Pleistocene age overlies the older deposits

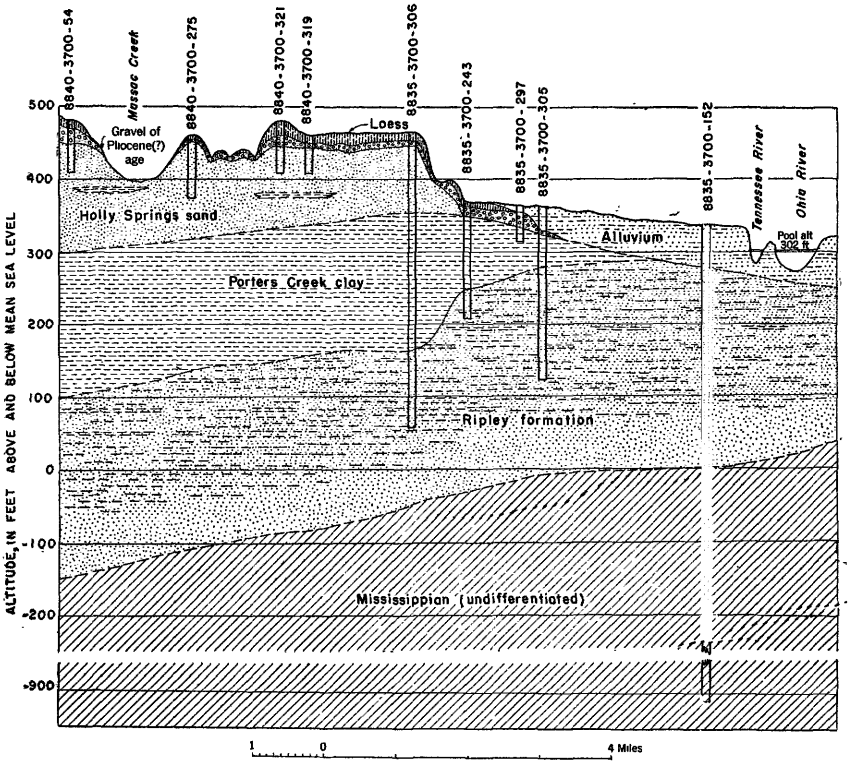


FIGURE 5.—Generalized cross section southwest to northeast across the Paducah area from southeast of Massac to the Ohio River at Paducah, Ky.

and caps most of the upland areas. Alluvial deposits of Pleistocene and Recent age occur in the river valleys.

GEOLOGIC HISTORY

The following geologic history, from Late Cretaceous time to the Recent epoch, is based largely on the published works of Wells (1933) and Roberts and Gildersleeve (1950) and the unpublished work of Potter.[1]

The earliest epoch of geologic time recorded in the rocks exposed in the Paducah area is the Late Cretaceous. During this epoch the

[1] Potter, P. E., 1952, The petrology and origin of the Lafayette gravel. [Unpublished Doctor of Philosophy thesis in files of Univ. Chicago Library.]

area was at or near the edge of a shallow sea. The sands (Ripley formation) that were deposited in this shallow sea were swept from place to place by wave action, as shown by crossbedding. The embayment was elevated above sea level and exposed to erosion at the end of the Cretaceous period.

The sea again inundated the embayment at the beginning of Paleocene time. Dark-gray to black clay (Porters Creek) with scattered thin beds of fine sand were deposited in this shallow sea which extended as far north as southern Illinois. A record of the marine fauna which lived during Paleocene time is preserved in the fossil foraminifers, gastropods, pelecypods, fish scales, and shark teeth found in places in these deposits. The sea receded at the end of this epoch, and the land surface again was exposed to erosion. The basal clay conglomerates of the Holly Springs sand are evidence of this period of erosion.

The sea returned at the beginning of Eocene time, but it neither reached as far up the embayment nor attained as great a depth as it had in the Paleocene. Sand and clay carried by streams was laid down in irregular, crossbedded deposits (Holly Springs sand) in shallow water. Streams of low gradient deposited clay and fine silt into the quiet waters protected by barrier beaches built along parts of the shore. Leaves from the forests along the shore fell into the water and were buried with the clay and fine silt. The clay and silt lenses were covered with sand as a result of subsequent slight sinking. Rapid variations in currents resulted in the lateral and vertical gradations in grain size in these deposits. These conditions continued until the end of Eocene time, when the land again emerged from the sea as an area of low relief.

The surrounding uplands, including the Ozark and Nashville domes, were uplifted during late Tertiary [Pliocene(?)] time. This uplift accelerated erosion of these areas of deeply weathered chert-rich Paleozoic rocks. Gravel and sand were deposited in the embayment as channel deposits by a series of high-velocity, migrating, braided streams originating in these uplands.[2] These deposits, transported by the ancestral Tennessee, Ohio-Cumberland, and Mississippi Rivers, completely covered the embayment. Subsequent erosion reduced them to their present thickness and extent.

In Pleistocene time, continental ice sheets advanced and retreated to the north of the embayment. Silt, sand, and gravel carried by streams of glacial melt water were deposited in the valley now occupied by the Ohio River. Fine silty material deposited in adjacent areas was carried to the Paducah area by the wind, deposited as loess on an irregular erosion surface, and later partly eroded.

[2] Potter, P. E., op. cit., p. 121.

The Ohio River was formed during early Pleistocene time by the damming of northward-flowing streams by glaciers moving southward from Canada (Weller, 1940, p. 47). Lakes formed in the valleys of the streams coalesced to form the Ohio River. The river, which until late in the Pleistocene epoch had flowed across southern Illinois 5 to 15 miles farther north than at present, changed its course to a lower channel and joined the Tennessee River at Paducah. Since the deposition of the alluvium and loess, the Ohio River has cut down through these deposits and the present flood plain is 25 to 35 feet lower than the "second bottoms."

WATER RESOURCES

The bountiful supply of water in the Jackson Purchase region of western Kentucky has played an important role in the development of the region and the cities within its boundaries. Underlying Paducah and the area around it are extensive underground reservoirs that contain large quantities of water of good quality.

This section of the report deals primarily with these ground-water resources and describes the occurrence and movement of the water beneath the land surface, its recharge and discharge areas, water temperature and quality, the extent of development, and other pertinent information that will be helpful in the initial planning of water supplies and the future development and use of the water resources of the area.

HYDROLOGIC CYCLE

The precipitation that falls upon the land may be dissipated by direct runoff to streams or by infiltration into the ground. Water that seeps into the ground moves downward through partly saturated soil where a large percentage of it may be retained. This retained water, or soil moisture, is later evaporated or transpired by plants to the atmosphere. The water remaining after the soil moisture demand has been satisfied moves downward to the zone where all the voids of the rocks are saturated. The upper surface of this zone of saturation is the water table except where it is formed by an impermeable body; the water contained in it is ground water. The water table slopes from areas of recharge to areas of discharge. Figure 6 is a generalized diagram showing the probable movement of water in the Paducah area. Some of the precipitation falling upon the land surface eventually gets down to the zone of saturation in the Holly Springs sand. The water in this aquifer may be under either water-table or artesian conditions depending on the position of clay beds. In the area covered by the present report, the Porters Creek clay is jointed and cut by sandstone dikes. It is likely that some water in the overlying Holly Springs sand leaks downward through these

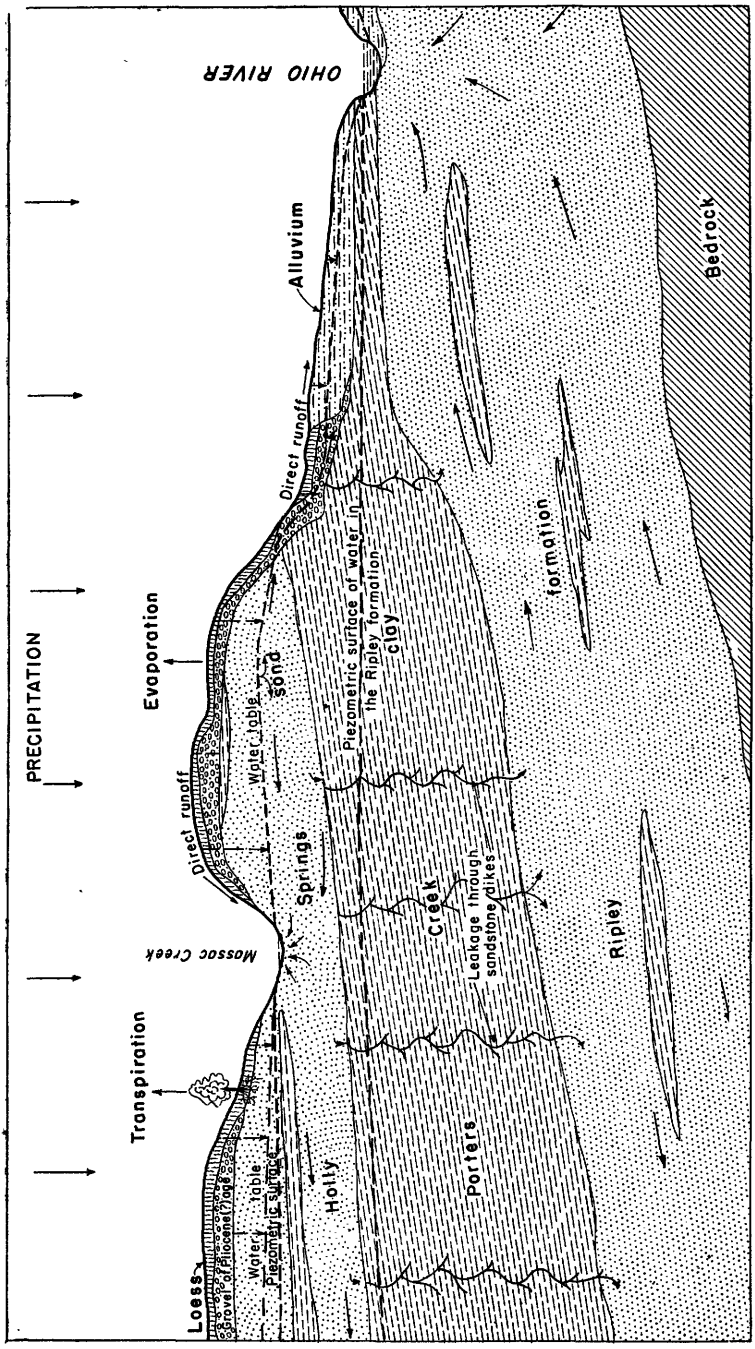


FIGURE 6.—Hydrologic cycle for the Paducah area, Kentucky.

joints and thus increases the head in the Ripley formation near Massac Creek. A ground-water divide occurs along this line of maximum head and therefore to the northeast the piezometric surface slopes down to the Tennessee and Ohio Rivers. Southwest of this line the piezometric surface slopes in the opposite direction.

It can be seen from figure 6 that the occurrence and movement of ground water in the area is controlled to a large extent by alternating layers of permeable and impermeable materials. The unconsolidated formations of permeable gravel and sand interbedded with less permeable clay layers normally dip to the southwest at approximately 20 to 30 feet per mile. Water from precipitation seeps downward into the permeable strata in their area of outcrop and may become confined downdip beneath impermeable beds. Pressure is exerted on the ground water in a confined aquifer by the weight of water at higher levels in the same aquifer. When a well penetrates such an aquifer downdip from the intake area, the pressure forces the water to rise in the well above the bottom of the overlying confining bed. The water in this instance is confined, or artesian water; a well penetrating the aquifer in which the water is confined is an artesian well. The water surface in an artesian well is on the piezometric surface, which is defined as the surface to which the water from a given aquifer will rise in tightly cased wells under its full head.

A clay layer above the general zone of saturation may intercept part of the water moving downward so that a body of water becomes perched above the clay. A clay layer within the zone of saturation may act as a partial or complete barrier to the vertical movement of water so that two or more water surfaces may exist within the zone of saturation.

A few isolated pockets of perched water are tapped by shallow domestic wells in parts of the Paducah area, but no large continuous yields are obtained from them. The Porters Creek clay that lies within the zone of saturation between the Holly Springs sand and the Ripley formation retards the percolation of water between the two aquifers so that the aquifer overlying the clay has a greater pressure head than the underlying body of ground water.

SURFACE WATER

The small streams that drain the higher land in the Paducah area are unreliable as sources of water, because in most years the flows become very low or the streams cease to flow altogether during dry periods. The major streams, the Tennessee and Ohio Rivers that flow along the eastern and northern edges of the area, and that part of Clarks River that lies within the Ohio River pool, afford an adequate source of surface water for development of large water supplies.

The development of these sources thus far has been limited to a hydroelectric station at Kentucky Dam, chemical plants at Calvert City, the public water supply at Paducah, and two steam-electric generating stations west of Paducah. Of these developments, only the Paducah waterworks lies within the area of this report. Although the use of surface water in this area has been somewhat limited in the past, the present rapid industrial expansion is expected to increase the use of both ground and surface water in the next few years.

Information on streams in this region is available from several sources. Discharge and gage-height data for all major streams are published yearly in water-supply papers of the U. S. Geological Survey. Data on water temperatures and chemical quality of river water are on file in the office of the U. S. Geological Survey, Quality of Water Branch, Columbus, Ohio, and the Surface Water Branch, Louisville, Ky. Other agencies that collect and compile surface-water data are the Tennessee Valley Authority, Knoxville, Tenn.; the Illinois Geological Survey, Champaign, Ill.; the U. S. Corps of Engineers, Memphis, Tenn.; and the Mississippi River Commission, Vicksburg, Miss.

GROUND WATER

PRINCIPLES OF OCCURRENCE

The following discussion on the occurrence and movement of ground water has been adapted in part from a more complete discussion of the subject by O. E. Meinzer (1923a).

Most of the rocks that are found beneath the land surface are not solid but contain numerous openings or voids, and below a certain level these voids are saturated with water. These saturated rocks are therefore said to be in the zone of saturation and the water is ground water. The quantity of water that a material will yield to wells is controlled principally by the number, size, and shape of the openings, and the degree to which they are interconnected. In the Paducah area wells penetrate uncemented deposits of clay, silt, sand, and gravel and obtain water from the more permeable layers of gravel or sand at depths ranging from only a few feet to nearly 500 feet below the land surface. The ability of these unconsolidated rocks to store and transmit water depends upon their porosity and permeability.

The porosity of a rock or soil is its property of containing voids (Meinzer, 1923b, p. 19), it is quantitatively defined as the percentage of its volume that is made up of openings. The porosity of the unconsolidated rocks that underlie the Paducah area is controlled primarily by the shape and arrangement of the rock grains and their degree of assortment. A material made up of uniform-sized grains that are separated by voids has a high porosity, but one consisting of poorly sorted grains has part of the void spaces filled with the

smaller particles and consequently has a lower porosity. The porosity of natural earth materials ranges from near zero to more than 50 percent. The specific yield is the ratio of the volume of water yielded under gravity to the total volume of a given rock. Specific yield is related to the effective porosity, which is defined as that portion of pore space in rocks in which movement of water takes place.

The permeability of a material is its capacity for transmitting water under pressure. A permeability determination is expressed as the coefficient of permeability. The quantitative expression of this term in Meinzer units (Stearns, 1928) is the rate of flow, in gallons a day through a square foot of its cross section, under a hydraulic gradient of 100 percent, at a temperature of 60°F. This definition is satisfactory for laboratory use, but for field use the field coefficient of permeability is used. It is defined as the flow in gallons per day per foot of thickness for an aquifer 1 mile wide under a gradient of 1 foot per mile under prevailing conditions. The permeability of a granular material is controlled by the size, shape, and character of the openings between the grains. A gravel or sand deposit that contains relatively large interconnected openings has a high permeability whereas a clay stratum, with small openings between the grains, has a much lower permeability. According to Wenzel (1942, p. 11) coefficients of permeability ranging from about 0.0002 for a clayey silt to 90,000 for a gravel have been determined in the hydrologic laboratory of the U. S. Geological Survey.

Laboratory analyses of nine samples of material taken near Paducah are given in tables 4 and 5. Sieve-analysis curves of these samples are shown in figure 7. The graphs shown in figure 7 are called cumulative curves; they are obtained by adding successively the percentages by weight in decreasing grain size and drawing a smooth curve through the points. The bulk of the grains in a well-sorted sediment fall within a small range in size and therefore the cumulative curve is

TABLE 4.—*Hydrologic characteristics of materials from the Jackson Purchase region, Kentucky*

Sample no.	Depth (feet)	Formation	Orientation of sample	Moisture content (percent)	Unit weight (grams per cubic centimeter)	Porosity (percent)	Coefficient of permeability (gpd per sq. ft. Meinzer units)
1	12	Loess	Vertical	18.7	1.50	44.4	2
2	10	Holly Springs sand.	do	7.0	1.72	35.6	164
3	10	do	Horizontal	7.8	1.62	39.8	54
4	35	do	Vertical	4.7	1.39	47.7	575
5	35	do	Horizontal	5.5	1.40	47.8	561
6	20	Ripley formation	Vertical	4.7	1.51	43.4	318
7	20	do	Horizontal	3.0	1.45	45.7	782
8	Surface	do	Vertical	3.6	1.53	42.5	380
9	do	do	Horizontal	3.7	1.43	46.4	600

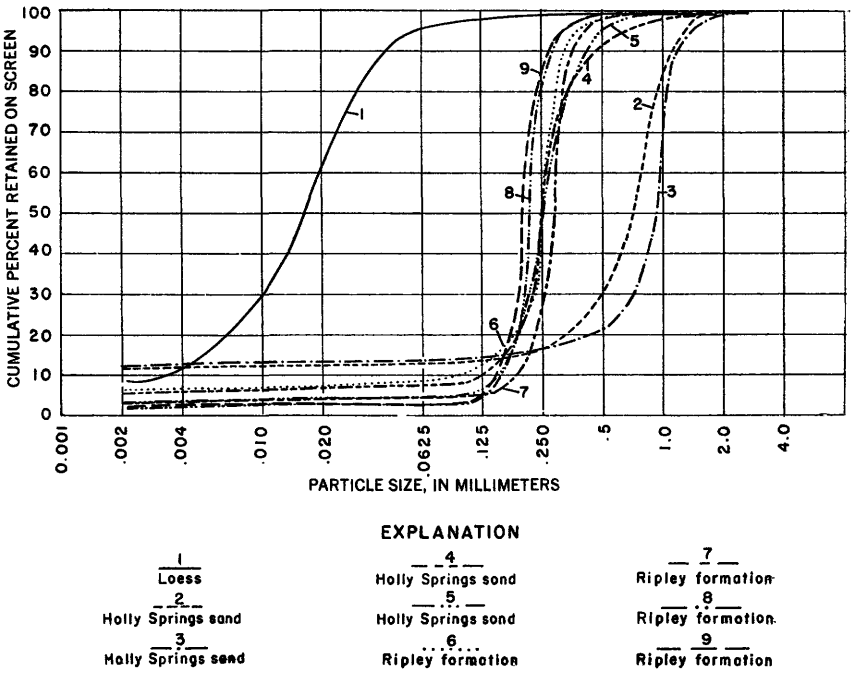


FIGURE 7.—Particle-size distribution of samples of geologic materials from the Jackson Purchase region, Kentucky.

nearly vertical in this range. For example, sample 9 is very well sorted and sample 1 is poorly sorted. Usually the well-sorted sediments have higher permeabilities than poorly sorted material. Although most of the samples were taken outside the area covered in the present report, the materials sampled are considered to be representative of those found in the Paducah area.

TABLE 5.—*Physical characteristics of materials from the Jackson Purchase region, Kentucky*

[All figures given in percent]

Location no.	Formation	Orientation of sample	Particle size (millimeter)									
			Clay less than 0.004	Silt 0.004–0.0625	Sand					Gravel	
					Very fine 0.0625–0.125	Fine 0.125–0.250	Medium 0.250–0.5	Coarse 0.5–1.0	Very coarse 1.0–2.0	Very fine 2.0–4.0	Fine 4.0–8.0
1	Loess	Vertical	12.0	83.5	2.1	1.0	1.2	0.2			
2	Holly Springs sand	do	11.8	.9	1.0	2.7	12.5	52.8	18.3		
3	do	Horizontal	12.7	.5	1.0	2.0	5.0	40.1	38.3	0.4	
4	do	Vertical	5.6	1.6	2.0	36.6	46.0	5.9	1.8	.2	0.3
5	do	Horizontal	4.2	.8	1.5	37.9	51.3	3.6	.7		
6	Ripley formation	Vertical	6.4	2.1	3.8	27.4	58.9	1.3	.1		
7	do	Horizontal	4.0	1.0	.2	20.5	72.7	1.5	.1		
8	do	Vertical	2.0	.9	1.6	76.8	17.8	.8	.1		
9	do	Horizontal	2.3	.1	2.8	78.0	15.9	.9			

SHAPE AND SLOPE OF THE WATER TABLE

The water table is not a plane surface but is generally a warped surface that slopes from areas of recharge to areas of discharge. Local warping of the water table may be caused by irregularity of the land surface as it effects recharge or discharge to the aquifer, by unequal additions or withdrawals of ground water, or by differences in the permeability of the water-bearing material. In the alluvial deposits the water table slopes generally toward the stream, but in the aquifers in the gravel of Pliocene(?) age and Holly Springs sand the slope is controlled largely by the dip of the underlying confining bed and is generally southwestward. In the Paducah area the piezometric surface of the Ripley formation slopes toward the Tennessee River. To the south of the area, the slope is to the southwest.

The piezometric surface of the confined water contained in the Ripley formation generally lies 50 feet or more below the water table of the upper aquifers. Figure 8 shows the water-level fluctuations of two wells in the Ripley formation and river levels of the Tennessee River during the same period of time. The water levels, plotted to mean sea level, suggest that the hydraulic gradient is toward the river and that the ground water discharges in to the river. Thus, the difference in pressure between the upper and lower aquifers appears to be great enough to force water through the Porters Creek clay into the Ripley formation and up the dip of the Ripley formation to the Ohio and Tennessee Rivers.

RATE OF MOVEMENT

The rate of movement of ground water under natural conditions depends upon the slope of the water surface, the permeability of the aquifer, and the temperature of the water.

No determinations of water velocities through clays, sands, and gravels found in the Paducah area are included in the present report, but the range would probably be from a few feet to a few hundred feet per year.

WATER-LEVEL FLUCTUATIONS

The water level in a well does not remain stationary but fluctuates vertically like the water level of a surface reservoir. A program of long-term periodic measurements of water levels is useful in determining the source and change in storage of ground water in an area, the direction of ground-water flow, and the recharge and discharge areas of an aquifer. Short-term fluctuations similar to those shown in figure 11 are oftentimes of major importance in quantitative studies of an aquifer. Water-level fluctuations may result from pumping from wells, atmospheric-pressure changes, changes in the rate of evaporation from the aquifer or the transpiration of plants

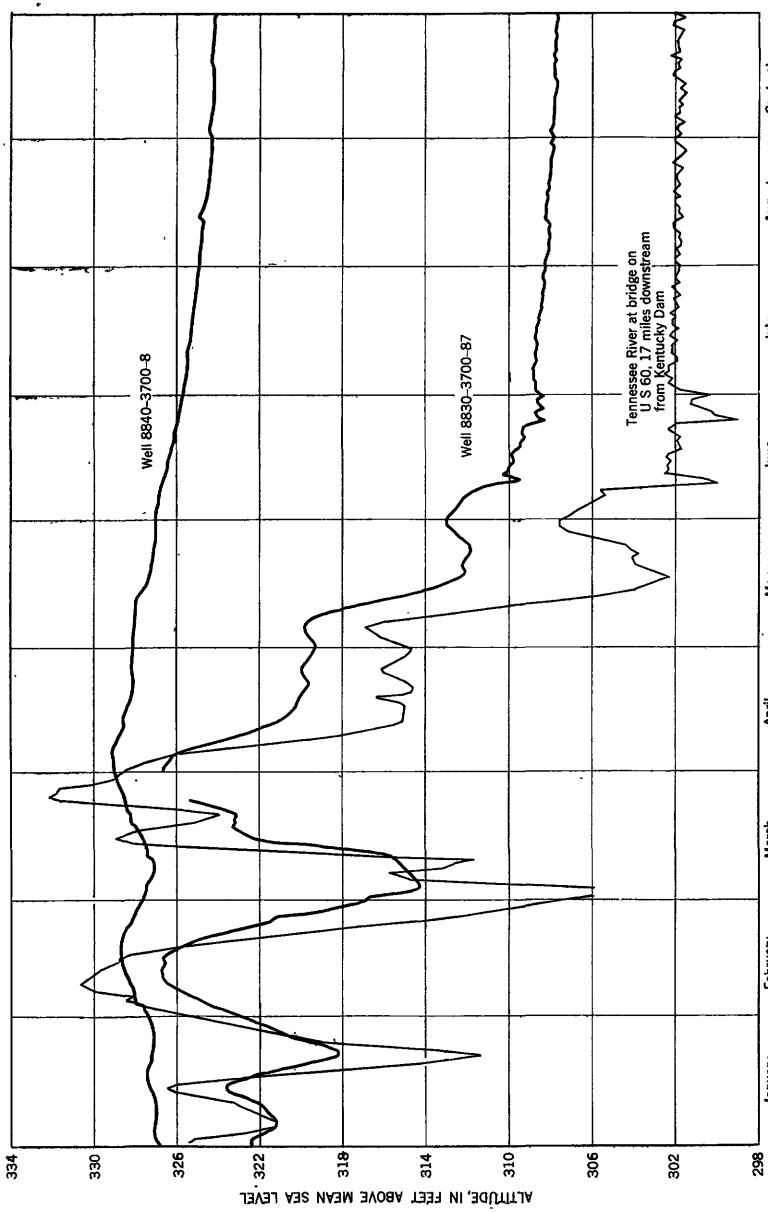


FIGURE 8.—Water-level fluctuations in two wells in the Ripley formation and stage of the Tennessee River in the Paducah area, Kentucky, 1952.

whose roots tap the aquifer, seasonal variations in the rate of natural recharge or discharge, and various other causes. Cyclic fluctuations due to one or more of these causes may range in length from part of a day to several years.

In order to determine the character and magnitude of the water-level fluctuations in this area, 14 wells were measured at regular intervals in the period from 1950 through 1953. These measurements are shown graphically in figures 9 and 10. A hydrograph of the Tennessee River and graphs indicating the precipitation at Paducah are presented with the water-level fluctuations so that the data may be more easily correlated.

The hydrograph of well 8830–3650–55 (fig. 9) shows the effect of evapotranspiration losses during the growing season and the fairly rapid buildup of the water table during the winter recharge period. Hydrographs of wells 8835–3650–6 and 8835–3655–121 (fig. 10) show that the water table near these wells is not directly affected by evapotranspiration and that the water-table trend over the area was upward from 1950 until July of 1953 due to above-average precipitation during those years. A rise in the river stage (fig. 9) causes a partial damming of the normal ground-water flow into the river and a fall in stage increases the ground-water flow so that levels in well 8830–3700–87 rise and fall with the river. A combination of several different effects is reflected in other hydrographs presented in figures 9 and 10.

The water level in a well that taps an artesian aquifer may be quite sensitive to changes in atmospheric pressure. In a few small diameter wells near Paducah it was noted that a movement of air, which can easily be heard by a person standing near the well, accompanies major changes in atmospheric pressure. These "blowing" wells are usually found near the outcrop zone of the Holly Springs sand at a point where the ground water first becomes confined between impermeable beds. The short-term record of water levels in well 8835–3655–121 presented in figure 11 shows the effect of atmospheric pressure changes on such a well. The hourly readings at Barkley Field, expressed in feet of water and inverted, are shown below the hydrograph of the well.

RECHARGE AND DISCHARGE

The ground-water reservoirs in this area are in a state of essential equilibrium; that is, the average annual recharge is nearly balanced by the average annual discharge and the water table is moderately stable except for seasonal fluctuations. Water is added to the ground-water reservoirs (aquifers) by recharge from precipitation and is discharged from the aquifers by evapotranspiration, by pumpage from wells, and by discharge into streams. The water that is discharged from an area as streamflow can be (1) all surface runoff when the stream is

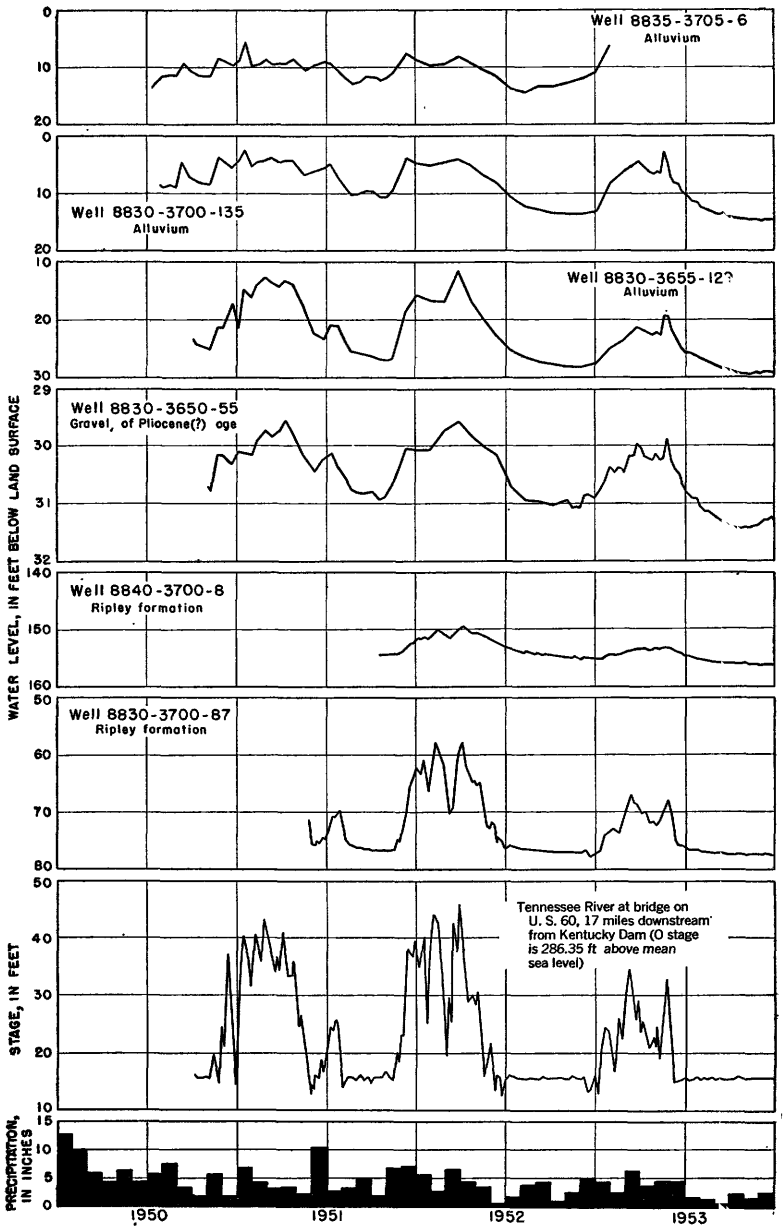
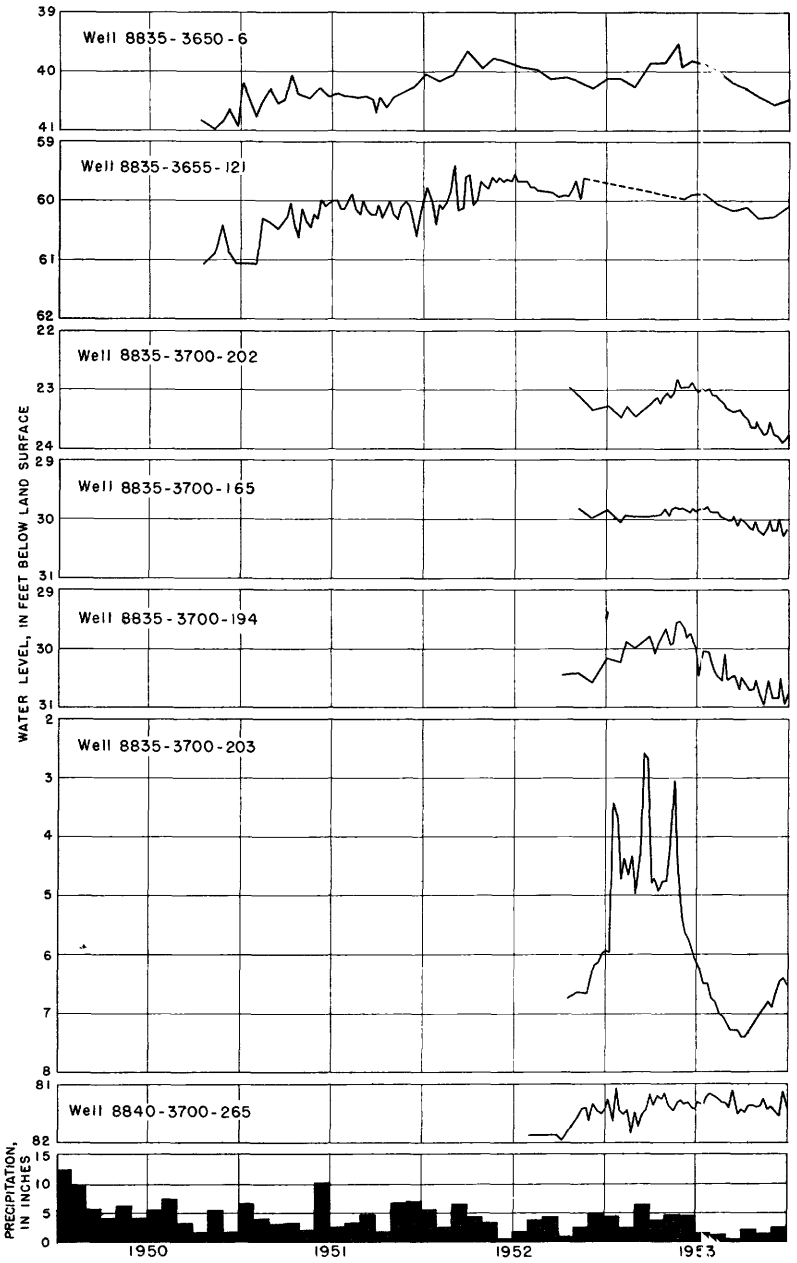


FIGURE 9.—Water-level fluctuations in wells in the alluvium, gravel of Pliocene(?) age, and Ripley formation, stage of the Tennessee River, and precipitation in the Paducah area Kentucky, 1950–53.



fluctuations in wells in the Holly Springs sand and precipitation in the Paducah area, Kentucky, 1950–53.

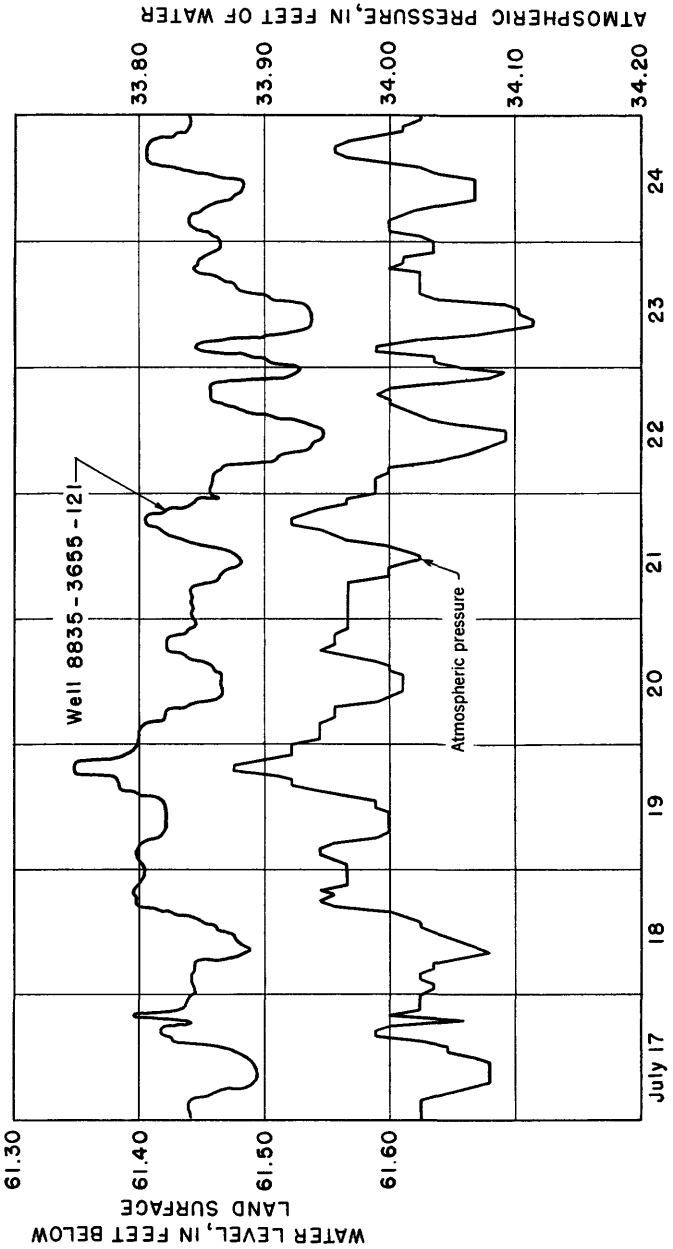


FIGURE 11.—Hydrograph showing effect of atmospheric pressure on water levels in a well in the Paducah area, Kentucky.

above the water table, (2) a mixture of surface- and ground-water discharge when the stream level is lower than the water table immediately following heavy precipitation, and (3) all ground-water discharge when there is no overland runoff to streams.

Streamflow and precipitation records in two drainage basins near Paducah have been analyzed to determine approximate values of ground-water runoff and evapotranspiration losses in the area. These two basins are the East Fork of Clarks River and Mayfield Creek upstream from Lovelaceville.

The East Fork of Clarks River drains an area of 227 square miles where gravels of Pliocene(?) age are underlain by the Porters Creek clay. The drainage basin extends south of the gaging station near Benton, Ky., to the Tennessee State line. The precipitation records for Murray, Ky., which is located in the upper third of the basin, were used for this basin study.

The part of Mayfield Creek that lies above the gaging station at Lovelaceville heads to the south of Mayfield, Ky., near the Tennessee State line, and drains an area of 211 square miles. It flows over the Holly Springs sand through that reach of the stream. The precipitation records for Mayfield, Ky., which is located in the upper third of the basin, were used for this basin study.

During the growing season, when evapotranspiration uses much of the rain that falls upon the ground, streamflow is derived largely from ground water. The discharge measurements of the East Fork of Clarks River and Mayfield Creek for the 15 years of record show a fairly constant base flow during the growing season of 4 and 11 cubic feet per second, respectively, for the two streams.

The difference in ground-water contribution to the two streams during long rainless periods may be due to the difference in the materials underlying these basins or to a difference in area between the ground-water drainage basin and the topographic drainage basin. In the basin of East Fork of Clarks River the underlying material consists of a thin layer of relatively impermeable gravel over a thick layer of clay. A large part of the precipitation falling on the basin is discharged to the stream in a relatively short time. The materials underlying the basin of Mayfield Creek consist of a great thickness of sand. Either the ground water stored in the sand is discharged more slowly and more uniformly, or the ground-water drainage basin of Mayfield Creek is much larger than that of East Fork of Clarks River. The runoff characteristics of the two streams are shown in figure 12.

Approximate values of evaporation and transpiration losses of the two drainage basins were computed by subtracting the average yearly runoff of each stream from the average yearly precipitation on the

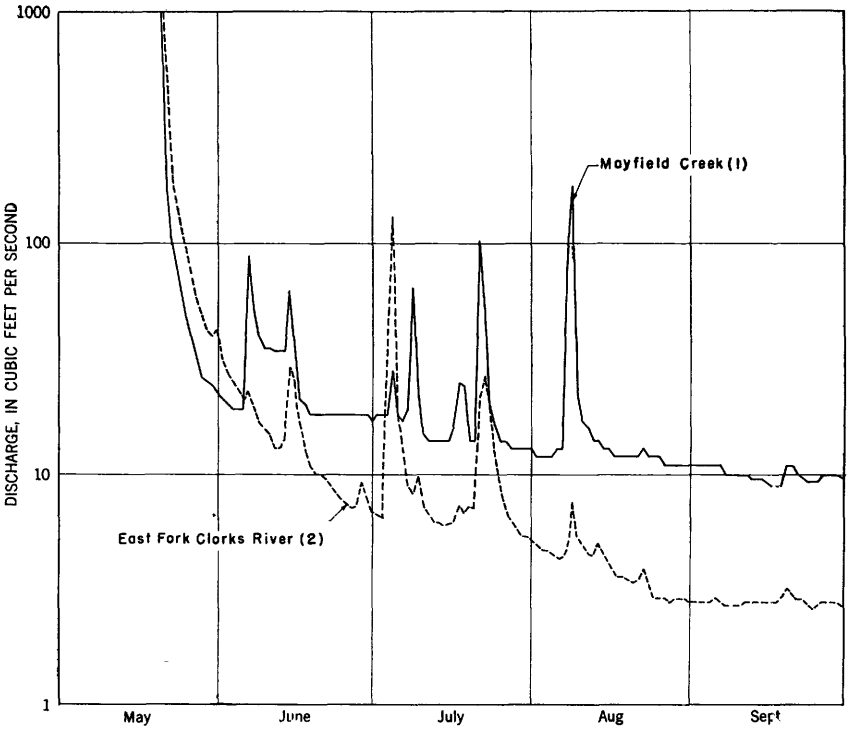


FIGURE 12.—Runoff characteristics of two streams fed by ground water: (1) a sand stratum intersected by the stream and (2) a gravel stratum above stream level, 1953.

surface basin drained by that stream. The average annual evapotranspiration for the East Fork of Clarks River basin was almost 29 inches. Mayfield Creek basin evapotranspiration was about 32 inches. An exact determination would entail obtaining accurate values of (1) change in water storage, (2) basin leakage, (3) precipitation, and (4) stream runoff. The precipitation, runoff, and evapotranspiration for the years of record of the East Fork of Clarks River and Mayfield Creek drainage basins are shown in figure 13.

The evapotranspiration values of 29 and 32 inches shown on figure 13 are total evaporation and transpiration losses from the area; they include water losses from surface-water, soil-water, and ground-water sources. Although the total evapotranspiration is in the general magnitude of 30 inches per year, the evapotranspiration from the ground-water reservoirs is probably negligible. In most of the area the ground water is too deep to be available to the roots of plants.

EFFECT OF PUMPING OF WELLS

The pressure of the water inside an unpumped well is in equilibrium with the pressure of the water outside the well. When water is with-

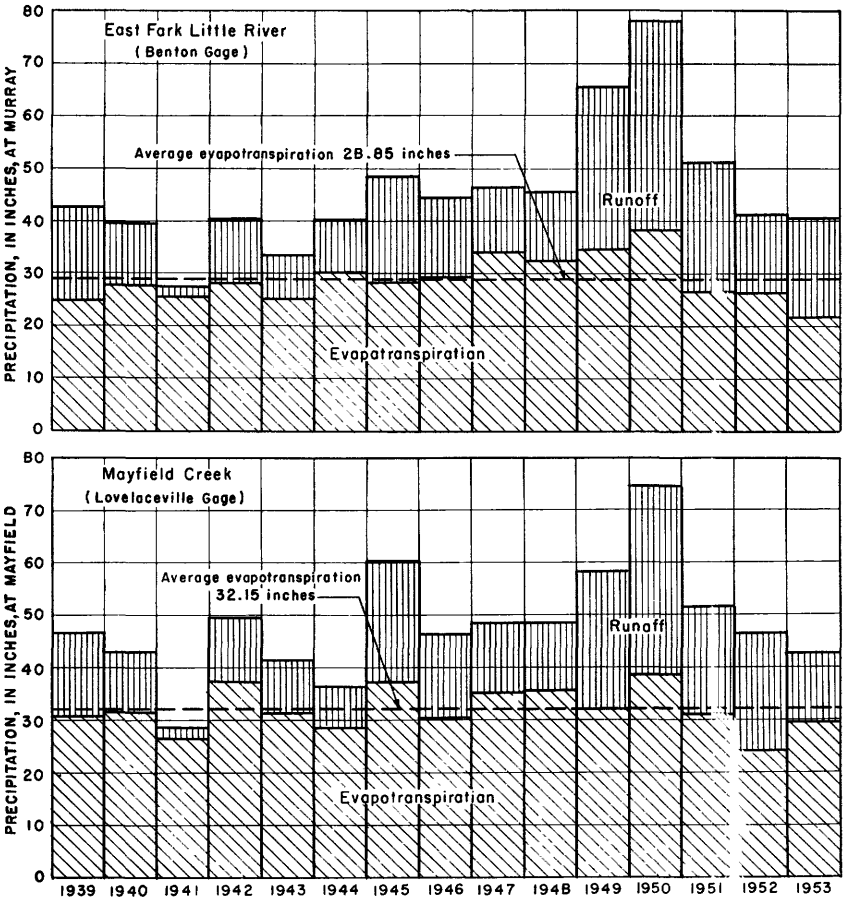


FIGURE 13.—Precipitation, stream runoff, and evapotranspiration in two drainage basins near Paducah, Ky.

drawn from the well the pressure in the well is decreased and water flows into the well. Under water-table conditions, the water level near a pumped well is a cone-shaped surface that slopes down toward the well screen (fig. 14). The depression of the water table is greatest at the well and becomes progressively smaller with increasing distance from the well. The drawdown in the well is a function of the discharge, so that doubling the pumping rate will double the drawdown. The radius of the cone of depression is a function of the time elapsed since pumping began and grows rapidly at first and then more slowly with time. As long as the withdrawal of water from the well is greater than the inflow, the water level will continue to decline in the well. As head is lowered in the well, a hydraulic gradient toward the well is developed and water flows into the well.

Artesian aquifers behave like conduits or pipes through which water is transmitted under pressure. The piezometric surface about a

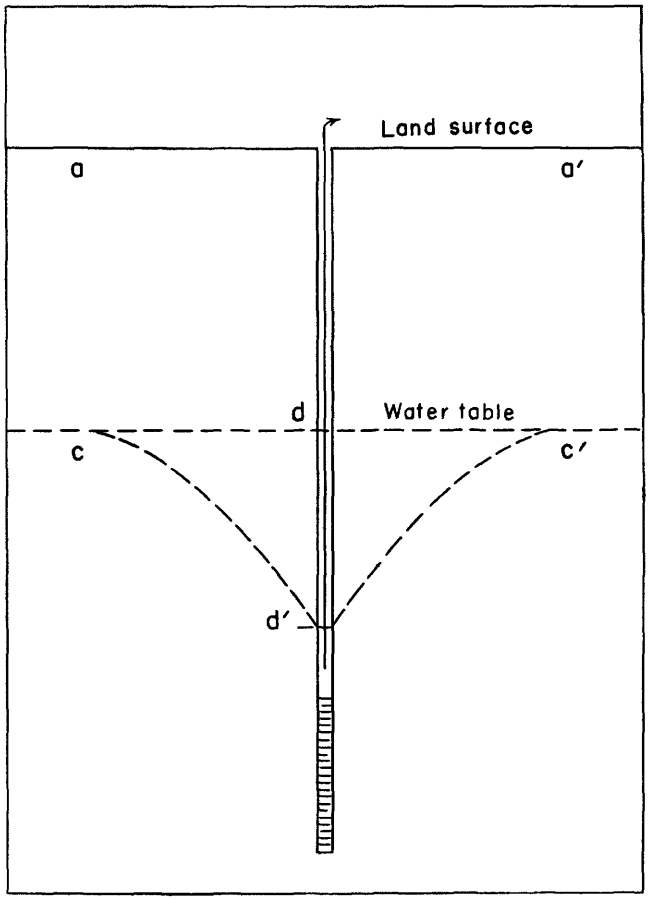


FIGURE 14.—Diagrammatic section of a well that is being pumped, showing its drawdown (*d-d′*), cone of depression (*c-c′-d′*), and area of influence (*a-a′*). (Meinzer, 1923b, fig. 30, p. 61.)

discharging well assumes a shape similar to the cone of depression about a water-table well. In artesian aquifers, however, the cone of depression represents a decreasing pressure surface which slopes toward the well. Under water-table conditions, doubling the discharge rate of an artesian well will double the drawdown. The cone of depression extends outward more rapidly and to greater distances than under water-table conditions. This is due to the low coefficient of storage of artesian aquifers.

The pumping rate divided by the stabilized drawdown is the specific capacity of the well. Specific capacities, as usually measured, are not exact quantities because water levels in the pumped wells at the end of the tests are still declining although the rate of decline may be very slow. The specific-capacity determinations listed in table 6 are

TABLE 6.—*Specific capacities of wells in the Paducah area, Kentucky, 1954*

Well no.	Formation	Type of well	Diameter of well (in)	Depth of well (ft)	Static water level below land surface datum (ft)	Date of test 1954	Length of test (min)	Pumping rate (gpm)	Drawdown (ft)	Specific capacity (gpm per ft of drawdown)
8830-3650-136	Sand and gravel of Pliocene(?) age	Dug	24	37	32.42	Feb. 11	40	5	[a] 2.27	2.2
8830-3655-79	do	do	24	43	39.90	Jan. 6	60	4.1	.8	5.1
125	Alluvium	do	36	40			240	7	19	[b]
251	Sand and gravel of Pliocene(?) age	do	24	45	43.58	Feb. 17	30	5	.4	12.5
8830-3700-95	Alluvium	do	24	26			120	4.2	6.0	[b]
8835-3700-70	Ripley	Drilled	4	333			7,200	6	20	.3
194	Holly Springs sand	Dug	24	35	30.81	Jan. 7	20	5.3	3.59	[b]
8835-3705-34	Sand and gravel of Pliocene(?) age	do	24	24	18.48	Feb. 11	37	4	4.78	[b]
89	do	do	24	36			300	11.7	4	[b]
8840-3705-113	do	do	36	46			30	4.17	3	[b]
136	do	do	24	21	17.53	Feb. 18	41	7.5	3.56	[b]
176	Holly Springs sand	do	24	23			180	5.8	10	[b]
234	Ripley	Drilled	4	353	17.36	Jan. 5	55	10	12.98	.8

[a] Estimated.

[b] Pump broke suction.

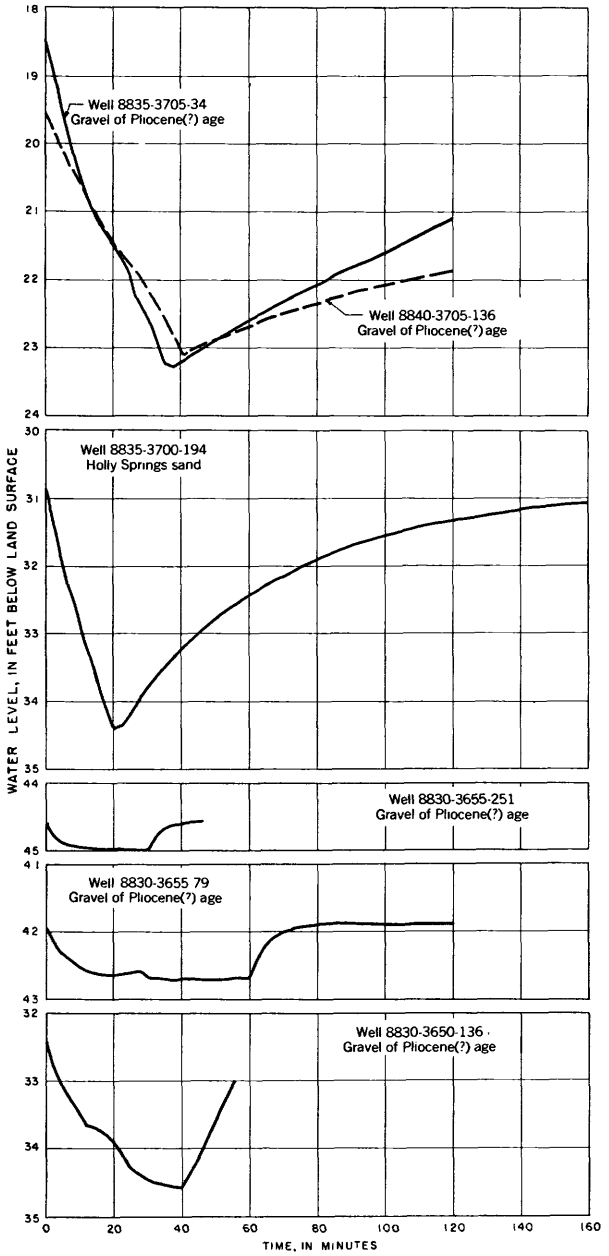


FIGURE 15.—Time-drawdown curves of water levels in pumping wells.

expressed in gallons per minute per foot of drawdown. In some of the tests the water level in the pumped well did not stabilize and the well was pumped dry; therefore, specific capacity values of these wells could not be obtained. The time-drawdown curve of the water level in each well tested is presented in figure 15.

The specific capacity of a well is controlled by the type of well, the type and degree of well development, and the character and thickness of the aquifer. In identical wells coarse and well-sorted, uncemented sand or gravel will yield large quantities of water with a small drawdown, whereas a poorly sorted, fine-grained, or cemented material will offer a greater resistance to the flow of water and thereby decrease the yield and increase the drawdown.

USE OF GROUND WATER

The amount of water withdrawn from wells is very small compared to that lost through natural discharge in the area. Data on water withdrawal from a selected group of domestic wells were used to obtain values of total use and per capita use of ground water in the Paducah area. There is no large commercial or industrial use of ground water, and the total withdrawal from wells for domestic and stock use amounts to about 63 million gallons, or less than 0.03 inch, of water per year. Based on the first month's meter readings from homes with city water supplies which previously had individual water supplies, the per capita use of ground water ranged from 5 to 43 gpd per person and depended largely upon the method of lift which had previously been used to withdraw the water. On the average, almost three times as much water is used from a domestic well equipped with a power pump as is used from one equipped with a hand pump or a bucket and rope. In homes with bath and laundry facilities, the per capita use of ground water ranged from 24 to 43 gpd and averaged 35 gpd; in homes with running water but no bath or laundry facilities, it ranged from 10 to 21 gpd and averaged 16 gpd; and in homes where water was withdrawn from the well by hand pump or bucket and rope, it ranged from 5 to 12 gpd and averaged 10 gpd.

SEWAGE DISPOSAL

The silty loess that overlies most of the Paducah area has a very low permeability (table 4), and the many sewage-disposal problems in this area are traceable in almost every place to the poor percolation rates of water through this material. Several disposal systems consisting of tile fields in the loess have been replaced in recent months by seepage pits that penetrate the full thickness of loess and utilize sand or gravel formations that underlie the loess.

Before seepage-pit construction could be approved in this area, it was necessary to determine the extent and nature of the geologic materials underlying each installation. Hydrologic investigations at two sites southwest of Paducah were conducted by the Geological Survey personnel at Paducah in 1952 upon request made by the Federal Housing Administration and the Veterans Administration. These investigations included locating and supervising the drilling of test holes on the two tracts, collecting samples and compiling logs of the material found in each hole, conducting percolation tests on the strata penetrated, and collecting information concerning wells in the vicinity of the housing projects. Figure 16 shows the location of the subdivisions and of the test holes and nearby wells.

CHEROKEE HIGHLANDS SUBDIVISION

Five test holes drilled at locations 8835–3700–167, 168, 169, 170, and 172 and a pit dug at location 8835–3700–171 provided most of the geologic data for this investigation. The logs of these test holes (p.190–191) indicate that sand underlies the silt in the development area at depths ranging from 8½ to 23 feet below the land surface. Although the thickness of sand is greatest beneath the western half of the development, there is at least 4 feet of sand on the eastern edge of the tract. A log of well 8835–3700–164 (p. 189) shows that 64 feet of sand was penetrated at a point about 400 feet west of Cherokee Highlands. A comparison of the samples from all the test holes shows differences in grain size and in the amount of clay mixed with the sand laterally and with depth. In general the amount of clay mixed with the sand decreases with increased depth of the test hole.

Information concerning wells in the vicinity was obtained in order to determine the extent of the sand stratum and also to learn to what extent this sand is used as a source of water supply for nearby wells. The inventory showed that most of the wells obtained water from the same sand that underlies Cherokee Highlands. The records of all wells inventoried for this investigation are included in table 16.

Test hole 8835–3700–172 (12 inches in diameter and 19 feet deep) was used to determine percolation rates of water from the clayey sand between 10 and 19 feet. Fifty gallons of clear water was dumped into the dry hole on March 22, and the rate of water-level decline was recorded during a period of 2 hours and 45 minutes. During this time the water level dropped a total of 1.83 feet. A graph showing the rate of decline (test 1) is included in figure 17.

Test hole 8835–3700–172 then was deepened to 26 feet, and another test was made on March 26 to determine the rate of flow from the sand below 19 feet. Fifty gallons of clear water was dumped into the hole and the rate of fall recorded. During the first 2 hours and 45 minutes

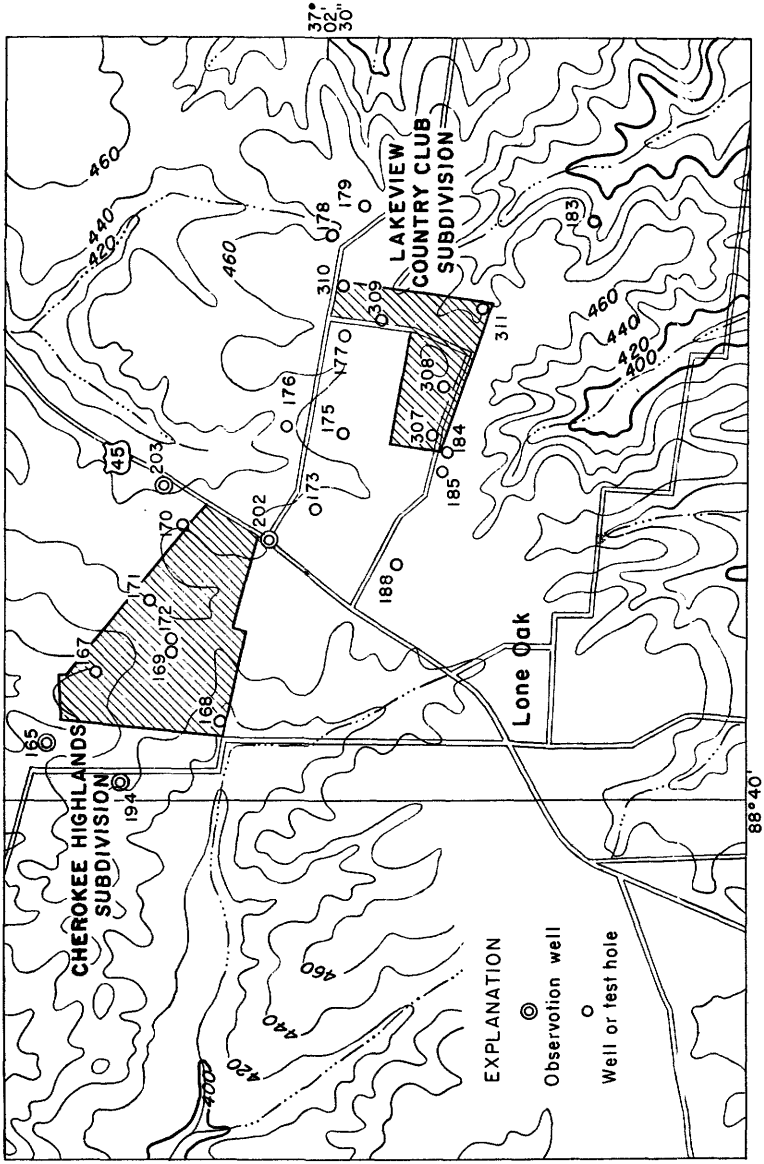


FIGURE 16 – Map showing Cherokee Highlands and Lakeview Country Club subdivisions and the location of test holes and nearby wells.

the water level dropped a total of 2.57 feet, or 0.74 foot more than the water-level decline in test 1. The water level dropped 5.70 feet in the first 11 hours and 27 minutes; it dropped only 0.25 foot in the next 11 hours. The hole at the completion of the test was 2.0 feet shallower than at the beginning. This indicates that clayey sand from above fell into the hole during the test, partly sealed off the more permeable sand at the bottom, and slowed down the rate of flow during the last

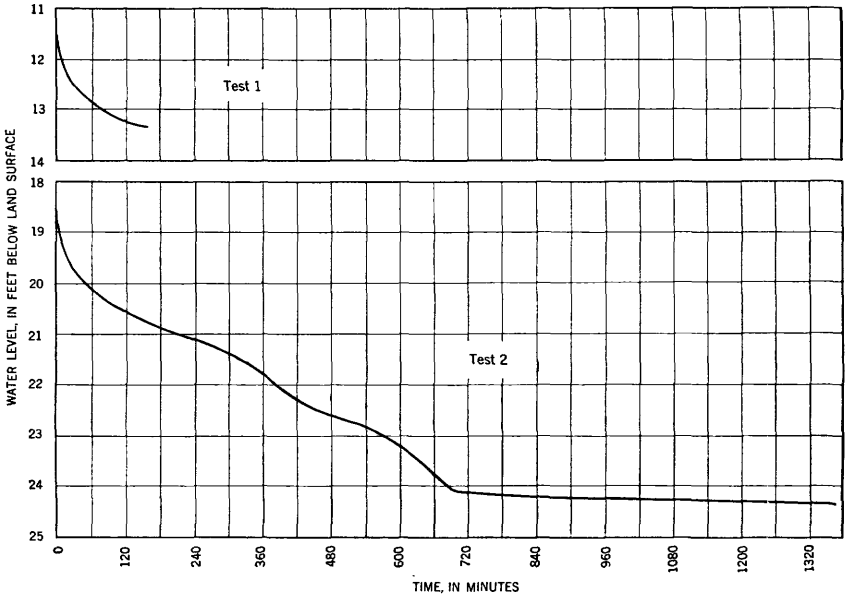


FIGURE 17.—Graphs showing the water-level decline in a clayey sand stratum (test 1) and in a fine to coarse grained sand stratum (test 2) in the Cherokee Highlands subdivision.

part of the test. A graph showing the rate of decline (test 2) is included in figure 17.

LAKEVIEW COUNTRY CLUB SUBDIVISION

Test holes, 3 feet in diameter, were drilled at the locations 8835–3700–307, 308, 309, 310, and 311 as shown in figure 16. Samples of the material penetrated are described in the logs (p. 193–194). These logs show that 7 to 10 feet of silty clay occur just below the surface. Beneath this is a stratum 12 to 25 feet thick of sandy gravel with a few streaks of clayey gravel. Most of this stratum was above the water table and was dry. A bed of sand, predominantly unconsolidated but with some hard layers, occurs just below the gravel bed in all holes but 8835–3700–307 where there is an intervening bed of clay about 3 feet thick. The thickness of the sand is unknown, for the deepest hole penetrated only 7 feet into it. The sand is generally water bearing.

Information concerning wells near the proposed housing project was gathered to determine the extent of the gravel and sand strata which underlie the project area and to learn to what extent these strata are used as sources of supply for nearby wells. Very little reliable information of the depth to or the amount of gravel and sand could be obtained from the well owners and users, but measurements of depth to water and depth of wells were obtained. Within a quarter of a mile of the project, nine wells obtain water from gravel and sand that lie at about the same depth as the similar deposits under the Lakeview subdivision.

Rate-of-seepage tests were made in test holes 8835–3700–307, 308, and 309. These tests consisted of pouring three 50-gallon barrels of clear water into each hole as rapidly as possible and then measuring the decline of water level as the water seeped out of the hole into the gravel or sand. Automatic gages that continuously record the decline in water level were used. The decline of water levels is shown in figure 18.

Test 1 was run on hole 8835–3700–307 (30.3 feet deep), which is bottomed in 3.5 feet of loose sand below a 3-foot layer of clay. Two feet of water was standing in the hole and water level rose an additional 2.36 feet after 150 gallons was poured in. After 9¼ hours the water level had receded to within 0.07 foot of the original water level before addition of water.

Test 2 was run in hole 8835–3700–309 (25.0 feet deep), which is bottomed on a hard dry sand layer at the base of the gravel stratum. The 150 gallons had entirely seeped out, leaving the hole dry after 5¼ hours.

Test 3 was run in hole 8835–3700–308 (35.0 feet deep), which is bottomed in 1.2 feet of damp sand below the gravel stratum. It took 5¾ hours for 150 gallons to seep out of this hole.

The effluent from seepage pits in the Lone Oak vicinity may cause the water levels in this area to rise a measurable amount after several years of continuous recharge. Four unused wells near the Cherokee Highlands subdivision (fig. 16) have been measured periodically since 1952, but a rise of water levels in these wells due to this recharge has not been recorded thus far. The hydrographs of these wells are shown in figure 10.

TYPES OF WELLS

Wells may be classified into types according to the method of construction used in sinking the hole into the ground. The four types commonly found in this area (dug, bored, drilled, and driven wells) are shown in figure 19. If the water-bearing stratum is less than 50 or 60 feet below the land surface, dug wells 2 to 4 feet in diameter are usually constructed, but, as the depth of water increases, well diame-

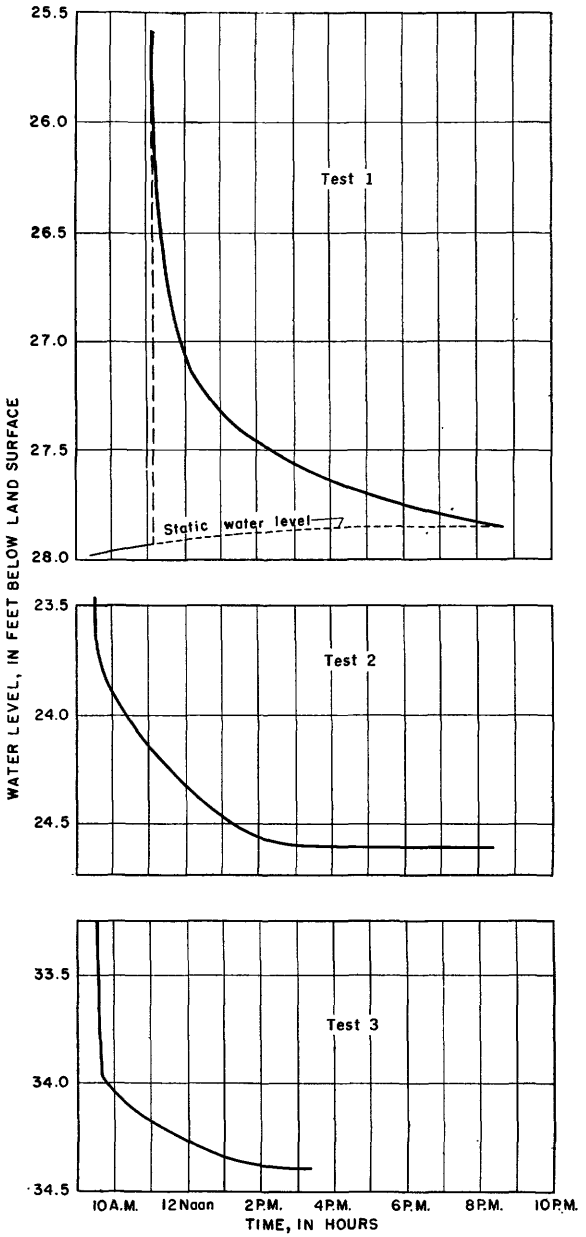


FIGURE 18.—Graphs showing water-level decline in a saturated sand stratum (test 1), a dry gravel and sand stratum (test 2), and a damp sand stratum (test 3) in the Lakeview Country Club subdivision.

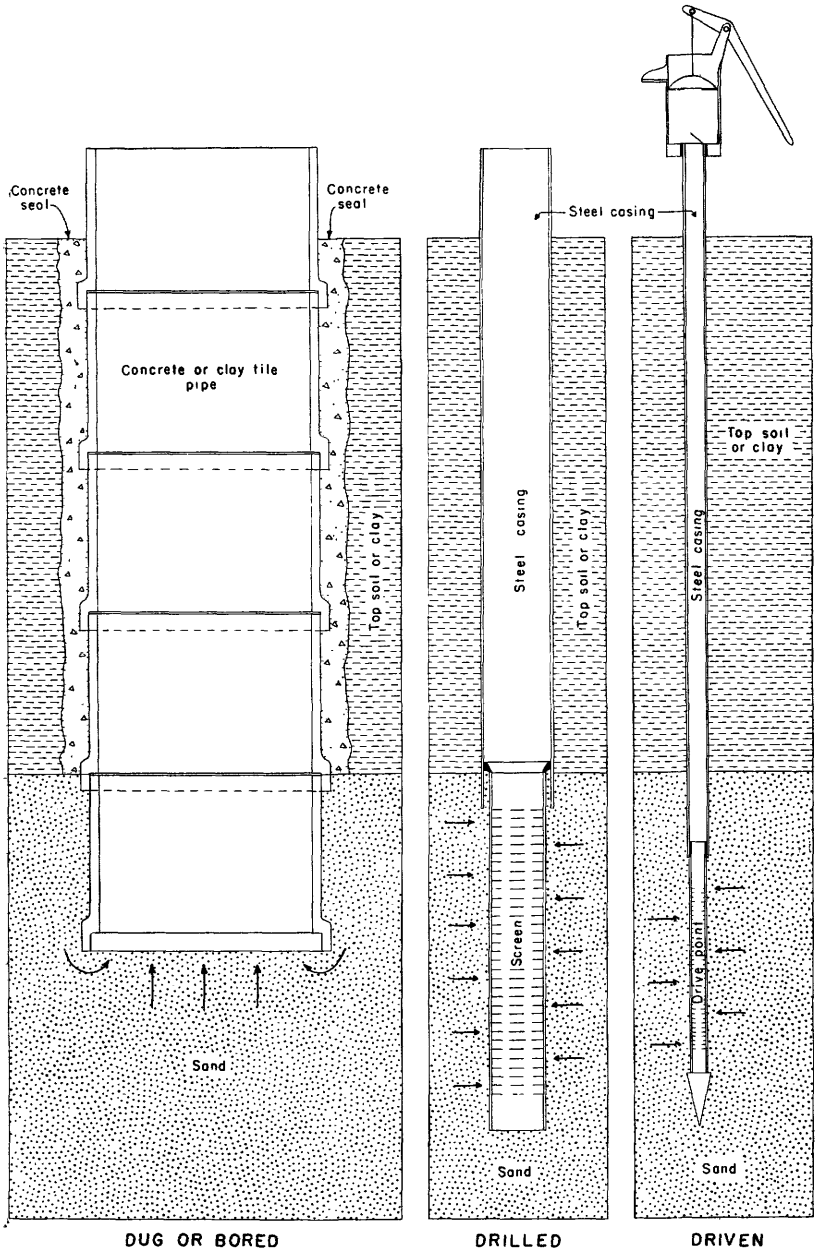


FIGURE 19.—Types of wells used in the Paducah area, Kentucky.

ters decrease and small-diameter bored or drilled wells are more common. Driven wells are found only where the aquifer is shallow and is overlain by easily penetrated material.

A dug well is excavated with hand tools and lined with brick or concrete tile. A dug well may be subject to contamination by surface seepage and care must be taken during construction to insure a tight seal above the aquifer, between the formations and well lining, and between the tile or brick joints. Most of the 1,224 dug wells investigated (table 16) are 2 feet in diameter and range in depth from 7 to 98 feet. The large number of dug wells in the Paducah area is probably due to one or more of the following reasons: (1) The depth to water is less than 50 feet over most of the area and is accessible to hand-dug wells. (2) No special equipment is needed for construction and the initial cost is low. (3) Thin or slow-yielding aquifers can be used because of the large storage capacity of a dug well.

Bored wells are constructed with a screw-type auger that may be either manually or mechanically operated. The bored wells in the Paducah area are usually cased with 6- or 8-inch clay pipe, but some of the wells bored recently are 24 inches in diameter and cased with concrete tile. The 396 bored wells inventoried range in depth from 6 to 105 feet. Although the initial cost of the small-diameter bored wells is low, the small storage capacity and the difficulty of keeping surface seepage out of the well make this type of construction less desirable than any of the other types.

Drilled wells may be constructed by the hydraulic-rotary, cable-tool, or jetting method of drilling. In the hydraulic-rotary method, the drill pipe, with a drill bit attached to the lower end, is rotated to break up the material into small particles. A thin mud pumped through the drill pipe, out through the openings in the bit, and up to the surface through the space between the drill pipe and the walls of the hole, removes the drill cuttings. The circulating mud also prevents caving by plastering and supporting the formations that have been penetrated until the final well casing and screen can be placed in the hole. In the percussion-tool method, the material is broken into small fragments by the alternate raising and dropping of a heavy chisel-edged tool, and is removed from the hole at intervals by a bailer. In the jetting or "wash rig" method, a stream of fluid is pumped down a 1¼- to 2-inch pipe and allowed to jet against the formation. As the earth material is crumbled, it is carried to the surface by the rising column of water. The drill pipe is sometimes turned by hand to keep the hole true. Inasmuch as no drill bit is used, it is customary to leave the drill pipe in the hole to serve as the well casing. Data on 116 drilled wells are included in table 16.

A driven well is constructed by driving a pointed screen, called

a drivepoint or wellpoint, and attached pipe directly into a water-bearing formation. The finished well consists of a series of lengths of pipe fitted at the upper end with a pump and at the lower end with the drivepoint through which the water is admitted. The gravel formation that overlies most of the Paducah area prohibits the use of driven wells except in those places where the gravel is missing. Only 27 driven wells in this area were inventoried.

Although dug and bored wells are still constructed, many drilled wells are constructed in the sand and gravel aquifers. The drilled wells are usually finished with well screens or strainers. A well screen allows fine sand to enter the well where it can be removed, but it holds back the larger particles so that they will build up into a natural screen around the well screen. In this way the permeability of the water-bearing material around the well is greatly increased, resulting in a greater yield of water from the well.

METHODS OF LIFT

Most wells in the Paducah area are equipped with either electrically driven or hand operated pumps. Shallow-well suction pumps can be used if the pumping level of a well is less than 22 feet below the pump. Below this depth, deep-well jet or cylinder pumps are required to lift the water to the surface. Although the bucket and rope method of withdrawing water is still used in many wells in this area the data presented in table 16 show that most wells are now equipped with electrically operated pumps.

TEMPERATURE OF GROUND WATER

Ground-water temperatures in shallow aquifers may vary considerably with summer to winter changes of air temperature, but the deeper lying aquifers contain water of fairly constant temperature. In general the range for the shallow water is between 57° and 64°F. The average temperature of water from the deeper aquifers is about 59°F—the average annual air temperature. The temperature of water from wells in the area is listed in table 7 and in the "Remarks" column of table 16.

QUALITY OF GROUND WATER

The present report includes the results of 62 chemical analyses of water from wells in the Paducah area (table 7). Twenty-seven of these are comprehensive analyses that show the concentrations of all the constituents and the characteristics commonly determined in water analyses. The remaining 35 are partial analyses that show only the more important constituents and characteristics. A report on the public and industrial water supplies of the Jackson Purchase region by Pree and Walker (1953) presents other data on chemical

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TABLE 7.—*Analyses of water from wells and a spring in the Paducah area, Kentucky*

[For location of wells, see plate 1. Depth of well: r, Reported. Geologic horizon: Al, Alluvium; Hs, Holly Springs sand; Pl(?), gravel of Pliocene(?) age; Ri, Ripley formation. Chemical constituents in parts per million]

Well no.	Depth of well (ft)	Geologic horizon	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids: Sum	Dissolved solids: Residue on evaporation at 180°C	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H_2SO_4[1]	Specific conductance at 25°C (micromhos)	pH	Color (cobalt scale)
8830-3650-41	60	Pl(?)	Jan. 4, 1954	----	7.0	0.04	0.03	7.0	2.2	11	0.9	28	1.1	14	0.0	8.0	65	69	27	4	14	113	6.3	2
8830-3655-1	27	Al	do	54	----	6.7	----	----	----	----	----	364	1.0	132	.1	7.8	----	----	462	----	----	973	----	----
13	Spring	Pl(?)	do	54	----	.21	----	----	----	----	----	29	2.7	32	.1	11	----	----	29	----	----	196	----	----
78	48	Pl(?)	Nov. 20, 1952	57	12	.20	.00	13	4.9	32	1.9	51	3.5	36	.1	26	155	166	53	11	----	274	6.1	0
126	r38	Al	Nov. 21, 1950	60	----	.23	----	----	----	----	----	85	26	14	.3	6.8	----	----	83	----	----	236	----	----
249	32	Al	Nov. 20, 1952	56	----	.08	----	----	----	----	----	178	47	23	.4	25	----	----	178	----	----	482	----	----
250	r250	Ri	Jan. 4, 1954	55	5.9	1.6	.27	16	4.5	9.7	2.6	66	8.7	16	.1	.1	98	114	59	4	27	183	6.2	1
251	45	Pl(?)	Nov. 20, 1952	57	11	.12	.00	10	3.4	11	1.4	39	1.0	20	.1	5.5	82	88	40	7	----	140	6.1	0
8830-3700-1	r42	Al	do	60	----	.10	----	----	----	----	----	73	18	9	.1	4.3	----	----	66	----	----	199	----	----
12	r365	Ri	Nov. 21, 1950	60	----	14	----	----	----	----	----	42	22	4	.2	.0	----	----	33	----	----	99.3	----	----
88	r296	Ri	do	60	10	14	----	49	6.8	19		150	19	35	.0	.0	227	226	150	27	----	392	7.9	2
			July 3, 1951	64	----	8.0	----	----	----	----	----	157	12	25	.1	.1	----	----	151	----	----	392	----	----
94	r226	Ri	Nov. 21, 1950	56	10	4.0	----	45	8.0	15		150	20	24	.1	.2	200	196	146	22	----	350	7.4	5
			July 5, 1951	60	----	.94	----	----	----	----	----	148	7	26	.4	1.0	----	----	140	----	----	357	----	----
209	r20	Al	Nov. 21, 1950	60	----	.44	----	----	----	----	----	95	26	3	.7	13	----	----	104	----	----	240	----	----
264	43	Pl(?)	do	58	----	.09	----	----	----	----	----	150	40	20	.2	9.9	----	----	126	----	----	380	----	----
281	r42	Al	Nov. 20, 1952	57	25	.83	.01	19	7.3	10	.9	70	14	12	.2	9.2	140	----	78	20	----	205	6.0	1
316	r167	Ri	Jan. 5, 1954	54	9.1	2.1	.42	11	4.6	3.7	2.0	64	4.0	1.3	.1	.0	68	76	46	0	----	114	6.6	2
8835-3650-4	34	Hs	Nov. 20, 1952	59	----	.10	----	----	----	----	----	96	30	32	.0	87	----	----	170	----	----	506	----	----
16	63	Pl(?)	Jan. 4, 1954	49	7.9	.67	.00	54	17	57	2.3	36	1.4	108	.0	182	448	496	204	178	28	751	5.9	1
8835-3655-23	25	Hs	do	56	11	.20	.00	2.7	1.0	3.8	.4	20	1.6	1.4	.0	.1	32	30	11	0	22	37.8	5.0	1
38	58	Hs	Nov. 20, 1952	63	----	.09	----	----	----	----	----	109	11	20	.1	7.0	----	----	87	----	----	272	----	----
115	r70	Hs	do	59	16	.15	.00	5.6	1.5	6.6	.6	29	1.2	4.5	.1	5.1	56	52	20	----	----	79.3	6.0	0
130	50	Hs	Jan. 5, 1954	56	10	.38	.00	9.1	1.3	6.1	.2	44	.9	4.1	.1	3.3	57	62	28	0	22	97.2	6.0	2
8835-3700-9	44	Al	do	46	7.1	.16	.03	68	29	4.3	11	294	63	65	.1	4.7	436	440	292	48	----	765	7.2	2
44	r18	Pl(?)	do	----	----	.25	----	----	----	----	----	10	3.5	32	.1	10	----	----	20	----	----	162	----	----
62	38	Hs	do	52	6.6	.15	.03	3.2	1.3	9.7	.4	30	1.2	6.5	.0	1.5	44	50	13	0	12	72.5	6.3	1
70	r333	Ri	Nov. 21, 1950	56	9.0	.05	----	43	8.7	44		134	26	72	.1	.0	268	274	144	32	----	479	7.7	5
			July 3, 1951	59	----	13	----	----	----	----	----	135	23	72	.3	.3	----	----	145	----	----	505	----	----
98	41	Al	Nov. 21, 1950	60	----	.39	----	----	----	----	----	739	556	577	.0	.4	----	----	898	----	----	3,520	----	----
163	r200	Ri	Jan. 5, 1954	45	----	.24	----	----	----	----	----	59	38	20	.2	1.0	----	----	110	----	----	277	----	----
164	r100	Hs	do	58	----	3.7	----	----	----	----	----	51	.4	28	.2	.5	----	----	24	----	----	228	----	----
173	25	Hs	Nov. 19, 1952	61	----	.06	----	----	----	----	----	59	7.4	25	.1	5.4	----	----	25	----	----	204	----	----
183	r436	Ri	Jan. 4, 1954	----	4.5	.43	.03	42	10	30	5.8	148	21	52	.3	.3	239	245	148	25	----	445	7.1	1

222	44	Pl(?)	do			.62						30	6.8	30	.1	14			28			191		
259	62	Hs	Nov. 19, 1952	58	14	.66	.00	6.0	2.4	12	.6	16	1.9	26	.0	1.0	72	84	25	12		121	6.5	0
285	27	Pl(?)	do	59		.07						26	78	17	.1	.9			77			293		
292	44	Pl(?)	do	59		.07						75	11	23	.2	2.0			55			224		
300	39	Hs	Jan. 5, 1954			.05						61	2.7	3.8	.1	9.2			40			130		
8835-3705-2	21	Al	Nov. 21, 1950	58		.21						266	123	12	.3	40			326			729		
40	16	Pl(?)	Nov. 18, 1952	61	16	.28	.00	23	7.5	44	2.1	45	4.7	54	.0	82	256	269	89	51		423	5.8	0
82	29	Pl(?)	Jan. 5, 1954		9.6	.16	.00	33	15	58	1.9	58	63	84	.1	63	356	347	143	96	63	588	5.7	1
8840-3700-7	r385	Ri	Jan. 4, 1954	60	4.6	.36	.00	36	13	28	5.6	166	15	42	.4	.5	227	221	145	7		416	7.4	3
10	29	Hs	do	58		12						40	1.2	2.8	.1	.1			19			70.0		
27	r113	Hs	Nov. 19, 1952	59	12	.45	.00	3.6	1.2	6.4	1.6	32	1.0	3.2	.1	.1	45	46	14	0		58.4	5.9	1
54	r71	Hs	Jan. 4, 1954			3.3						32	2.5	13	.1	.1			17			99.2		
74	r93	Hs	Nov. 19, 1952	57		.07						52	4.5	10	.0	1.9			30			126		
103	46	Pl(?)	do	60		.14						93	12	65	.0	73			114			524		
153	28	Pl(?)	do	60		.06						125	4.9	86	.1	1.9			104			485		
262	r95	Hs	do	57	12	.10	.00	2.6	1.6	3.4	.6	19	1.5	3.0	.0	2.0	36	35	13	0		41.2	6.3	1
288	r300	Ri	do	59	27	3.1	.02	33	8.5	7.2	3.6	143	11	4.5	.1	.2	169	166	117	0		261	7.2	1
307	r40	Pl(?)	do	58		.14						294	7.4	34	.3	4.8			100			569		
312	20	Pl(?)	do	57	32	.97	.04	24	8.7	60	3.3	15	103	18	.2	17	245	254	97	83		366	5.5	0
8840-3705-1	24	Pl(?)	Nov. 18, 1952	61		.14						146	76	14	.3	25			96			511		
8	23	Al	Jan. 5, 1954		14	1.2	.56	59	72	243	3.4	272	548	110	.7	34	1,220	1,250	444	220		1,800	7.1	2
34	47	Pl(?)	Nov. 18, 1952	61	18	.21	.00	54	8.3	60	3.8	276	4.4	34	.2	19	338	348	168	0		580	7.0	2
38	19	Pl(?)	do	60		.45						13	12	12	.0	64			64			226		
47	r33	Al	do	60		.73						422	91	140	.3	.4			472			1,210		
70	59	Al	do	59		.07						56	3.7	26	.1	11			34			205		
137	28	Pl(?)	Nov. 19, 1952	60		.09						145	4.5	12	.3	13			60			293		
216	45	Pl(?)	Nov. 18, 1952	60		.21						161	8.2	74	.1	3.7			116			503		
234	r353	Ri	Jan. 5, 1954	61	6.3	3.1	.00	42	11	25	5.6	168	15	41	.3	.0	232	234	150	12		421	7.4	1

[1] Results obtained by titration (cold) to phenolphthalein endpoint with standard alkali solution.

quality of ground and surface water in the region. Data on chemical quality of surface water in the region are given in a report by W. L. Lamar and L. B. Laird (1953).

The dissolved chemical constituents of water analyzed by the U. S. Geological Survey are reported in parts per million. A part per million is a unit weight of a constituent in a million unit weights of water. Thus, a water sample containing 1 part per million (ppm) of iron (Fe) contains 1 pound of iron in a million pounds of the water sampled. In order to express chemical dissociations, as well as to show water analyses graphically, the cations and anions may be expressed in chemically equivalent weights or equivalents per million. Parts per million may be converted to equivalents per million by dividing the parts per million by the combining weight of the respective cation or anion or by multiplying the parts per million by the reciprocal of the combining weight as shown in table 8.

TABLE 8.—*Factors for converting parts per million of mineral constituents to equivalents per million*

Cation	Conversion factor	Anion	Conversion factor
Ca^{++}	0. 0499	HCO_3^-	0. 0164
Mg^{++}	. 0822	SO_4^{--}	. 0208
Na^+	. 0435	Cl^-	. 0282
K^+	. 0256	F^-	. 0526
		NO_3^-	. 0161

The discussion of the quality of water from wells and springs in the Paducah area includes references to both average and median values for the chemical constituents. The median is the midpoint in a series of numbers or values, arranged according to size. For example, the average hardness of all the samples of water from the Holly Springs sand is 36 ppm, but the median is only 24 ppm. The median often is a more typical value than the average, which may be influenced by very high or very low values.

In general, natural waters contain silica, iron, sometimes manganese, calcium, magnesium, sodium, potassium, bicarbonate, sometimes carbonate, sulfate, chloride, frequently small amounts of fluoride, and nitrate. The source and significance of these constituents to the user of the water are listed in table 9. In solution, the mineral compound separates into electrically charged particles called ions. Iron, manganese, calcium, magnesium, sodium, and potassium are positively charged ions, or cations. Carbonate, bicarbonate, sulfate, chloride, fluoride, and nitrate are negatively charged ions, or anions. Usually, the bulk of the dissolved mineral matter will be among a

group composed of calcium, magnesium, sodium, bicarbonate, sulfate, and chloride.

TABLE 9.—*Elements and substances commonly found in ground water*

Constituent	Source	Significance
Silica (SiO_2)	Siliceous minerals present in essentially all formations.	Forms hard scale in pipes and boilers. Inhibits deterioration of zeolite-type water softeners.
Iron (Fe)	The common iron-bearing minerals present in most formations.	Oxidizes to a reddish-brown sediment. More than about 0.3 ppm stains laundry and utensils reddish brown, is objectionable for food processing, beverages. Larger quantities impart taste and favor the growth of iron bacteria.
Manganese (Mn)	Manganese-bearing minerals.	Rarer than iron; in general has same objectionable features; brown to black stain.
Calcium (Ca) and magnesium (Mg)	Minerals that form limestone and dolomite and occur in some amount in almost all formations. Gypsum also a common source of calcium.	Cause most of the hardness and scale-forming properties of water; soap consuming.
Sodium (Na) and potassium (K)	Feldspars and other common minerals; ancient brines, sea water; industrial brines and sewage.	In large amounts cause foaming in boilers, and other difficulties in certain specialized industrial water uses.
Bicarbonate (HCO_3) and carbonate (CO_3)	Action of carbon dioxide in water on carbonate minerals.	In combination with calcium and magnesium forms carbonate hardness; decomposes on application of heat with attendant formation of scale and release of corrosive carbon dioxide gas.
Sulfate (SO_4)	Gypsum, iron sulfides, and other rarer minerals; common in waters from coal-mining operations and many industrial wastes.	Sulfates of calcium and magnesium form hard scale.
Chloride (Cl)	Found in small to large amounts in all soils and rocks; natural and artificial brines, sea water, sewage.	Objectionable for various specialized industrial uses of water.
Fluoride (F)	Various minerals of widespread occurrence, in minute amounts.	In water consumed by children, about 1.5 ppm and more may cause mottling of the enamel of teeth, and as much as 1.5 ppm reduces incidence of tooth decay.
Nitrate (NO_3)	Decayed organic matter, sewage, nitrate fertilizers, nitrates in soil.	Values higher than the local average may suggest pollution. There is evidence that more than about 45 ppm NO_3 may cause methemoglobinemia (infant cynosis) sometimes fatal. Waters of high nitrate content should not be used for baby feeding.[1]

[1] Maxey, K. F., 1950, Report on the relation of nitrate concentrations in well waters to the occurrence of methemoglobinemia: Natl. Research Council, Bull. Sanitary Eng., p. 265, App. D.

Other characteristics of water that are reported in a chemical analysis of a sample—but not included in table 9—are dissolved solids, hardness, pH, specific conductance, and color.

The dissolved solids of a sample represent the approximate quantity of total substances in solution, although the values reported may include some organic matter and water of crystallization. The United States Public Health Service (1946) recommends that the total solids

of a potable water supply should not exceed 500 ppm (table 10), although a supply with 1,000 ppm is acceptable where a better supply is not available. In general, the ground water found in this region contains smaller quantities of dissolved solids than do any other ground waters in the State of Kentucky. The 27 determinations of dissolved solids that are included in this report range from 35 to 1,220 ppm.

The hardness of water, generally caused by compounds of calcium and magnesium and certain other elements in solution, is reported as calcium carbonate ($CaCO_3$). The hardness in equivalence with the bicarbonate and carbonate is called carbonate hardness; the remainder is called noncarbonate hardness. Hard water is usually recognized by the large amount of soap required to produce lather and by the scale of insoluble salts formed when the water is heated. In the present report, waters ranging in hardness from 0 to 60 ppm are considered soft, those between 61 and 120 ppm are medium hard, those between 121 and 200 ppm are hard, and those above 200 ppm are considered very hard. Of the 62 water samples that were analyzed for hardness, 25 were soft, 16 were medium hard, 14 were hard, and 7 were very hard.

The hydrogen-ion concentration, usually expressed in terms of pH, is related to the corrosive characteristics of a water. Water is generally progressively more active towards metal surfaces as the pH decreases below 7, the neutral point. However, at noticeably high pH the activity toward some metal surfaces may also accelerate. The pH values less than 7 indicate acidic characteristics, and those greater than 7 indicate alkaline characteristics.

The specific conductance of water is a measure of the ability of the water to conduct a current of electricity. This ability is due to the dissolved constituents which ionize. The conductance varies with the concentration and degree of ionization of the constituents and with the temperature of the water. It provides a convenient means of showing the concentration of dissolved solids in the water.

The true color of the water is the color after the suspended matter has been removed. Most persons object to color in water for domestic purposes because of its unpleasant appearance, and color may stain white fabrics in the wash. Color in water is also objectionable in many industrial uses of water where it will affect the value of the product.

Unlike most areas in Kentucky, there are no records of salt water being encountered to depths as great as 3,000 feet in the Paleozoic rocks underlying the Jackson Purchase. The chemical quality of the water contained in the four aquifers underlying all or parts of the Paducah area differs considerably, as can be seen by a comparison

of analyses of water from the different aquifers. The fact that a noticeable difference does exist is a useful tool for the classification of waters as to their geologic formation in parts of the area where little or no subsurface information can be obtained by other methods.

The U. S. Public Health Service in drinking water standards issued in 1946 states that the common chemical constituents preferably should not exceed the concentrations that are shown in table 10.

TABLE 10.—*Concentrations of dissolved solids in drinking water approved by the U. S. Public Health Service*

Constituent	*Concentration (ppm)*
Iron (Fe) and manganese (Mn) together	0.3
Magnesium (Mg)	125
Sulfate (SO_4)	250
Chloride (Cl)	250
Fluoride (F)	1.5
Total solids	500

A graphical method used by A. M. Piper (1944) to correlate water analyses has been used in the present report. This method is helpful in segregating chemical analyses for critical study as to water-type classification and for source and relative concentrations of dissolved constituents. In this method the chemical constituents are expressed as equivalents per million and the less common ions (potassium, fluoride, nitrate) are grouped with the major three cations or anions with which they are generally associated (potassium with sodium, and fluoride and nitrate with chloride). The three major cation groups (Ca, Mg, Na) and the three major anion groups (HCO_3, SO_4, Cl) are then expressed as a percentage of the total cation or anion equivalents.

The trilinear diagram contains three fields for plotting, a cation field at the lower left, an anion field at the lower right, and a diamond-shaped field above. The percent reacting values of the three cation groups (Ca, Mg, Na) are plotted in the lower left field so that one resultant point is obtained within the triangle. The percent reacting values of the three anion groups are plotted as a single point in the lower right field. The two points thus obtained are projected to an intersection point in the diamond-shaped field above to obtain the final point classification. The point in the diamond-shaped field indicates the overall chemical character of the water. Plots of chemical analyses of water from the Paducah area are included in figures 21, 22, 23 and 25. Only the diamond-shaped field is shown in these plots.

Plots of comprehensive analyses are shown by a circle, with the diameter of the circle indicating the amount of dissolved solids in parts per million. Plots of partial analyses are indicated by an "X."

The positions of the plots of partial analyses are subject to some error, as the percent of certain cations (sodium plus potassium) is based on values obtained by the difference between the sum of the equivalents of the anions and the sum of the equivalents of calcium and magnesium as calculated from the hardness.

Chemical quality is also shown graphically in figures 20 and 24. The left column of cations and the right column of anions are equal in height. In these diagrams potassium is grouped with the sodium, and small quantities of fluoride and nitrate are included with the chloride. When the nitrate content is more than 10 ppm it is shown separately in solid black.

A more detailed discussion of ground-water quality in the Paducah area, with interpretations of the data presented in figures 20 to 25, is contained in the section "Water-bearing formations."

WATER-BEARING FORMATIONS

A brief summary of the water-bearing characteristics of the different geologic formations in the Paducah area is presented in table 11. Plate 8, which shows the availability of ground water, presents the basic hydrologic data determined in this report. The depth to water, the quality of water, and the quantity of water available for domestic wells are given. In using the map, one should find his approximate location and determine its topographic situation (upland, hill slope, or bottoms). Under the corresponding area pattern in the explanation is a description of the hydrologic properties of the aquifer.

The surficial deposits over the entire Paducah area consist of Quaternary alluvium derived from older deposits and of loess of Quaternary age. About 70 percent of the wells in the area obtain water from the surficial alluvial deposits and from the gravel of Pliocene(?) age. The remaining 30 percent of the wells obtain water from the underlying Holly Springs sand and Ripley formation.

Enough water for domestic use can generally be obtained from shallow wells anywhere in the area; larger supplies can probably be obtained from deeper wells in the Holly Springs sand and the Ripley formation.

Although some of the deeper wells in the Paducah area bottom on bedrock, none actually receives its supply from the bedrock. If the Mississippian limestone and chert under the Paducah area are water-bearing to the same extent as elsewhere in the Jackson Purchase, they should be capable of yields of as much as 100 gpm. Usually good aquifers are encountered at fairly shallow depths in the Paducah area, thus drilling to bedrock is unnecessary.

TABLE 11.—*Geologic formations in the Paducah area, Kentucky, and their water-bearing characteristics*

Era	System	Series	Group	Formation	Thickness (feet)	Character	Water-bearing characteristics
Cenozoic	Quaternary	Recent		Alluvium	0–100	Clay, silt, sand, gravel, stream-deposited.	Yields moderate amounts of water to wells; water generally hard, with high iron content; dissolved solids relatively high.
		Pleistocene		Loess	0–15	Silt, gray to buff; scattered chert and quartz pebbles.	Yields little or no water; increases runoff in many areas.
	Tertiary	Pliocene(?)		Gravel	0–50	Gravel, subangular chert pebbles with a few pebbles of quartzite and limestone. Sand matrix iron stained and cemented in part.	Furnishes moderate amounts of water to rural wells. Iron generally low; hardness and dissolved solids low to moderately high.
		Eocene	Claiborne	Holly Springs sand	0–150	Sand, fine- to coarse-grained, rounded to subrounded quartz; lenses of plastic clay; iron-indurated beds at the contacts of the sand and clay.	Yields as much as several hundred gallons per minute. Hardness and dissolved solids generally low; iron, low to high.
		Paleocene	Midway	Porters Creek clay	0–200	Clay, very fine textured, light- to dark-gray; interbedded, fine, silty micaceous sands.	Acts as barrier to hold up water in overlying aquifers; sandy beds may yield some water to dug wells.
Mesozoic	Cretaceous	Upper Cretaceous		Ripley formation	0–250	Sand, brown to gray, very fine- to medium-grained; interbedded medium- to dark-brown micaceous clays.	Yields as much as several hundred gallons per minute. Water generally high in iron content; soft to moderately hard.

RIPLEY FORMATION

The Ripley formation, the deepest unconsolidated formation in this area, is the source of water for 62 of the 1,757 wells inventoried. Twenty-three of these wells are in or near Reidland, 30 are in the vicinity of Lone Oak, 6 are in the valley of Clarks River, and 3 are west of Paducah. The wells in this aquifer range in depth from 42 to 500 feet; 70 percent of them are less than 300 feet deep. About half of the wells in Reidland which tap this aquifer are less than 100 feet deep. The capacities of pumps on wells finished in this aquifer range from 3 to 113 gpm; the capacities of most of them range from 5 to 10 gpm. Chemical analyses indicate that the water pumped from this aquifer is predominantly of the calcium magnesium bicarbonate type. It is soft to moderately hard and high in iron content.

STRATIGRAPHY

The Ripley formation, in its type locality at Ripley, Tippah County, Miss., consists of calcareous and glauconitic sands, sandy clays, impure limestones, and marls of Late Cretaceous age (Stephenson, 1914). The formation has a large areal extent and crops out in southern Illinois, southeastern Missouri, western Kentucky, western Tennessee, central Mississippi, Alabama, and Georgia.

In Kentucky, the Ripley crops out or is covered by a mantle of alluvium and loess in a band about 6 miles in width which roughly parallels Kentucky Lake. Especially good exposures are at New Concord, Calloway County, and in the vicinity of Hardin and Fairdealing, Marshall County. The upper Ripley contact with the Porters Creek clay is exposed at the Tennessee River bridge, 5 miles southeast of Paducah, in McCracken County. The Ripley formation, which, in the Paducah area, rests on the Paleozoic bedrock floor, dips about 20 to 30 feet per mile to the southwest.

In the Paducah area, the upper part of the Ripley formation contains interbedded medium- to dark-brown micaceous clays and brown fine to very fine silty sands (pl. 10*A*). The lower part of the Ripley consists of brown to gray fine- to medium-grained angular quartz sand, which is usually micaceous. Much of this sand is free of silt, clay, and surface stains. The Ripley is 255 feet thick in well 8840–3700–7 (p. 203), a few miles southwest of Paducah.

Although the Ripley is of marine origin farther south, no evidence of marine life has been found in the Paducah area. A few traces of carbonaceous material have been found in some of the well samples, and leaf prints are in clays of the Ripley near Benton, Ky. Cementation by iron is common in many exposures. Iron also stains the formation a red or orange color on weathered exposures, whereas fresh samples from well cuttings are gray and brown.

LABORATORY DETERMINATIONS OF WATER-BEARING PROPERTIES

The hydrologic properties of samples of sand from two typical exposures of the sand of the Ripley formation were determined (table 4). The samples were obtained at exposures outside the Paducah area where the formation contains more clastic rocks than within the area.

Samples 6 and 7 were collected at New Concord, Calloway County, 44 miles southeast of Paducah. The material sampled was a red fine-grained well-sorted sand. Sample 6, a vertical sample, had a porosity of 43.4 percent and a coefficient of permeability of 318; sample 7, a horizontal sample, had a porosity of 45.7 percent and a coefficient of permeability of 782. The particle-size distribution curves for these samples are shown in figure 7.

Samples 8 and 9 were collected 4.5 miles east of Hardin, Marshall County, 31 miles southeast of Paducah. The material sampled was a red fine-grained well-sorted slightly micaceous sand. Sample 8, a vertical sample, had a porosity of 42.5 percent and a coefficient of permeability of 380; sample 9, a horizontal sample, had a porosity of 46.4 percent and a coefficient of permeability of 600. (See fig. 7.)

The results of the determinations made on these samples indicate that the sand at these localities is well sorted and that it has a fairly high porosity and coefficient of permeability as compared with other sands in western Kentucky and western Tennessee. These samples, however, probably are not representative of the Ripley formation in all parts of the Paducah area. Microscopic examination of bailer samples from wells 8840–3700–7 and 8840–3705–234 indicates that most of the sand at depth within the Paducah area contains more silt and clay than the undisturbed samples from outside the Paducah area that were analyzed in the laboratory. The silt and clay are so fine grained that they make it difficult to develop wells in the upper part of the Ripley formation in most of the Paducah area. Further drilling, however, may indicate areas in the vicinity of Paducah where thicker beds of sands comparable to those at New Concord and Hardin occur.

OCCURRENCE OF GROUND WATER

Water may enter the Ripley formation in the Paducah area by percolation downward through the overlying formations and possibly by direct recharge in the small outcrop area. There are not enough records of water levels in the Ripley to indicate definitely the areas of recharge. The small exposures, such as the interbedded medium- to dark-brown micaceous clays and brown fine to very fine silty sands cropping out along the Tennessee River, 5 miles southeast of Paducah, are not highly permeable.

Comparison of fluctuations of water levels in several wells in the Ripley formation suggests that the movement of water is toward the Ohio and Tennessee Rivers. Water levels in two wells (fig. 8), plotted in feet above mean sea level, indicate that the hydraulic gradient is toward the Tennessee River and that the ground water discharges to the river. However, two points on the piezometric surface do not indicate the precise direction of ground-water movement. There is also the possibility that the water level in one or both of these wells may be influenced by water entering from one of the higher aquifers.

Water in this aquifer occurs under artesian conditions caused by the confining clay in the upper part of the Ripley formation and by the Porters Creek clay above it. The depth to water and the height to which it will rise in a well under artesian pressure depend upon topography and geology. Reported water levels in wells in the vicinity of Reidland range from 30 to 100 feet below land surface; reported water levels in wells in the Clarks River bottoms, west of Reidland, range from 15 to 70 feet below land surface; reported water levels in the wells in and near Lone Oak range from 30 to 150 feet below land surface.

Measurements of water levels in this formation have been made in observation wells since October 1950. The influence of river stage and precipitation on water levels in wells 8830–3700–87 and 8840–3700–8, penetrating the Ripley formation, is shown in figure 8. The hydrographs show a decreased magnitude of fluctuation with increased distance from the river. The water-level fluctuations in well 8830–3700–144 similarly reflect changes in river stage and precipitation. Correlation of the record of water-level fluctuations in well 8835–3700–243 with river-stage and precipitation records is not apparent.

AVAILABILITY OF GROUND WATER

Wells finished in the Ripley formation are of three types: drilled, dug, and bored. Of the 50 wells in this aquifer which were inventoried, 39 are drilled wells ranging in depth from 64 to 500 feet; 9 are dug wells ranging in depth from 42 to 98 feet; 2 are bored wells, 52 and 70 feet deep.

The amount of water withdrawn from the Ripley formation through wells in the Paducah area is generally small. About 90 percent of all wells which tap this aquifer are used for domestic supplies; about 10 percent are used for commercial or school supplies. Of the 50 wells inventoried, 76 percent are equipped with pumps; the remainder are equipped with bailers or buckets. The capacities of pumps on wells taking water from this formation range from 3 to 113 gpm; most of them yield from 5 to 10 gpm. Inasmuch as none of the wells

are reported to pump dry, these pump capacities do not represent maximum yields of the aquifer. Yields of the formation to wells at public and industrial water-supply installations in other parts of the Jackson Purchase are moderate to large, ranging from 60 gpm at the public supply in Hazel to 850 gpm at the public supply in Murray.

CHEMICAL CHARACTER OF THE WATER

Results of comprehensive analyses of 9 samples and partial analyses of 5 samples of water from the Ripley formation in the Paducah area are given in tables 7 and 12 and shown graphically in figures 20 and 21.

Although none of the plots on figure 21 are of sodium chloride waters, the scatter of the plots suggests a mixture of calcium magnesium bicarbonate waters and sodium chloride waters, with the calcium magnesium bicarbonate type predominating. Because the water from the Ripley is generally low in total dissolved solids, a small variation in parts per million of a given ion may make a marked change in the plot on figure 21. One sample (8835–3700–163), with a relatively high sulfate content, plots outside the general group.

TABLE 12.—*Summary of analyses of water from the Ripley formation in the Paducah area, Kentucky*

[Chemical constituents in parts per million]

Characteristics and constituents	Maximum	Minimum	Average	Median	Number of determinations
Temperature (°F.)	64	54	58	59	12
Silica (SiO_2)	27	4.5	9.6	9.0	9
Iron (Fe)	14	.05	4.6	2.6	14
Manganese (Mn)	.42	.00	.12	.03	6
Calcium (Ca)	49	11	35	42	9
Magnesium (Mg)	13	4.5	8.3	8.5	9
Sodium (Na)	30	3.7	17	17	6
Potassium (K)	5.8	2.0	4.2	4.6	6
Bicarbonate (HCO_3)	168	42	124	124	14
Sulfate (SO_4)	38	4.0	17	17	14
Chloride (Cl)	72	1.3	31	26	14
Fluoride (F)	.4	.0	.2	.2	14
Nitrate (NO_3)	1.0	.0	.3	.1	14
Dissolved solids:					
Sum	269	68	192	227	9
Residue on evaporation at 180°C	275	76	194	220	9
Hardness as $CaCO_3$:					
Calcium, magnesium	151	33	120	145	14
Noncarbonate	33	0	14	12	9
Total acidity as H_2SO_4					1
Specific conductance at 25°C (micromhos)	505	99.3	335	375	14
pH	7.9	6.2		7.4	9
Color (cobalt scale)	5	1	2	2	9

Water from the Ripley formation is soft to moderately hard and high in iron content. In comparison with water from other aquifers in the area, it is harder than that from the Holly Springs sand, about the same hardness as that from the gravel of Pliocene(?) age, and softer than that in the Quaternary alluvium. The iron content of water from the Ripley formation is higher than that from any other aquifer

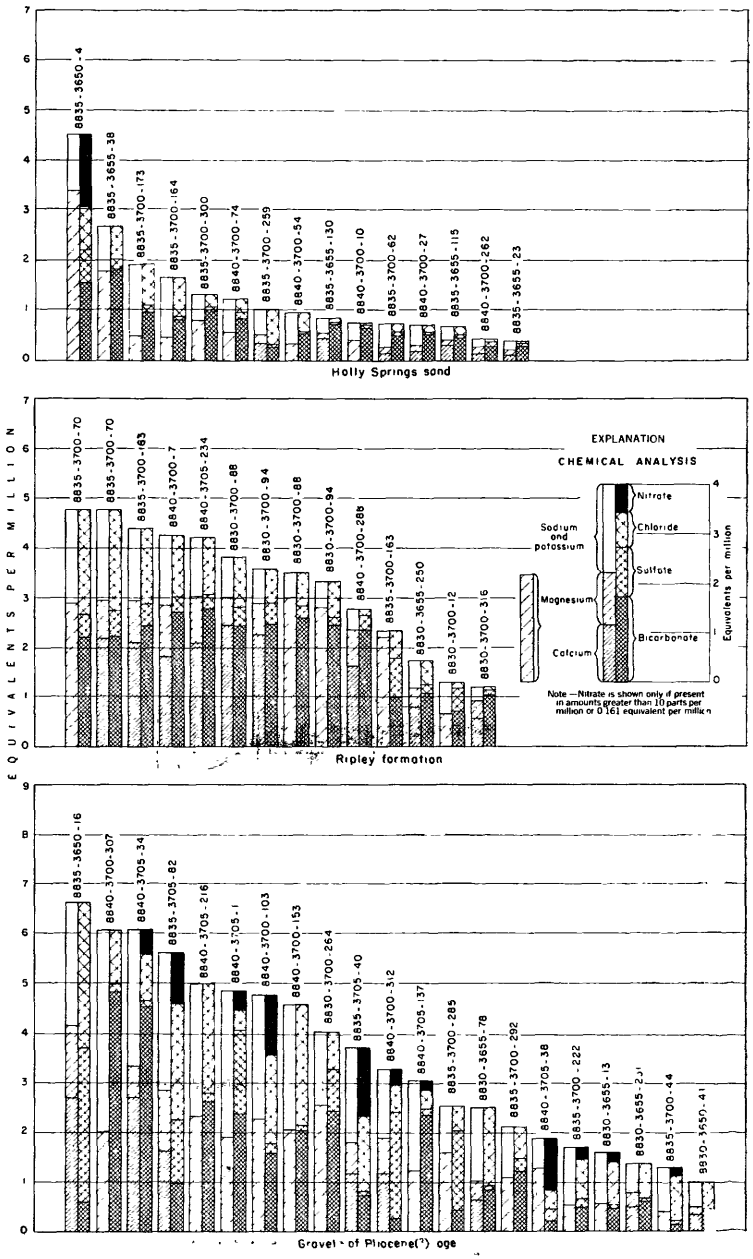
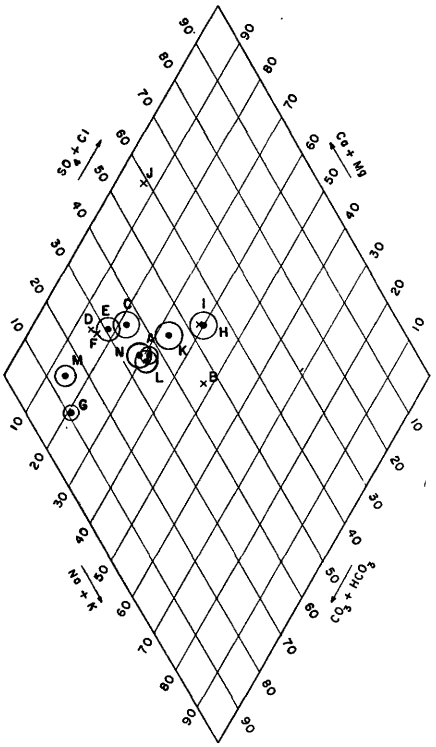


FIGURE 20.—Chemical character of water in the Holly Springs sand, Ripley formation, and gravel of Pliocene(?) age in the Paducah area, Kentucky.

in the area. Almost all the waters from the Ripley formation which were sampled contained objectionable amounts of iron. The water from the Ripley ranges from slightly alkaline to slightly acidic on the pH scale, with a median pH value of 7.4. It is generally more alkaline than the water from either the Holly Springs sand or the gravel of Pliocene(?) age.



EXPLANATION

⊙

Area of circle indicates concentration in parts per million, thus:

0 500 1,000 5,000 10,000

Scale of diameters

×

Partial analysis

No	Key	Date	Dissolved solids (ppm)	Depth of hole, in ft
8830-3655-250	A	1-4-54	114	r 250
8830-3700-12	B	11-21-50		r 365
8830-3700-88	C	11-21-50	220	r 296
8830-3700-88	D	7-3-51		r 296
8830-3700-94	E	11-21-50	199	r 226
8830-3700-94	F	7-5-51		r 226
8830-3700-316	G	1-5-54	76	r 167
8835-3700-70	H	11-21-50	275	r 333
8835-3700-70	I	7-3-51		r 333
8835-3700-163	J	1-5-54		r 200
8835-3700-183	K	1-4-54	245	r 436
8840-3700-7	L	1-4-54	221	r 385
8840-3700-288	M	11-19-52	166	r 300
8840-3705-234	N	1-5-54	234	r 353

r = reported

FIGURE 21.—Classification of chemical character of water from the Ripley formation in the Paducah area, Kentucky.

PORTERS CREEK CLAY

The Porters Creek clay, a generally dense and impervious clay lying above the Ripley formation, does not yield water to wells in the Paducah area, but it is important as a confining bed between the Ripley formation below it and the Holly Springs sand, the gravel of Pliocene(?) age or the alluvium above it.

STRATIGRAPHY

The Porters Creek clay, named for exposures along Porters Creek, Hardeman County, Tenn., is a very fine textured laminated well-jointed clay which contains minor amounts of white mica (Safford, 1864, p. 361, 368). The thickness of this formation in the Paducah

area ranges from 20 feet in the vicinity of Reidland to 160 feet in Lone Oak. When it is wet, the clay is black to slate gray, but it becomes light gray upon drying. Two of the most characteristic features of the Porters Creek are its conchoidal fracture and the way in which it breaks into square or rectangular blocks upon drying (pl. 10*B*). The Porters Creek, the only formation of the Midway group recognized in Kentucky, is of Paleocene age. It occurs in western Tennessee and Kentucky, southwestern Illinois, southeastern Missouri, eastern Mississippi and southwestern Alabama.

In western Kentucky, the Porters Creek clay lies to the west of and parallels the outcrop area of the Ripley formation. It is covered by a mantle of alluvium and loess in most places, but good exposures occur on Rockhouse Creek 6.5 miles north of Murray and on McCulloch Creek 2 miles southwest of New Providence in Calloway County; on Kentucky Highway 348 near New Harmony Church about 5.5 miles southeast of Symsonia in Marshall County; and on the east side of Clarks River 0.6 mile southwest of Reidland in McCracken County. The dip of the Porters Creek clay in the Paducah area, measured on an easily identified glauconitic horizon within the formation, ranges from 14 to 28 feet per mile to the southwest.

The Porters Creek clay in western Kentucky is a fine-textured light- to dark-gray clay which is slippery when wet. Interbedded with the clay are thin laminae of fine silty micaceous sands which are generally gray to yellowish white. The lower 35 to 40 feet of the Porters Creek contains several sandy glauconitic beds which are fossiliferous in some areas. Marine pelecypods have been found in outcrops of this zone and foraminifers have been found in both outcrop and well cuttings. The Porters Creek clay is the only Tertiary sediment of marine origin in western Kentucky; all others are of continental origin.

The Porters Creek clay has well-developed bedding and two sets of well-developed joints at right angles. In some exposures small sandstone dikes a few inches thick can be seen. The dikes are evidently due to the injection of sand into fissures and joints opened up by earth movements. These movements occurred during the Paleocene soon after the beds were deposited. Disturbances at a later date produced slickensides on some of the dikes.

OCCURRENCE OF GROUND WATER

Water enters the Porters Creek clay in the Paducah area through the overlying formations. The rate of infiltration of water into the Porters Creek clay is generally low because this formation is relatively dense and impervious. The rate of infiltration into the clay, however, is somewhat greater in areas where the clay is fractured or jointed,

A. RIPLEY FORMATION

Interbedded clay and sand in Ripley formation at Tennessee River bridge, 5 miles southeast of Paducah, Ky.

B. PORTERS CREEK CLAY

Exposure of Porters Creek clay on southwest side of Kentucky Highway 348, 16 miles southeast of Paducah, Ky., showing characteristic conchoidal fracture and blocky weathering.

HOLLY SPRINGS SAND

Exposure of Holly Springs sand, 11 miles south of Paducah, Ky., showing bed of clayey sand underlain by black clay and overlain by gravel of Pliocene(?) age.

or where it contains thin beds or dikes of fine sand or clayey sand.

Water probably moves through this formation, from the Holly Springs sand or gravel and sand of Pliocene(?) age above to the Ripley formation below, because of the difference in head between the upper and lower aquifers. The rate of flow of water through the Porters Creek clay depends upon the permeability of the formation and the difference in head in overlying and underlying aquifers. The rate of flow through joints and sandy dikes is undoubtedly higher than the rate of flow through the dense unjointed clay.

Most of the water which moves through this formation discharges into the Ripley formation below. Seven of the wells inventoried for this report, ranging in depth from 32 to 80 feet, are finished in the Porters Creek clay, although they derive little or no water from the clay. These wells are located where the water-saturated materials above the clay are thin or where they contain only small amounts of water. Excavation of the wells into the Porters Creek clay increases the storage space within the wells. In this way, the amounts of water which accumulate in the wells between periods of pumping may be increased.

AVAILABILITY OF GROUND WATER

The Porters Creek clay is not used as a source of water supply in the Paducah area.

HOLLY SPRINGS SAND

The Holly Springs sand, unconformably overlying the Porters Creek clay in about 40 percent of the Paducah area, is the source of water for 289 of 1,757 wells inventoried. The wells in this aquifer range in depth from 7 to 110 feet. The water from the Holly Springs sand is generally of excellent quality for domestic or industrial use.

STRATIGRAPHY

The Holly Springs sand of Eocene age occurs in Mississippi, western Tennessee, and western Kentucky. At its type locality at Holly Springs, Marshall County, Miss., the formation is composed of coarse-grained crossbedded sands which are white, yellow, or red on the outcrop and gray or green in the subsurface (Lowe, 1913, p. 23–25). The Holly Springs was formerly regarded as the middle formation of the Wilcox group. However, in ground-water investigations in Mississippi, G. F. Brown (1947, p. 34) determined that the outcrops of sand at the type locality are equivalent to the Meridian sand member of the Tallahatta formation of basal Claiborne age, and in Mississippi the Holly Springs is now regarded as a member of the Tallahatta formation. In Kentucky, however, the Tallahatta is not recognized, and the Holly Springs is considered to be of formational rank.

Although the Holly Springs sand underlies a large part of western Kentucky, there are few exposures because of a thick mantle of gravel, alluvium, and loess. The maximum thickness of the Holly Springs sand in the Paducah area is about 150 feet, although the greatest thickness exposed is only about 30 feet. The best exposures are in stream gullies, road and railroad cuts, and active clay pits. In western Kentucky exposures occur 0.25 mile east of Backusburg in Calloway County; along the East Fork of Clarks River in Marshall County; near Freemont and Melber, on Turkey Branch 5.5 miles southwest of Symsonia, and in the Coleman Cut of the Illinois Central Railroad in McCracken County; in railroad cuts 1.25 miles north and 2 miles south of Lowes and in the clay pits near Hickory and Pryorsburg in Graves County; and along the Mississippi River bluffs near Wickliffe in Ballard County.

The Holly Springs sand rests unconformably upon the eroded surface of the Porters Creek clay. The formation is overlain by a mantle of sand and gravel of Pliocene(?) age and Quaternary loess (pl. 11). The dip in the Paducah area is a few feet per mile to the southwest.

The formation consists of lenticular bodies of sand and clay and a basal clay conglomerate. The sands are composed of fine to coarse rounded to subrounded quartz with minor amounts of feldspar, muscovite, and iron oxides. They may be gray, brownish yellow, or purple. Lenses of cemented sand occur in places. The lenticular bodies of clay range considerably in both texture and color. Textures range from smooth to gritty, depending on the amount of coarse clastic material present. The color may be white, yellow, gray, or black, depending on the amounts of lignite and iron oxide present. A few concretions of pyrite and marcasite occur in the clay bodies.

Leaf impressions and lignitized wood indicate a nonmarine origin of the Holly Springs sand. Crossbedding in the coarser sands and jointing in some of the clays are the only noticeable structural features in the formation.

LABORATORY DETERMINATIONS OF WATER-BEARING PROPERTIES

The hydrologic properties of samples of sand from two exposures of the Holly Springs sand were determined. Vertical and horizontal samples were taken at each of two localities. Samples 2 and 3 were collected near Contest Road, 3.2 miles south of Lone Oak; samples 4 and 5 were collected at Coleman Cut, on the Illinois Central Railroad, 12 miles southwest of Paducah. The second locality, outside the area investigated, was selected because of the excellent exposures of the sands which are characteristic of this formation.

The material sampled near Contest Road was a red slightly clayey coarse-grained quartz sand. As shown in table 4, sample 2, a vertical sample, had a porosity of 35.6 percent and a coefficient of permeability of 164; sample 3, a horizontal sample, had a porosity of 39.8 percent and a coefficient of permeability of 54. The particle-size distribution curves for these samples are shown in figure 7.

The material sampled at Coleman Cut was a yellow-brown medium- to fine-grained quartz sand containing only a small amount of clay. Sample 4, a vertical sample, had a porosity of 47.7 percent and a coefficient of permeability of 575; sample 5, a horizontal sample, had a porosity of 47.8 percent and a coefficient of permeability of 561.

The results of the determinations made on these samples show the effect of grain size and sorting of a sand on its water-bearing characteristics. Table 4 shows that the two samples collected near Contest Road, which were not so well sorted as those collected at Coleman Cut, had lower porosities and coefficients of permeability. The large amount of clay in samples 2 and 3 also decreased the porosities and permeabilities of these samples. The samples of sand from Coleman Cut, containing only small amounts of clay, had comparatively high porosities and coefficients of permeability.

OCCURRENCE OF GROUND WATER

Some water reaches the zone of saturation in the Holly Springs sand in the Paducah area by infiltration directly into the aquifer from precipitation, some by stream loss during periods of high flow, and some by percolation through loess and gravel. Water in this aquifer may occur under either water-table or artesian conditions. The slope of the water table or piezometric surface and, therefore, the movement of the water is generally southwestward. Water is discharged from this aquifer chiefly into streams in the area, although some also is lost through evapotranspiration, through leakage to the Ripley formation, and some may move downdip to discharge southwest of the Paducah area. A small amount is withdrawn from wells and discharged through small springs.

Water in this aquifer is under water-table conditions over most of the Paducah area. Water-table conditions occur because this area lies within the recharge zone of the aquifer. Near Lone Oak artesian conditions occur probably because of beds of clay or cemented sand above the zone of saturation. The depth to water in this formation depends upon both topography and geology. Water occurs at depths of 15 to 30 feet on the slopes of the hills and in the smaller valleys where the sand has been thinned by erosion and has not been covered by a great thickness of gravel or loess. These areas, which lie between

350 and 400 feet above mean sea level, are indicated as area 2 on the map showing the availability of ground water (pl. 8). Water in the Holly Springs sand occur at depths of 50 to 80 feet beneath the upland areas, where the greatest thickness of the aquifer is overlain by a thick blanket of gravel and loess. These areas, above 400 feet above mean sea level, are shown as area 1 on plate 8.

Periodic water-level measurements in wells in the Holly Springs sand reflect changes in rate of evapotranspiration, precipitation, and atmospheric pressure. The hydrograph of well 8835–3700–194 (fig. 13), a shallow water-table well in Lone Oak, shows a general rise in water level during the winter, when evapotranspiration is low and precipitation is high. The increased evapotranspiration and decreased precipitation during the growing season, beginning late in May and continuing throughout the summer and early fall, are reflected in the general decline in water level during that period. The hydrograph of well 8835–3700–165, another shallow water-table well nearby, shows this same general trend, although the magnitude of fluctuation is much less than in well 8835–3700–194. The hydrograph of well 8835–3650–6, a deep water-table well, shows responses to evapotranspiration and precipitation similar to those in well 8835–3700–194. Water-level fluctuations in well 8835–3655–121, an artesian well, reflect changes in atmospheric pressure.

AVAILABILITY OF GROUND WATER

Wells finished in the Holly Springs sand are of 4 types: dug, bored, drilled, and driven. Of the 453 wells inventoried 275 are dug wells ranging in depth from 7 to 89 feet, 118 are bored wells ranging in depth from 20 to 105 feet, 59 are drilled wells ranging in depth from 54 to 125 feet, and 1 is a driven well, 21 feet deep.

The amount of water withdrawn from the Holly Springs sand through wells in the Paducah area is small, and most of the wells have been constructed to supply domestic and stock needs. Less than half of the 410 wells in use in this aquifer are equipped with pumps; the remainder are equipped with bailers or buckets. The capacities of the pumps range from 3 to 48 gpm; the capacities of most of them, however, are from 5 to 10 gpm. The largest pump, a turbine pump with a rated capacity of 48 gpm, serves several houses. The lack of a demand for large amounts of water in this area does not permit, at present, an accurate estimate of the maximum rate at which water can be withdrawn from this aquifer.

CHEMICAL CHARACTER OF THE WATER

Results of comprehensive analyses of 7 samples and partial analyses of 8 samples of water from the Holly Springs sand in the Paducah

area are tabulated in tables 7 and 13, and shown graphically in figures 23 and 25.

TABLE 13.—*Summary of analyses of water from the Holly Springs sand in the Paducah area, Kentucky*

[Chemical constituents in parts per million]

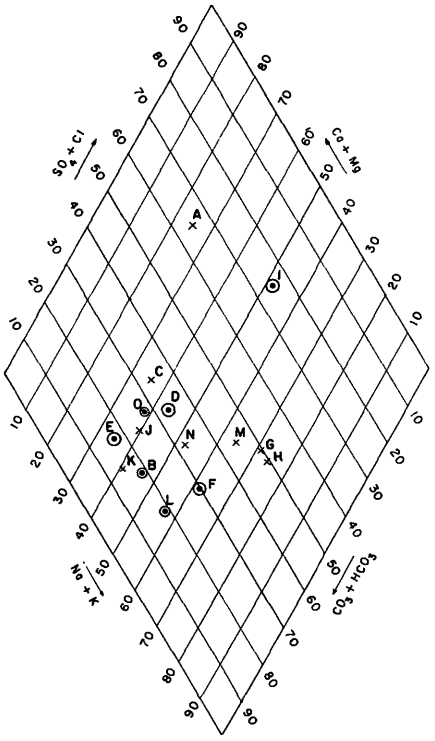
Characteristics and constituents	Maximum	Minimum	Average	Median	Number of determinations
Temperature (°F)	63	52	58	58	13
Silica (SiO_2)	16	6.6	11.7	12	7
Iron (Fe)	12	.05	1.4	.15	15
Manganese (Mn)	.03	.00	.00	.00	7
Calcium (Ca)	9.1	2.6	4.7	3.6	7
Magnesium (Mg)	2.4	1.0	1.5	1.3	7
Sodium (Na)	12	3.4	6.8	6.4	7
Potassium (K)	2.3	.2	.6	.6	7
Bicarbonate (HCO_3)	109	16	46	40	15
Sulfate (SO_4)	30	.4	4.6	1.6	15
Chloride (Cl)	32	1.4	12.2	6.5	15
Fluoride (F)	.2	.0	.07	.1	15
Nitrate (NO_3)	87	.1	8.3	1.9	15
Dissolved solids:					
Sum	72	32	49	45	7
Residue on evaporation at 180°C	84	35	52	50	7
Hardness as $CaCO_3$:					
Calcium, magnesium	170	11	36	24	15
Noncarbonate	12	0	2	0	6
Total acidity as H_2SO_4	24	12	19	22	3
Specific conductance at 25°C (micromhos)	506	37.8	143	121	15
pH	6.5	5.6	----------	6.0	7
Color (cobalt scale)	2	1	1	1	8

Results of analyses of 13 samples plotted on figure 22 show a mixture of calcium bicarbonate and sodium bicarbonate waters. Two of the samples, which do not plot with the general group, are higher in relative amounts of chloride. These two samples are from wells which may obtain water from both the Holly Springs sand and the overlying gravel and sand of Pliocene(?) age. The very low concentration of dissolved solids in the water from the Holly Springs sand and the relatively high concentration of dissolved solids in the water from the gravel of Pliocene(?) age could cause a considerable shift in the plot of these samples even though the amount of water coming from the gravel of Pliocene(?) age was relatively small. The plot of these two samples is in or near the zone of concentration of the plots of the water samples from the gravel of Pliocene(?) age.

The water from the Holly Springs sand is generally of suitable quality for domestic or most industrial uses. It is generally soft, softer and lower in dissolved solids than water from any other aquifer in the Paducah area. The most objectionable feature of the water from the Holly Springs sand is the high iron content. Five of the water samples contained objectionable amounts of iron. The water from the Holly Springs is characteristically acidic with a median pH of 6.0. None of the samples had a pH greater than 6.5.

GRAVEL OF PLIOCENE(?) AGE

The gravel of Pliocene(?) age, which covers all the older formations in this area, is the source of water for 919 of 1,757 wells inventoried. Supplies of water adequate for domestic and stock use may be obtained from this aquifer in most parts of the Paducah area. The wells in this formation range in depth from 6 to 65 feet; most of them are less than 60 feet deep. Water from this aquifer, which is generally



EXPLANATION

Area of circle indicates concentration in parts per million, thus:

0 1,000 5,000 10,000

Scale of diameters

× Partial analysis

No.	Key	Date	Dissolved solids (ppm)	Depth of hole, in ft
8835-3650-4	A	11-20-52		34
8835-3655-23	B	1-4-54	'36	25
8835-3655-38	C	11-20-52		58
8835-3655-115	D	11-20-52	53	r 70
8835-3655-130	E	1-5-54	62	50
8835-3700-62	F	1-5-54	50	38
8835-3700-164	G	1-5-54		r100
8835-3700-173	H	11-19-52		25
8835-3700-259	I	11-19-52	84	62
8835-3700-300	J	1-5-54		39
8840-3700-10	K	1-4-54		29
8840-3700-27	L	11-19-52	46	r 113
8840-3700-54	M	1-4-54		r 71
8840-3700-74	N	11-19-52		r93
8840-3700-262	O	11-19-52	35	r95

r = reported

FIGURE 22.—Classification of chemical character of water from the Holly Springs sand in the Paducah area, Kentucky.

satisfactory for domestic and stock use, is soft to moderately hard and commonly contains only small amounts of iron.

STRATIGRAPHY

Gravel and sand of Pliocene(?) age, which blanket all the older formations, occur as a mantle over most of the eight counties of the Jackson Purchase of western Kentucky. The deposits extend from the region around the Cumberland River, where they rest on the Paleozoic bedrock, westward to the bluffs of the Mississippi River, where they rest on upper Eocene formations. Exposures of the gravel

and sand of Pliocene(?) age are common in gravel pits, railroad and highway cuts, and along the deeper ravines.

The sand, which is medium- to coarse-grained quartz and chert with differing amounts of feldspar, hornblende, and mica, ranges in color from orange to brick red. Iron oxide stains are on individual sand grains. At many horizons the iron oxide is a firm cement. The sand may occur either as a matrix for the gravels or as a separate bedded deposit. In many localities clay pellets ranging from sand to pebble size are found within the sands.

The gravels, which are mostly chert with small amounts of quartzite and limestone, average about ½ to 1 inch in diameter. Some of the larger pebbles are 2 to 3 inches in diameter. Iron oxide coats most of the gravel, giving it a yellow, brown, or black color. In places, however, small lenses of white bleached chert pebbles occur. Some beds of gravel have been cemented into a conglomerate by the action of iron-bearing waters.

The gravels and sands of Pliocene(?) age range in thickness from a few feet to 50 feet, with an average of about 25 to 30 feet. The only visible structures in the deposits are crossbedding in some of the sand layers and the parallel orientation of the long axes of pebbles in some beds.

OCCURRENCE OF GROUND WATER

Recharge to the gravel and sand deposits of Pliocene(?) age comes from rainfall percolating through topsoil and loess or from infiltrating directly into the gravel and sand where topsoil and loess are absent. The occurrence of water in the intergranular pore spaces under water-table conditions depends on the nature and position of the underlying formations. Perched water may be held up by some thin-cemented layers of gravel or sand within the formation. The main body of water, however, is perched on the Porters Creek clay. The water-bearing gravel in Reidland is underlain at depths of 20 to 75 feet by the Porters Creek clay. In Symsonia the gravel is underlain at depths of 25 to 55 feet by this same clay. Water also occurs in the gravel at depths of 15 to 48 feet in upland areas above altitudes of 400 feet (pl. 8). The movement of ground water in this aquifer, controlled by the direction and amount of dip of the underlying formations, is generally to the southwest. Water is discharged from this aquifer principally to streams, and to a smaller extent through visible springs, such as those which occur at the contact of the gravel of Pliocene(?) age with the Porters Creek clay about 1 mile southeast of Reidland (springs 8830–3700–302 and 303). A small amount is discharged to wells.

Periodic water-level fluctuations in wells in the gravel of Pliocene(?) age reflect changes in rate of evaporation and precipitation. The water

level in well 8830–3650–55, as shown in the hydrograph (fig. 9), rose during the winter months when evapotranspiration was low and precipitation was high. The increased evapotranspiration and decreased precipitation during the growing season, beginning late in May and continuing throughout the summer and early fall, resulted in a steady decline in water level during that period. The records of water-level fluctuations in other observation wells in this aquifer show similar seasonal trends.

AVAILABILITY OF GROUND WATER

The 931 inventoried wells which are finished in the gravel of Pliocene(?) age range in depth from 6 to 67 feet. Of the 812 wells that are finished in this aquifer, and are being used, 662 are dug wells ranging in depth from 7 to 65 feet; 146 are bored wells ranging in depth from 6 to 62 feet; 4 are drilled wells ranging in depth from 13 to 67 feet.

This aquifer is the source of most of the water used in this area for domestic and stock purposes. Fifty-three percent of the 812 wells in use in this aquifer are equipped with pumps; the remainder are equipped with bailers or buckets. The capacities of the pumps range from 3 to 40 gpm; the capacities of most of them, however, are from 3 to 10 gpm. Several of the larger pumps, with capacities of 10 to 16 gpm, serve trailer parks; the largest pump of those inventoried, with a capacity of 40 gpm, furnishes water for domestic and irrigation purposes.

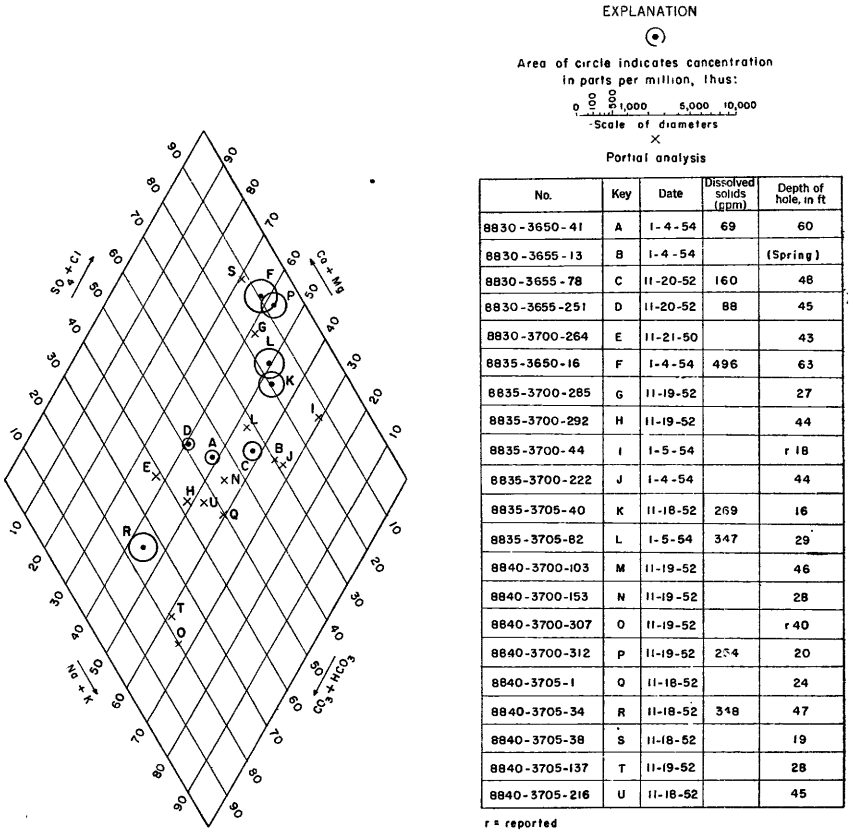
CHEMICAL CHARACTER OF THE WATER

Results of comprehensive analyses of 8 samples and partial analyses of 13 samples of water from the gravel of Pliocene(?) age in the Paducah area are tabulated in tables 7 and 14 and shown graphically in figures 20 and 23.

The spread of the plots on figure 23 is greater than those of the samples from either the Ripley formation or Holly Springs sand. This indicates a greater range in the chemical character of the water in the gravel of Pliocene(?) age than in the underlying formations. The plots are grouped in a pattern which is elongated in the direction of an equal division of sodium plus potassium and calcium plus magnesium. Thus, the ratio of the different cations is comparatively constant whereas the ratio of the different anions is comparatively variable. The plot of the anions in the diagram also shows that the relative amount of sulfate-chloride is greater in the gravel of Pliocene(?) age than in the Ripley or Holly Springs. The wide range in the chemical character of the water in the gravel of Pliocene(?) age as compared

with the range in chemical character of the water in the underlying formations is probably due to greater differences in conditions of recharge and discharge and possibly to greater differences in the composition of the water-bearing materials.

The water from the gravel of Pliocene(?) age is generally satisfactory for domestic use. It is soft to moderately hard, harder and higher



No.	Key	Date	Dissolved solids (ppm)	Depth of hole, in ft
8830-3650-41	A	1-4-54	69	60
8830-3655-13	B	1-4-54		(Spring)
8830-3655-78	C	11-20-52	160	48
8830-3655-251	D	11-20-52	88	45
8830-3700-264	E	11-21-50		43
8835-3650-16	F	1-4-54	496	63
8835-3700-285	G	11-19-52		27
8835-3700-292	H	11-19-52		44
8835-3700-44	I	1-5-54		r 18
8835-3700-222	J	1-4-54		44
8835-3705-40	K	11-18-52	269	16
8835-3705-82	L	1-5-54	347	29
8840-3700-103	M	11-19-52		46
8840-3700-153	N	11-19-52		28
8840-3700-307	O	11-19-52		r 40
8840-3700-312	P	11-19-52	234	20
8840-3705-1	Q	11-18-52		24
8840-3705-34	R	11-18-52	348	47
8840-3705-38	S	11-18-52		19
8840-3705-137	T	11-19-52		28
8840-3705-216	U	11-18-52		45

r = reported

FIGURE 23.—Classification of chemical character of water from the gravel of Pliocene(?) age in the Paducah area, Kentucky

in dissolved solids than the water from the Holly Springs, about equal in hardness to the water from the Ripley formation, and softer than the water from the Quaternary alluvium. Notwithstanding the iron-stained character of the gravel of Pliocene(?) age, the water is lower in average iron content than the water from either the Ripley or Holly Springs. The water from the gravel of Pliocene(?) age is generally acidic, with a median value of pH of 6.0. None of the samples had a pH greater than 7.0

TABLE 14.—*Summary of analyses of water from the gravel of Pliocene(?) age in the Paducah area, Kentucky*

[Chemical constituents in parts per million]

Characteristics and constituents	Maximum	Minimum	Average	Median	Number of determinations
Temperature (°F)	61	54	59	59	16
Silica (SiO_2)	32	7.0	14	12	8
Iron (Fe)	.97	.04	.25	.16	21
Manganese (Mn)	.04	.00	.01	.00	8
Calcium (Ca)	54	7.0	27	23	8
Magnesium (Mg)	15	2.2	7.1	7.5	8
Sodium (Na)	60	11	35	32	8
Potassium (K)	3.8	.9	2.2	1.9	8
Bicarbonate (HCO_3)	294	10	88	51	21
Sulfate (SO_4)	103	1.0	21	6.8	21
Chloride (Cl)	108	12	39	32	21
Fluoride (F)	.3	.0	.1	.1	21
Nitrate (NO_3)	182	.9	30	14	21
Dissolved solids:					
Sum	448	65	243	254	8
Residue on evaporation at 180°C	496	69	254	262	8
Hardness as $CaCO_3$:					
Calcium, magnesium	204	20	80	96	21
Noncarbonate	175	0	53	31	8
Total acidity as H_2SO_4	63	14	35	28	3
Specific conductance at 25°C (micromhos)	751	113	371	366	21
pH	7.0	5.5		6.0	8
Color (cobalt scale)	2	1	1	0	7

LOESS AND LOAM

The loess and loam which cover the older deposits throughout most of the Paducah area do not yield significant amounts of water to wells because of their low permeability. The hydrologic properties of these materials are important, however, because much of the precipitation which falls on the surface percolates through them to the aquifers below.

STRATIGRAPHY

Pleistocene loess and loam form a thin blanket over most of the Jackson Purchase. The loess, a fine, uniform silt deposit, is 40 feet thick along the bluffs of the Mississippi River and thins gradually to the east.

The loess is composed mainly of silt-sized particles of quartz which may range from angular to rounded and from equant to tabular. In addition to quartz, weathered chert, feldspar, hornblende, and mica may occur in differing amounts. Chert and quartz pebbles are found near the base of the loess.

Except for vertical jointing, the loess is structureless. The only fossils in the loess are a few genera of fresh-water gastropods. In many places their shells have been leached, and the calcium carbonate reprecipitated in the form of calcareous concretions.

LABORATORY DETERMINATIONS OF WATER-BEARING PROPERTIES

The hydrologic properties of an undisturbed sample of loess were determined. A vertical sample was taken 12 feet below the surface

of an outcrop located on the east side of U. S. Highway 51, 0.6 mile south of Wickliffe, Ballard County, Ky. This locality is 28.5 miles southwest of Paducah. The vertical sample was taken to indicate the possible rate of recharge of water percolating down through this material.

The material sampled was a buff silty clayey material. As shown in table 4, sample 1, the vertical sample of loess, had a porosity of 44.4 percent and a vertical coefficient of permeability of 2. The particle-size distribution curve for this sample is shown in figure 7.

OCCURRENCE OF GROUND WATER

The loess in the Paducah area probably supplies little or no water to wells, but it is important as one of the controls on the amount of recharge that percolates downward from the surface to the underlying sediments. It may also be important in raising ground water by capillary action to the level where it becomes available to plant roots and is thus discharged by transpiration. The thickness of the loess in the Paducah area ranges from a few feet to as much as 35 feet and may average as much as 10 feet. As described above, the vertical coefficient of permeability of a sample of the loess was 2. This means that in 1 day 2 gallons of water can percolate through a section of this material 1 foot square under a hydraulic gradient of 100 percent at a temperature of 60°F.

Let us assume an acre of nearly flat ground, with 10 feet of loess at the surface. Underlying the loess is several feet of gravel which is considerably more permeable than the loess. The piezometric surface of the water in the gravel is 12 feet below land surface. We will further assume that it has been raining more or less steadily for several days and the loess is completely saturated with water. The rain is falling faster than it can percolate into the loess; therefore a fraction of an inch of water is standing on the surface. Inasmuch as the head at the base of the loess is assumed to be zero, the differential head is about 10 feet. The distance the water travels through the loess is 10 feet. Therefore the hydraulic gradient is about 1.0. The amount of water percolating through the acre of loess under these conditions would equal the permeability times the hydraulic gradient times the area in square feet, or 87,120 gpd. The conditions assumed above are undoubtedly rare or nonexistent in the Paducah area because rains of sufficient intensity and duration to completely saturate the loess are rare.

Let us next assume drought conditions. The moisture content of the sample of loess was 18.7 percent. This sample was obtained in October 1953, after a dry summer. The porosity of the loess was 44.4 percent. Assuming no losses it would take about 31 inches of water

to saturate the full thickness of the loess. However, recharge to the underlying gravel can take place before the loess is completely saturated. The amount of water that the loess will retain against the pull of gravity is called its specific retention. The specific retention of the loess was not determined, but in this fine-grained material it may be as much as 35 percent. If we assume a specific retention of 35 percent, it would take about 20 inches of recharge before any water could percolate through 10 feet of loess to enter the underlying gravel. The average annual evapotranspiration loss in the area is about 30 inches. Assuming no surface runoff but allowing for 30 inches of evapotranspiration, it would take 50 inches of rainfall before any water would enter the underlying gravel. This is more than the average annual precipitation in the area.

The above computations do not take into consideration differences in permeability and porosity in the upper weathered or soil zone of the loess. However, they do show that the loess has a strong influence in regulating the amount of recharge to the ground-water body. A dry year may reduce the amount of recharge to ground water in the following years even though the amount of rainfall in the later years was above normal.

The loess may also affect the rate of ground-water discharge in some areas where depths to water are shallow. Where the water table is above the base of the loess, water may rise several feet in the loess by capillarity and thus be taken up by plant roots and discharged by transpiration.

QUATERNARY ALLUVIUM

The Quaternary alluvium, which occurs in the valleys of all the rivers and streams in the Paducah area, is the source of water for 487 of 1,757 wells inventoried. The wells in this aquifer, which range in depth from 9 to 105 feet, are used to supply water for domestic and stock needs. No large amounts of water are pumped from wells in this aquifer. The water is generally hard to very hard and it may contain objectionable amounts of iron, but it is considered usable for domestic purposes.

STRATIGRAPHY

The Pleistocene and Recent alluvium, the youngest deposit in the Paducah area, consists of sand, gravel, silt, and clay deposited along the flood plains of the streams. Part of this alluvium is composed of reworked sand, gravel, and clay derived from the Cretaceous and Tertiary deposits. The remainder is derived from glacial outwash materials and from erosion of bedrock upstream. Rapid vertical and horizontal gradations characterize the alluvial deposits.

Alluvial deposits occur along all the streams. Those in the valleys of the Ohio, Tennessee, and Clarks Rivers, and Mayfield Creek are

thicker and are composed of coarser materials than those in the valleys of the smaller streams. Cross sections across the Ohio River near Metropolis and Brookport, Ill., and across the Tennessee River near Reidland, Ky. (pl. 9), show the thickness and the rapid horizontal and vertical gradations in the types of material in the alluvial deposits. These deposits reach a thickness of about 100 feet in the valley of the Ohio River and about 75 feet in the valley of the Tennessee River; they thin out to a featheredge in the upper parts of the smaller stream valleys.

OCCURRENCE OF GROUND WATER

Water enters, moves through, and is stored in the pore spaces between particles of gravel, sand, silt and clay which comprise the alluvial deposits in the river and stream valleys in this area. Originating as precipitation, water seeps into the alluvium directly from the surface and, at times, from streams like the Ohio and Tennessee Rivers. Vertical and horizontal changes in the character of the materials result in variations in the rate of movement of water through the alluvium. The slopes of the water table and the movement of the water is generally toward the Ohio and Tennessee Rivers. Water is discharged from this aquifer into the streams when the water level in the alluvium is higher than that in the streams. A small amount of water also is discharged from the alluvial deposits through wells.

The water in these deposits occurs under both water-table and local artesian conditions. The depths to water in the inventoried wells range from 2 to 61 feet below the surface, depending upon geologic, topographic, and hydrologic conditions. The depths to water in the alluvium of the terraces, underlain by the Porters Creek clay and the Holly Springs sand, range from 5 to 25 feet. The depths to water in the alluvium of the flood plain, underlain by silty clays of the Ripley formation, range from 10 to 25 feet.

Water-level fluctuations in wells reflect changes in precipitation, river levels, and evaporation and transpiration. Periodic water-level measurements were made in well 8830–3700–135, located in the alluvium of the Tennessee River, and in well 8830–3655–129, located in the alluvium of Clarks River. Hydrographs (fig. 9) show the close correlation of changes of water level in these wells with changes of stage in the Tennessee River. Water-level measurements in well 8835–3705–6 show a similar correlation with the Ohio River. Other measurements of water-level fluctuations made over a brief period in wells 8830–3655–249 and 8835–3700–135 also show a similar pattern.

AVAILABILITY OF GROUND WATER

Wells in the alluvium are of four types: dug, bored, driven, and drilled. Of the 488 wells inventoried, 295 are dug wells ranging in

depth from 9 to 73 feet; 160 are bored wells ranging in depth from 10 to 64 feet; 25 are driven wells ranging in depth from 20 to 56 feet; 8 are drilled wells ranging in depth from 41 to 105 feet.

Water in quantities suitable for domestic use can be obtained from the Quaternary alluvium in the river bottoms and lowlands below about 350 feet above mean sea level. These areas are included in area 3 on plate 8.

The amounts of water pumped from the alluvium through individual wells in this area are small, and they do not indicate the maximum possible yields. Most wells are used to supply water for domestic and stock needs. Only 32 percent of the 398 wells in use are equipped with pumps; the remainder are equipped with bailers or buckets. The capacities of the pumps range from 1 to 9 gpm. Although no large supplies of ground water are pumped from the alluvium in the Paducah area, it is potentially a big producer. Elsewhere in the Jackson Purchase water is pumped from the alluvium at rates as high as 300 gpm. River recharge may be induced if wells in the alluvium are pumped for long periods at high rates of discharge.

CHEMICAL CHARACTER OF THE WATER

Results of comprehensive analyses of 3 samples and partial analyses of 9 samples of water from the Quaternary alluvium in the Paducah area are tabulated in tables 7 and 15 and shown graphically in figures 24 and 25.

TABLE 15.—*Summary of analyses of water from the alluvium in the Paducah area, Kentucky*

[Chemical constituents in parts per million]

Characteristics and constituents	Maximum	Minimum	Average	Median	Number of determinations
Temperature (°F)	60	46	57	59	11
Silica (SiO_2)	25	7.1	15	14	3
Iron (Fe)	12	.07	.92	.39	12
Manganese (Mn)	.56	.01	.20	.03	3
Calcium (Ca)	68	19	49	59	3
Magnesium (Mg)	72	7.3	36	29	3
Sodium (Na)	243	4.3	86	10	3
Potassium (K)	11	.9	5.1	3.4	3
Bicarbonate (HCO_3)	739	40	243	222	12
Sulfate (SO_4)	556	1.0	126	36	12
Chloride (Cl)	577	2.8	94	19	12
Fluoride (F)	.7	.0	.3	.2	12
Nitrate (NO_3)	40	.1	13	8.5	12
Dissolved solids:					
Sum	1,220	140	599	436	3
Residue on evaporation at 180°C	1,250	440			2
Hardness as $CaCO_3$:					
Calcium, magnesium	898	19	286	235	12
Noncarbonate	220	20	96	48	3
Total acidity as H_2SO_4					0
Specific conductance at 25°C (micromhos)	3,520	199	880	606	12
pH	7.2	6.0		7.1	3
Color (cobalt scale)	2	1	2	2	3

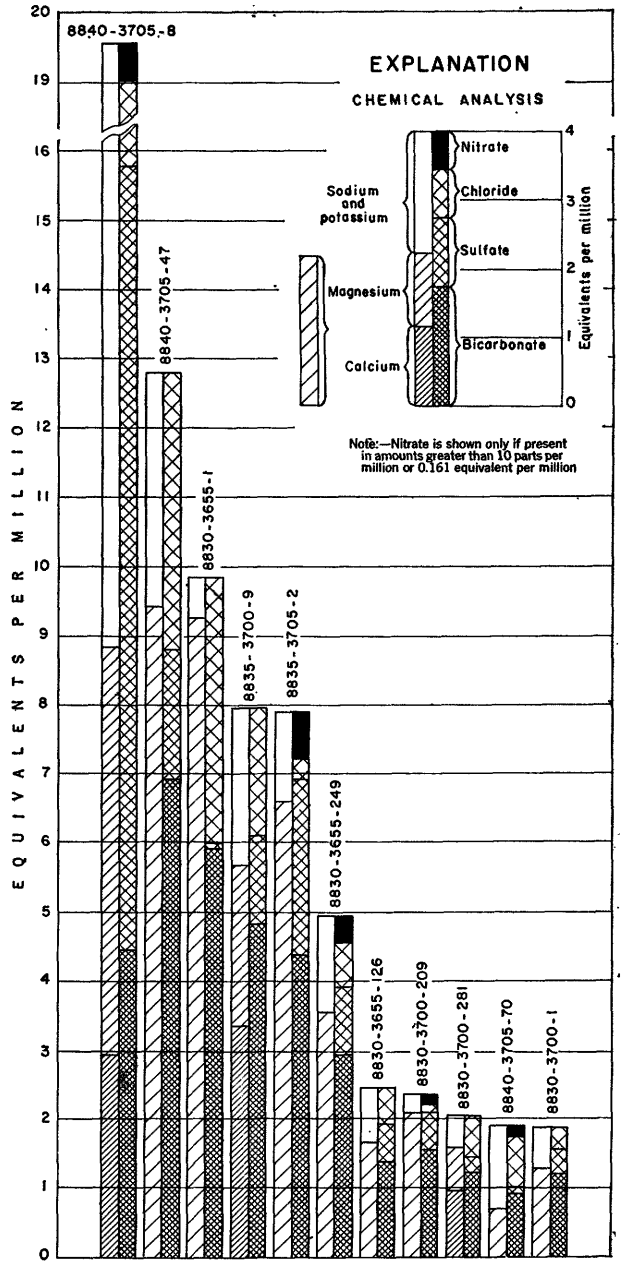
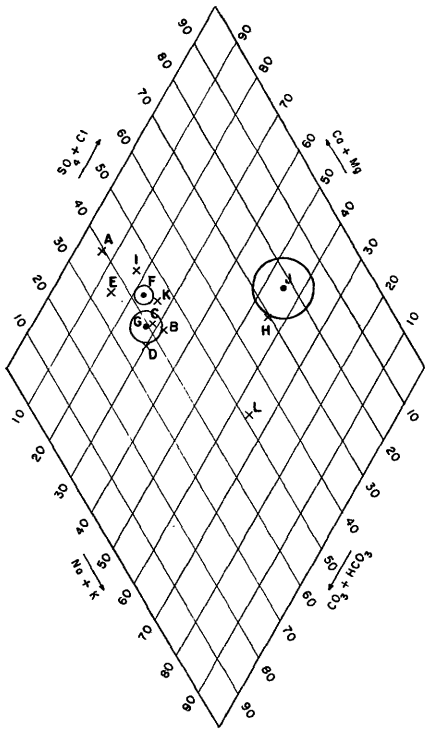


FIGURE 24.—Chemical character of water in the alluvium in the Paducah area, Kentucky.

Results of 9 of the 12 analyses plotted in figure 25 indicate calcium magnesium bicarbonate water, but the grouping of these suggests a mixture with water of considerable sulfate or chloride content. The 3 samples which plot outside the calcium magnesium bicarbonate field are probably mixtures of calcium magnesium bicarbonate and sodium chloride waters.

The water from the Quaternary alluvium is generally usable for domestic and most industrial purposes, although it is harder and



EXPLANATION

Area of circle indicates concentration in parts per million, thus:

0 500 1,000 5,000 10,000

Scale of diameters

× Partial analysis

No	Key	Date	Dissolved solids (ppm)	Depth of hole, in ft
8830-3655-1	A	1-4-54		27
8830-3655-126	B	11-21-50		r 38
8830-3655-249	C	11-20-52		32
8830-3700-1	D	11-20-52		r 42
8830-3700-209	E	11-21-50		r 20
8830-3700-281	F	11-20-52	140	r 42
8835-3700-9	G	1-5-54	440	44
8835-3700-98	H	11-21-50		41
8835-3705-2	I	11-21-50		21
8840-3705-8	J	1-4-54	1250	23
8840-3705-47	K	11-18-52		r 33
8840-3705-70	L	11-18-52		59

r = reported

FIGURE 25.—Classification of chemical character of water from the alluvium in the Paducah area, Kentucky.

contains more dissolved solids than the water from any other formation sampled. It is generally hard to very hard. Six of the twelve water samples contained objectionable amounts of iron.

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BASIC DATA

TABLE 16.—*Records of wells and test*

Type of well: Bo, bored; Dn, driven; Dr, drilled; Du, dug; Je, jetted.
Geologic horizon: Al, Alluvium; Hs, Holly Springs sand; Pc, Porters Creek clay; Pl(?), gravel of Pliocene(?) age; Ri, Ripley formation.

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3650-1	1 mile west of Symsonia	Claude Wallace			Du	38
2	1¼ miles southwest of Symsonia.	J. E. Harris			Du	28
3	do	Lloyd Whitt			Du	43
4	do	Robert Styers			Du	43
5	1½ miles southwest of Symsonia.	John P. Whitt		1947	Du	32
6	do	Jess Whitt			Du	26
7	do	do			Du	14
8	do	Frank Whitt			Du	10
9	do	Mrs. R. McIlwane			Du	12
10	do	Neal Whitt			Du	17
11	1½ miles south of Symsonia	Arlie Whitt			Du	17
12	1¾ miles south of Symsonia	W. E. Hathcock			Du	35
13	2¼ miles south of Symsonia	Brent Reed			Du	30
14	do	Homer Gamble			Du	36
15	do	L. B. Wade			Du	r37
16	2½ miles south of Symsonia	Henry Thomasson			Du	r39
17	2¾ miles south of Symsonia	W. W. Robinson			Du	40
19	do	Clay Ray			Dn	r21
20	3 miles south of Symsonia	L. H. Estes			Du	17
21	do	Will Lawson			Du	56
22	do	J. T. Sutherland			Du	52
23	3 miles southeast of Symsonia.	George Lawson			Bo	35
24	do	Wilson Holmes		1944	Du	44
25	2¾ miles southeast of Symsonia.	O. N. Freeman			Du	26
26	2½ miles south of Symsonia	Theron Freeman			Du	73
27	3 miles southeast of Symsonia.	G. A. Cunningham.			Du	7
28	do	do			Du	15
29	do	N. A. Owens			Du	27
30	½ mile southeast of Symsonia.	V. L. Wallace			Du	31
31	1 mile southeast of Symsonia	Bruce Thompson			Du	37
32	1¼ miles southeast of Symsonia.	O. T. Bell			Du	42
33	1½ miles southeast of Symsonia.	do			Du	54
34	2¼ miles southeast of Symsonia.	William Wilkins		1930	Bo	61
35	2¼ miles south of Symsonia	O. R. Owens			Du	22
36	2 miles southwest of Symsonia.	Howard Kaler		1930	Du	32
37	do	do			Du	13
38	2¼ miles southwest of Symsonia.	N. A. Thomas			Du	39
39	2 miles southwest of Symsonia.	Burt Ray			Du	19
40	2¼ miles southwest of Symsonia.	E. C. Rudd			Du	56
41	2½ miles southwest of Symsonia.	Ray Rudd			Du	60
42	do	R. Vaughan			Du	64
43	do	Ray Langston			Du	61
44	¾ mile southwest of Symsonia.	Daniel Whitt			Du	28
45	do	B. L. Whitt			Du	28
46	½ mile southwest of Symsonia.	Oscar Derrington			Du	30
47	1½ mile southwest of Symsonia.	Charlie Thomas			Du	25
48	1¼ miles southwest of Symsonia.	Marvin Vaughan			Du	37
49	do	Mary Bell			Du	43

holes in the Paducah area, Kentucky

Lift: Bu, bucket; Cy, cylinder; E, electric; H, hand; J, jet; Su, suction; Tu, turbine.
Use: C, commercial; D, domestic; In, industrial; Ir, irrigation; O, observation well; P, public supply; Sp, seepage pit; S, stock; T, test well; Tc, core test; To, oil test; U, unused.

Diameter of well (in)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24		Pl(?)	34.64	Oct. 30, 1950	Bu		D	
24		Pl(?)	24.43	do	Bu		D	Temperature 62°F, Oct. 30, 1950.
24		Pl(?)	40.00	do	Bu		D	
24		Pl(?)	37.18	do			U	Water-level measurements in table 19.
24		Pl(?)	29.69	do	Bu		D	
24		Pl(?)	22.77	do	Bu		D	Temperature 61°F, Oct. 30, 1950.
24		Pl(?)	6.22	do			U	
24		Pl(?)	3.84	do	Bu		D	
24		Pl(?)	2.75	do	Bu		D	
24		Pl(?)	9.75	do	Bu		D	
24		Pl(?)	11.03	do	Bu		D	Temperature 63°F, Oct. 30, 1950.
24		Pl(?)	31.00	do	Bu		D	
24		Pl(?)	24.40	do	J, E	6	D	
24		Pl(?)	32.02	do	Bu		D	
24		Pl(?)	r33		Bu		D	
24		Pl(?)	r34		Bu		D	
24		Pl(?)	34.73	Oct. 30, 1950	Bu		D	
2		Pl(?)	r17		Su, H		D	
24		Pl(?)	5.17	Oct. 30, 1950	Bu		D	
24		Pl(?)	51.12	do	Bu		D	
24		Pl(?)	48.98	do			U	
8		Pl(?)	27.55	do			U	
24		Pl(?)	38.80	do			U	
24		Pl(?)	7.01	do			U	
24		Pl(?)	67.99	do	Bu		D	
24		Pl(?)	1.27	do	Bu		D	
24		Pl(?)	1.46	do	Bu		S	
24		Pl(?)	22.90	do	Bu		D	
20		Pl(?)	22.25	Oct. 31, 1950	Bu		S	
30		Pl(?)	28.54	do	Bu		D	
24		Pl(?)	37.63	do	Bu		D	
24		Pl(?)	47.54	do	Bu		D	
8		Pl(?)	55.54	do	Bu		D	
24		Pl(?)	15.92	do	Bu		D	
24		Pl(?)	28.91	do	Bu		D	
24		Pl(?)	8.16	do			U	Water-level measurements in table 19.
24		Pl(?)	33.54	do	Bu		D	
24		Pl(?)	12.80	do			U	
18		Pl(?)	51.39	do	Bu		D	Temperature 60°F, Oct. 31, 1950.
24		Pl(?)	55.99	do	J, E	4	D	Chemical analysis in table 7.
24		Pl(?)	60.48	do	J, E	4	D	
24		Pl(?)	57.17	do	J, E	4	D	
24		Pl(?)	23.52	Nov. 1, 1950	Bu		D	
24		Pl(?)	23.70	do	Bu		D	
24		Pl(?)	25.82	do	Bu		D	
24		Pl(?)	21.18	do	Bu		D	
24		Pl(?)	32.43	do	Bu		D	
24		Pl(?)	39.01	do	Bu		D	Temperature 59°F, Nov. 1, 1950.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3650-50	1¼ miles southwest of Symsonia.	Fred Kaler			Du	41
51	1 mile southwest of Symsonia.	Garvin Crockett			Dr	32
52	do	Victor McManus			Du	35
53	do	J. D. Kaler			Du	29
54	¾ mile south of Symsonia	Artell Holshouser.			Dr	r35
55	do	do			Dr	36
56	½ mile southeast of Symsonia.	Clifton Johnson			Dr	53
57	do	C. C. Miller			Dr	r50
58	¾ mile southeast of Symsonia.	L. F. Farmer			Dr	46
59	do	John Draffen			Dr	r40
60	1 mile southeast of Symsonia.	V. G. Lyles			Dr	45
61	do	L. B. Barnes			Dr	52
62	1¼ miles southeast of Symsonia.	Joe Barnes			Dr	r47
63	do	Frank Wallace			Dr	r51
64	do	V. L. Wallace			Dr	49
65	1½ miles southeast of Symsonia.	T. Sullivan			Dr	57
66	½ mile south of Symsonia	Galand Derrington.			Du	31
67	do	Zenabell McManus.			Dr	28
68	do	Edmon Wallace			Dr	33
69	do	Lois Farmer			Dr	21
70	¼ mile south of Symsonia	Clay Reid			Dr	29
71	do	H. C. Frizzell			Dr	28
72	½ mile southeast of Symsonia.	E. Hathcock			Dr	r55
73	do	C. M. Miller			Dr	54
74	½ mile southeast of Symsonia.	Lewis Roach			Dr	r54
75	¾ mile southeast of Symsonia.	Chester Roach			Dr	53
76	do	M. W. Shemwell			Dr	56
77	1 mile southeast of Symsonia.	Walter Crowell			Dr	37
78	do	Lois McManus			Dr	42
79	4 miles southwest of Symsonia.	B. T. Morris			Dr	r18
80	do	C. F. Schmidt			Bc	r62
81	do	Garland Schmidt			Dr	r70
82	3½ miles west of Symsonia	Larence Stroud			Dr	41
83	do	Raymond Whitis		1950	Dr	36
84	3¼ miles west of Symsonia	Solon Whitis			Dr	26
85	3 miles west of Symsonia	C. L. Whitis			Bc	12
86	2¾ miles west of Symsonia	Mrs. Arthur Whitis.			Dr	r32
87	do	Aaron Whitis			Dr	35
88	2½ miles west of Symsonia	J. R. Wilkins			Dr	21
89	do	do			Dr	14
90	2¼ miles west of Symsonia	Estil Wilkins			Dr	21
91	do	do			Dr	18
92	3 miles west of Symsonia	E. J. Karnes			Dr	36
93	2¾ miles west of Symsonia	Harvey Collier			Dr	34
94	do	Edward Davidson			Dr	r35
95	do	C. Stokes			Dr	33
96	do	Hester Collier			Dr	22
97	2¾ miles southwest of Symsonia.	Ted Sawyer			Dr	31
98	do	W. T. Sawyer			Dr	25
99	3 miles southwest of Symsonia.	Ted Sawyer			Dr	21
100	3¼ miles southwest of Symsonia.	Jack Wade			Dr	23
101	do	J. J. Wade			Dr	37
102	do	Rudy Watkins			Dr	r37
103	do	S. J. McGee			Dr	36

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24		Pl(?)	36.17	Nov. 1, 1950	Bu		D	
24		Pl(?)	27.60	do	J, E	6	D	
24	Brown gravel.	Pl(?)	32.74	do	Bu		D	
24		Pl(?)	23.78	do	J, E	8	D	
24	White gravel.	Pl(?)	r31		J, E	6	D	
24			30.71	Nov. 1, 1950			O	Water-level measurements in table 18.
24		Pl(?)	48.70	do	J, E	5	D	
24		Pl(?)	r46	do	J, E	5	D	
24		Pl(?)	42.91	do	Bu		D	
24		Pl(?)	r33		J, E	6	D	
24		Pl(?)	41.95	Nov. 1, 1950	J, E	5	D	
24		Pl(?)	48.62	do	J, E	5	D	
24		Pl(?)	r42		Bu		D	
24		Pl(?)	r45		J, E	5	D	
24		Pl(?)	42.60	Nov. 1, 1950	Bu		D	
24		Pl(?)	53.70	do	Bu		D	
24		Pl(?)	26.83	Nov. 3, 1950	Bu		D	
24		Pl(?)	23.81	do	Bu		D	
24		Pl(?)	28.59	do	Bu		D	
24		Pl(?)	15.57	do	Bu		D	
24		Pl(?)	22.51	do	Bu		D	
24		Pl(?)	21.48	do	Bu		D	
24		Pl(?)	r49		Cy, H		D	
24		Pl(?)	49.62	Nov. 13, 1950	Bu		D	
24		Pl(?)	r50		J, E	4	D	
24		Pl(?)	49.20	Nov. 13, 1950	J, E	4	D	
24		Pl(?)	51.17	do	Bu		D	
24		Pl(?)	33.50	do	Bu		D	
24		Pl(?)	34.28	do	Bu		D	
24		Pl(?)	r10		Bu		D	
8		Pl(?)	r50		Bu		D	
24	Coarse white sand.	Pl(?)	r66		J, E	8	D	
24		Pl(?)	36.99	Oct. 25, 1950	J, E	6	D	
24		Pl(?)	31.70	Oct. 26, 1950	Bu		D	
24		Pl(?)	20.07	do	Bu		D	
6		Pl(?)	4.56	do	Bu		D	
24		Pl(?)	r27		Bu		D	
24		Pl(?)	23.89	Oct. 26, 1950	Bu		D	
24		Al	15.34	do	Bu			
24		Al	6.59	do			U	
24		Al	14.92	do			U	Water-level measurements in table 19.
24		Al	10.01	do	Bu		D	
24	Brown gravel.	Pl(?)	29.69	do	Bu		D	
30		Pl(?)	31.05	do	Bu		D	
24		Pl(?)	r31		Bu		D	
24	White sand.	Pl(?)	23.58	Oct. 26, 1950	Bu		D	
24		Pl(?)	15.61	do	Su, E	6	D	
24		Pl(?)	23.03	do	Bu		D	
30	White sand.	Pl(?)	15.81	do	Bu		D	
24		Pl(?)	14.22	do			U	Water-level measurements in table 19.
18		Pl(?)	16.87	do	Bu		D	
24		Pl(?)	32.01	do	Bu		D	
24		Pl(?)	r32		J, E	6	D	
24		Pl(?)	33.57	Oct. 26, 1950	Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3650-104	3¼ miles southwest of Symsonia.	D. Mack			Du	38
105	do	L. E. Bowes			Du	24
106	3½ miles west of Symsonia	M. C. McClure			Bo	18
107	do	Clyde McClure			Du	38
108	do	Justis Powell			Du	r32
109	3¼ miles southwest of Symsonia.	A. B. Davidson			Du	31
110	3½ miles southwest of Symsonia.	William Davidson		1948	Du	54
111	do	Joe Davidson			Du	44
112	3 miles southwest of Symsonia.	J. P. Collier			Du	31
113	3½ miles southwest of Symsonia.	S. F. Davidson			Du	r55
114	3¾ miles southwest of Symsonia.	Maggie Jones			Du	46
115	do	Paul Holshouser			Bo	52
116	do	H. B. Holshouser			Du	r48
117	3½ miles southwest of Symsonia.	Roxie Holshouser			Du	26
118	do	R. K. Boaz			Bo	r30
119	do	Mrs. W. E. Watkins			Du	31
120	3¼ miles southwest of Symsonia.	L. Boaz			Du	18
121	do	Melvin J. Swatzell			Du	30
122	do	H. B. Thompson			Du	r40
123	3¾ miles southwest of Symsonia.	C. M. McElya			Du	29
124	do	Marion Dove			Bo	r34
125	do	Avery Collier		1950	Du	r36
126	do	Clarence McGee			Du	43
127	3¼ miles southwest of Symsonia.	Riley Burkhardt			Du	32
128	do	Melvin J. Swatzell			Du	15
129	2 miles southwest of Symsonia.	Burt Ray			Du	50
130	2½ miles southwest of Symsonia.	Lee Collier			Du	48
131	do	Jimmy Hopwood			Du	19
132	do	W. O. Tolbert			Du	18
133	do	Riley Burkhardt			Du	12
134	do	Clyde Edwards			Du	11
135	do	Collier Bros. Grocery.			Du	10
136	¾ mile south of Symsonia	Artell Holshouser			Du	37
8830-3655-1	2½ miles north of Symsonia	Lewis Tarham			Du	27
2	2¼ miles north of Symsonia	Earl Freeman			Du	29
3	2 miles north of Symsonia	Paul Ferrell			Du	30
4	1½ miles north of Symsonia	Herman Ham			Du	r15
5	1¼ miles north of Symsonia	E. T. Copeland			Du	31
6	1 mile north of Symsonia	C. C. Williamson			Du	25
7	1¼ miles north of Symsonia	N. N. McGuire			Du	30
8	do	do			Du	r27
9	do	do			Du	r24
10	1 mile north of Symsonia	R. M. Rudolph			Du	r35
11	2½ miles northeast of Symsonia.	Henry Cushenberry.			Du	r32
12	do	Sherman Davis			Du	r33
14	1 mile northwest of Symsonia.	Cliff Reid			Du	22
15	do	Claude Lawson			Du	35
16	do	Fredonia Smith			Du	38
17	1 mile west of Symsonia	D. T. Walter			Du	29
18	Symsonia	H. T. Allcock			Du	44
19	do	Harley Estis		1950	Du	r46
20	do	W. C. Butler		1950	Du	r45

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
20	----------	Pl(?)	31.06	Oct. 26, 1950	J, E	5	D	
24	----------	Pl(?)	17.60	----do----	Bu	----	D	
8	----------	Pl(?)	7.41	Oct. 27, 1950	Cy, H	----	D	
24	----------	Pl(?)	31.02	----do----	Bu	----	D	
24	----------	Pl(?)	r26.5	----------	Bu	----	D	
24	Sand and gravel.	Pl(?)	27.53	Oct. 27, 1950	Bu	----	D	
24	----------	Pl(?)	47.59	----do----	----------	----	U	Water-level measurements in table 19.
24	----------	Pl(?)	35.55	----do----	Bu	----	U	Do.
30	----------	Pl(?)	25.64	----do----	Bu	----	D	
24	----------	Pl(?)	r49.5	----------	J, E	6	D	
24	----------	Hs	39.64	Oct. 27, 1950	Bu	----	D	
8	----------	Hs	44.53	----do----	Bu	----	D	
24	----------	Hs	r43	----------	J, E	5.5	D	
30	----------	Hs	23.30	Oct. 27, 1950	Bu	----	D	
6	----------	Hs	r25	----------	J, E	5	D	
30	----------	Pl(?)	23.61	Oct. 27, 1950	Bu	----	D	
30	----------	Pl(?)	10.97	----do----	----------	----	U	Water-level measurements in table 19.
24	----------	Pl(?)	24.97	----do----	Bu	----	D	
30	----------	Hs	r33.5	----------	Bu	----	D	
30	----------	Hs	24.85	Oct. 27, 1950	Bu	----	D	
8	----------	Hs	29.29	----do----	Bu	----	D	
24	----------	Hs	r31	----------	J, E	6	D	
24	----------	Hs	35.42	Oct. 29, 1950	J, E	7	D	
24	----------	Pl(?)	25.75	----do----	Bu	----	D	
24	----------	Pl(?)	12.17	----do----	Bu	----	D	
24	----------	Pl(?)	44.11	Oct. 31, 1950	Bu	----	D	Altitude, 382 ft above mean sea level. Water-level measurements in table 18.
30	----------	Pl(?)	39.58	----do----	Bu	----	D	
24	----------	Pl(?)	13.80	----do----	Bu	----	D	
24	----------	Pl(?)	12.61	----do----	Bu	----	D	
24	----------	Al	4.65	----do----	Bu	----	D	
24	----------	Al	7.07	----do----	Bu	----	U	
24	----------	Al	5.93	----do----	Su, E	4	D	
24	Sand----	Pl(?)	32.42	Feb. 11, 1954	J, E	5	D,S	Specific capacity in table 6.
24	----------	Al	15.73	Sept. 27, 1950	Bu	----	D	Chemical analysis in table 7.
24	----------	Al	18.84	----do----	Bu	----	D	
24	----------	Al	18.10	----do----	Bu	----	D	
24	----------	Al	r9	----------	Bu	----	D	
24	----------	Pl(?)	26.73	Sept. 27, 1950	J, E	6	D	
24	----------	Pl(?)	21.21	----do----	Bu	----	D	
24	----------	Al	14.98	----do----	Bu	----	D	
24	----------	Al	r16	----------	----------	----	D	
24	----------	Al	r16	----------	Bu	----	D	
24	----------	Pl(?)	r30	----------	Bu	----	D	
24	----------	Al	r24	----------	Bu	----	D	
30	----------	Al	r22	----------	Bu	----	D	
24	----------	Pl(?)	5.64	Oct. 30, 1950	Bu	----	D	
24	----------	Pl (?)	30.26	----do----	Bu	----	D	
24	----------	Pl (?)	33.83	----do----	Bu	----	D	Temperature 60°F. Oct. 0, 1950.
18	Brown gravel and white sand.	Pl (?)	22.35	----do----	Bu	----	D	
24	----------	Pl (?)	39.44	Oct. 31, 1950	J, E	5.5	D	
24	----------	Pl (?)	r43	----------	J, E	5.5	D	
24	----------	Pl (?)	r42.5	----------	Bu	----	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3655-21	Symsonia	Symsonia Methodist Church.			Du	41
22	do	Edward Crowell			Du	42
23	do	J. C. Wallace			Du	43
24	do	Murrell Humphery.			Du	45
25	½ mile north of Symsonia	Albert McGuire		1914	Du	44
26	do	Ronnie Copeland			Du	37
27	¾ mile north of Symsonia	Meddie Copeland			Du	r24
28	1¾ miles northwest of Symsonia.	John Thomasson			Du	r30
29	do	J. K. Darnell			Du	r32
30	do	S. P. Jefferson			Bo	36
31	¾ mile north of Symsonia	Meddie Copeland		1949	Du	25
32	1 mile north of Symsonia	Mrs. Rudy Copeland.			Du	22
33	do	Joe Copeland			Du	27
34	1¼ miles northwest of Symsonia.	Walter Carter			Du	45
35	do	Otis Roach			Du	43
36	do	Sina Roach			Du	35
37	1 mile northwest of Symsonia.	Claude Carter			Du	38
38	do	E. R. Wyatt			Du	39
39	do	E. C. Roach			Du	37
40	¾ mile northwest of Symsonia.	G. E. Jarvis			Du	31
41	do	William Heath			Du	36
42	1 mile northwest of Symsonia.	E. R. Heath			Du	33
43	do	J. H. Riley			Du	29
44	do	Jack Reid			Du	23
45	do	Fink Davis			Du	36
46	do	Claude Carter			Du	41
47	do	W. M. Davidson			Du	40
48	do	Claude Carter			Du	49
49	¾ mile northwest of Symsonia.	R. L. Styres			Du	49
50	do	Cecil Riley			Du	48
51	do	James Cowell			Du	r48
52	½ mile west of Symsonia	Noel Wood			Du	46
53	do	R. L. Styres			Du	41
54	½ mile northwest of Symsonia.	Hearl Wood			Du	32
55	Symsonia	Edwin Reid		1950	Du	28
56	do	Sarah Lyles			Du	29
57	do	Frank Johnson			Du	37
58	do	Walter Reid			Du	44
59	do	Rose Styers		1910	Du	37
60	do	Hill Barnes			Du	40
61	do	Dewey McCluer			Du	38
62	do	Molly Redwine			Du	46
63	do	C. L. Pember			Du	43
64	do	Claude Miller			Du	r43
65	do	George Lyles			Du	38
66	do	do			Du	39
67	do	J. E. Hathcock			Du	29
68	do	C. J. Baker			Du	36
69	do	W. R. Burnett			Du	30
70	do	Leo Barnes			Du	29
71	do	Graves County Board of Education, Symsonia High School.		1936	Du	r45
72	do	E. G. Smith			Du	36
73	do	O. T. Powell			Du	38
74	do	D. M. Farmer		1936	Du	r38
75	do	Rudy Frizzell			Du	41
76	do	George Jackson			Du	49
77	do	Robert Wyman			Du	44
78	do	R. J. McClure			Du	48

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Pl (?)	37.46	Oct. 31, 1950	J, E	6	D	
24	----------	Pl (?)	36.94	----do----	J, E	6	D	
24	----------	Pl (?)	38.67	----do----	Bu	------	D	
24	----------	Pl (?)	40.28	----do----	J, E	6	D	
24	----------	Pl (?)	38.80	----do----	J, E	7	D	
24	----------	Pl (?)	33.64	----do----	----------	------	U	Water-level measurements in table 19.
24	----------	Pl (?)	r21	----------	Bu	------	D	
30	----------	Al	r13	----------	Bu	------	D	
30	----------	Al	r22	----------	Bu	------	D	
8	----------	Al	16.36	Oct. 2, 1950	----------	------	U	
24	Brown gravel.	Pl (?)	20.78	Oct. 31, 1950	----------	------	U	Water-level measurements in table 19.
24	----------	Pl (?)	16.79	----do----	Bu	------	D	
24	----------	Pl (?)	22.00	----do----	Bu	------	D	
24	----------	Pl (?)	42.24	Nov. 1, 1950	Bu	------	D	
24	----------	Pl (?)	36.77	----do----	Bu	------	D	
24	----------	Pl (?)	29.40	----do----	Bu	------	D	
24	----------	Pl (?)	34.10	----do----	----------	------	U	Water-level measurements in table 18.
24	----------	Pl (?)	33.10	----do----	Bu	------	D	
24	----------	Pl (?)	32.16	----do----	J, E	8	D	
24	----------	Pl (?)	27.94	----do----	J, E	8	D	
24	----------	Pl (?)	31.53	----do----	J, E	8	D	
24	----------	Pl (?)	26.38	----do----	Bu	------	D	
24	----------	Pl (?)	25.23	----do----	Bu	------	D	
24	----------	Pl (?)	20.75	----do----	Bu	------	D	
24	----------	Pl (?)	32.86	Nov. 1, 1950	Bu	------	D	
24	----------	Pl (?)	38.99	----do----	----------	------	U	
24	----------	Pl (?)	35.76	----do----	Bu	------	D	
24	----------	Pl (?)	43.95	----do----	J, E	5.5	D	
24	----------	Pl (?)	45.10	----do----	Bu	------	D	
24	----------	Pl (?)	43.40	----do----	J, E	6	D	
24	----------	Pl (?)	r44	----------	J, E	6	D	
24	----------	Pl (?)	41.84	Nov. 1, 1950	J, E	5.5	D	
24	----------	Pl (?)	36.91	----do----	Bu	------	D	
24	----------	Pl (?)	25.81	Nov. 3, 1950	J, E	6	D	
24	----------	Pl (?)	23.55	----do----	Bu	------	D	
24	----------	Pl (?)	24.41	----do----	Bu	------	D	
24	----------	Pl (?)	32.35	----do----	Bu	------	D	
24	----------	Pl (?)	38.51	----do----	J, E	6	D	
24	----------	Pl (?)	33.24	----do----	J, E	6	D	
24	----------	Pl (?)	35.47	----do----	J, E	6	D	
24	----------	Pl (?)	33.51	----do----	Cy, E	7	D	
24	----------	Pl (?)	41.76	----do----	Bu	------	D	
24	----------	Pl (?)	39.25	----do----	J, E	6	D	
24	----------	Pl (?)	r38	----------	J, E	6	D	
24	----------	Pl (?)	33.65	Nov. 3, 1950	J, E	6	D	
24	----------	Pl (?)	34.92	----do----	J, E	6	D	
24	----------	Pl (?)	25.57	----do----	Bu	------	D	
24	----------	Pl (?)	30.66	----do----	Bu	------	D	
24	----------	Pl (?)	26.11	----do----	J, E	8	D	
24	----------	Pl (?)	24.76	----do----	J, E	9	D	
24	----------	Pl (?)	r42	----------	J, E	5.5	P	
24	----------	Pl (?)	32.04	Nov. 3, 1950	J, E	8	D	
24	----------	Pl (?)	34.47	Nov. 13, 1950	J, E	6	D	
24	----------	Pl (?)	r34	----------	Bu	------	D	
24	----------	Pl (?)	40.43	Nov. 13, 1950	J, E	6	D	
24	----------	Pl (?)	45.69	----do----	J, E	6	D	
24	----------	Pl (?)	40.91	----do----	Bu	------	D	
24	----------	Pl (?)	43.34	----do----	J, E	5.5	D	Chemical analysis in table 7.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3655-79	Symsonia	Farmers Supply Co.			Dr	44
80	do	Ora Wallace			Dr	49
81	do	A. B. Reid			Dr	r48
82	do	do			Dr	48
83	do	J. R. Crowell			Dr	38
84	do	A. B. Reid			Dr	48
85	do	Bryan Riley			Dr	46
86	do	Frank Wallace			Dr	50
87	do	H. C. Carter			Dr	48
88	do	Mrs. H. Edmunds			Dr	53
89	do	Ora Wallace			Dr	55
90	do	Othal Barnes			Dr	48
91	do	Mary Styres			Dr	45
92	do	A. H. Wadkins			Dr	r55
93	do	W. L. Barnes			Dr	r52
94	do	Andy Edwards			Du	50
95	do	Mrs. T. Reid			Du	53
96	do	Victor Freeman			Du	52
97	do	F. O. Elzy			Du	53
98	do	C. C. Chambers			Du	43
99	do	C. Roach			Du	r43
100	1¼ miles northeast of Symsonia.	Earnest Elrod			Du	32
101	do	Homar Freeman			Du	30
102	do	I. R. Bolton			Du	40
103	do	Merle Bolton			Du	43
104	1 mile east of Symsonia	P. P. Lawrence			Du	42
105	do	Wallace Roach			Du	r42
106	½ mile southeast of Symsonia.	P. L. Barnes			Du	r55
107	½ mile east of Symsonia	C. B. Reid			Du	43
108	Symsonia	Vern Simmons			Du	r44
109	do	Ozel Holmes			Du	r48
110	1½ miles southwest of Reidland.	H. H. Shaffer			Du	20
111	1¾ miles southwest of Reidland.	do			Du	20
112	do	do			Du	9
113	do	Hubert Smith			Du	r14
114	2 miles southwest of Reidland.	H. H. Shaffer			Du	19
115	do	Mildred Smith			Du	r21
116	2¼ miles southwest of Reidland.	Mary Ellen Kelley			Du	33
117	do	Bradley Smith			Du	r24
118	do	do			Du	r18
119	do	Fred Meadows			Du	14
120	do	Elmer Freels			Du	41
121	2½ miles southwest of Reidland.	J. S. Smith			Du	r30
122	do	Hoyt Jett			Du	r30
123	2¼ miles southwest of Reidland.	Mrs. M. B. Smith			Du	r17
124	do	Curtis Housden			Du	r26
125	do	Herman Humphery.			Du	40
126	2½ miles southwest of Reidland.	J. N. Reid			Du	r38
127	do	Late Cunningham.			Du	21
128	3¼ miles southwest of Reidland.	Carlos Litchfield			Bo	36
129	3¼ miles south of Reidland	Jack Reid			Du	38
130	3¾ miles south of Reidland	Mrs. Rosline Carter.			Bo	41
131	4¼ miles northwest of Symsonia.	J. T. Payne			Du	r12
132	do	A. E. McReynolds			Du	r28
133	4 miles northwest of Symsonia.	Homer McCloud			Du	r22
134	3¼ miles northwest of Symsonia.	Owne Ivie			Du	r36

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24		Pl (?)	39.90	Jan. 6, 1954	J, E	6	D	Specific capacity in table 6.
24		Pl (?)	43.90	Nov. 13, 1950	J, E	5.5	D	
24		Pl (?)	r45		J, E	5.5	D	
24		Pl (?)	46.52	Nov. 13, 1950			U	
24		Pl (?)	34.47	do	J, E	6	D	
24		Pl (?)	44.14	do	Bu		D	
24		Pl(?)	41.61	do	Bu		D	
24		Pl(?)	45.57	do	Bu		U	Water-level measurements in table 19.
24		Pl(?)	45.00	do	J, E	6	D	
24		Pl(?)	49.22	do	Bu		D	
24		Pl(?)	50.19	do	Cy, E	5	D	
24		Pl(?)	43.89	do	J, E	7	D	
24		Pl(?)	39.75	do			U	
24		Pl(?)	r50		Bu		D	
24		Pl(?)	r50		J, E	6	D	
24		Pl(?)	45.74	Nov. 13, 1950	J, E	6	D	
24		Pl(?)	49.13	do	Bu		D	
24		Pl(?)	44.99	do	J, E	6	D	
24		Pl(?)	50.77	do	Bu		D	
24		Pl(?)	39.65	do	Bu		D	
24		Pl(?)	r40		J, E	9	D	
24		Pl(?)	30.06	Nov. 13, 1950	J, E		D	
24		Pl(?)	26.25	do	J, E		D	
24		Pl(?)	35.43	do	J, E		D	
24		Pl(?)	38.23	do	J, E		D	
24		Pl(?)	37.22	do	J, E		D	
24		Pl(?)	r38		Cy, E	4	D	
24		Pl(?)	r52.5		J, E	6	D	
24		Pl(?)	38.29	Nov. 13, 1950	J, E	9	D	
24		Pl(?)	r41		J, E	9	D	
24		Pl(?)	r43		J, E	6	D	
24		Al	15.84	Sept. 27, 1950	Bu		D	
24		Al	17.52	do	J, E	9	D	
24		Al	6.98	do	Bu		D	
24		Al	r11.5		Bu		D	
24		Al	6.35	Sept. 27, 1950			U	
24		Al	r10		Bu		D	
24		Al	7.43	Sept. 27, 1950			U	
24		Al	r16		Bu		D	
24		Al	r9		Bu		S	
24		Al	6.86	Sept. 27, 1950	Bu		D	
30		Al	10.25	do			U	Water-level measurements in table 19.
24	Sand	Al	r28.5		J, E	6	D	
24		Al	r20		Bu		D	
24		Al	r7		Bu		D	
24		Al	r10		Bu		D	
36		Al	11.68	Sept. 27, 1950	Bu		D	Specific capacity in table 6.
24	Sandy loam(?).	Al	r23.5		Bu		D	Chemical analysis in table 7.
24		Al	14.35	Oct. 2, 1950			U	
8		Al	23.54	do	Bu		D	
24		Al	25.52	do			U	Water-level measurements in table 18.
8		Al	24.69	do	Bu		D	
24		Al	r1		Bu		D	
30		Al	r22		Bu		D	
30		Al	r16		Bu		D	
24		Al	r26		Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3655-135	3¾ miles northwest of Symsonia.	H. Ballance			Du	r18
136	do	H. D. Williams			Du	12
137	do	W. D. Dunaway			Du	33
138	do	J. F. McClure			Du	13
139	3½ miles northwest of Symsonia.	Jessie McIntosh			Du	28
140	3¼ miles northwest of Symsonia.	William Crowley			Du	31
141	do	Harold Boaz			Du	17
142	3 miles northwest of Symsonia.	Sam Hill			Du	30
143	do	C. M. Reed			Du	r30
144	3¼ miles northwest of Symsonia.	G. W. Miller			Du	15
145	3 miles northwest of Symsonia.	do			Du	24
146	3¼ miles northwest of Symsonia.	W. Bell			Du	11
147	3¾ miles northwest of Symsonia.	Herschel Lee			Du	11
148	3½ miles west of Symsonia	J. C. Richards			Du	30
149	do	J. H. Brooks			Du	r32
150	3½ miles northwest of Symsonia.	Arley McEntosh			Du	r29
151	do	M. G. Thompson			Du	r32
152	do	do			Du	29
153	2¾ miles northwest of Symsonia.	Roy Styers			Du	r40
154	2½ miles northwest of Symsonia.	Mrs. A. Lamb			Du	33
155	do	L. O. Wetherington.		1927	Bo	30
156	2 miles northwest of Symsonia.	Alton Drafden			Du	r32
157	2¼ miles northwest of Symsonia.	Joe Penner			Du	r32
158	do	Andy Edwards			Du	31
159	3 miles west of Symsonia	Joe Lawson			Du	28
160	2¾ miles west of Symsonia	Leo Poat			Du	20
161	3 miles west of Symsonia	Mrs. H. Warford			Du	19
162	do	Wilson Brooks			Du	34
163	do	Harry Warford			Du	29
164	2¾ miles west of Symsonia	R. L. Campbell			Du	20
165	2½ miles west of Symsonia	do			Du	8
166	3 miles west of Symsonia	George Duncan			Du	28
167	3¼ miles west of Symsonia	D. F. Walton			Du	28
168	do	O. W. Colley			Du	31
169	3½ miles west of Symsonia	William Rogers			Du	r31
170	do	Ray Kelling			Du	r35
171	3¼ miles west of Symsonia	Will Taylor			Du	30
172	do	Jack Taylor			Du	33
173	3½ miles west of Symsonia	Ruth Emery			Bo	31
174	2½ miles northwest of Symsonia.	C. W. Bell			Du	18
175	3 miles northwest of Symsonia.	C. C. Lyles			Du	10
176	1¾ miles west of Symsonia	R. L. Reid			Du	16
177	2¾ miles northwest of Symsonia.	State of Kentucky	Kentucky Department of Highways.	1950	Dr	r69
178	do	do	do	1950	Dr	r51
179	do	do	do	1950	Dr	r51
180	1½ miles south of Reidland	Bob York			Du	69
181	do	Roy Jackson			Du	r46
182	do	Bobby Anderson			Du	r43

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Al	r8	----------	J, E	6	D	
24	----------	Al	6.80	Oct. 4, 1950	Bu	------	S	
24	----------	Pl(?)	26.45	----do------	J, E	8	D	
24	----------	Pl(?)	4.08	Oct. 16, 1950	Bu	------	D	
24	----------	Pl(?)	24.10	----do------	Bu	------	D	
24	----------	Pl(?)	25.56	----do------	J, E	8	D	
24	----------	Pl(?)	7.20	----do------	J, E	8	D	
24	----------	Pl(?)	23.42	----do------	Bu	------	D	
24	----------	Pl(?)	r27	----------	Bu	------	D	
24	----------	Al	5.29	Oct. 16, 1950	Bu	------	D	
24	----------	Al	5.74	----do------	Bu	------	D	
24	----------	Al	3.40	----do------	Bu	------	D	
24	----------	Al	9.39	----do------	Bu	------	D	
24	----------	Pl(?)	22.65	Oct. 18, 1950	Bu	------	D	
24	White gravel	Pl(?)	r26	----------	Bu	------	D	
24	----do------	Pl(?)	r23.5	----------	Bu	------	D	Depth to top of water-bearing bed, 24 ft; thickness, 5+ ft.
24	----------	Pl(?)	r27.5	----------	Bu	------	D	
18	----------	Pl(?)	24.95	Oct. 25, 1950	Bu	------	D	
24	----------	Al	r32	----------	Bu	------	S	
24	----------	Al	17.59	Oct. 2, 1950	J, E	6	D	
8	----------	Al	18.13	----do------	Bu	------	D	
30	----------	Al	r20	----------	Cy, H	------	U	
30	----------	Al	r20	----------	Bu	------	D	
30	----------	Al	18.33	Oct. 2, 1950	------	------	U	
24	----------	Pl(?)	18.69	Oct. 25, 1950	Bu	------	D	
24	----------	Pl(?)	9.64	----do------	Bu	------	U	Temperature 62°F, Oct. 25, 1950.
20	----------	Pl(?)	16.68	----do------	Bu	------	D	
24	----------	Pl(?)	28.54	----do------	J, E	6	D	
24	----------	Pl(?)	27.86	----do------	Bu	------	D	Temperature 59°F, Oct. 25, 1950.
24	----------	Pl(?)	13.23	----do------	Bu	------	D	
24	----------	Pl(?)	2.34	----do------	Bu	------	D	
24	----------	Pl(?)	22.72	----do------	Bu	------	D	Temperature 60°F, Oct. 25, 1950.
24	----------	Pl(?)	22.00	----do------	Bu	------	D	
24	----------	Pl(?)	25.94	----do------	Bu	------	D	Temperature 59°F, Oct. 25, 1950.
24	----------	Pl(?)	r26	----------	Bu	------	D	
24	----------	Pl(?)	r30	----------	J, E	6	D	
24	----------	Pl(?)	24.29	Oct. 25, 1950	Bu	------	D	Temperature 59°F, Oct 25, 1950.
24	Red gravel	Pl(?)	28.90	----do------	Bu	------	D	Depth to top of water-bearing bed, 30 ft; thickness, 3+ ft.
8	----------	Pl(?)	26.18	----do------	Bu	------	D	
24	----------	Al	12.39	Oct. 30, 1950	Bu	------	D	
24	----------	Al	5.50	----do------	Bu	------	D	
24	----------	Al	2.30	----do------	Bu	------	D	
2	----------	Al	----------	----------	--------	------	Te	Log on p. 179.
2	----------	Al	----------	----------	--------	------	Te	Do.
2	----------	Al	----------	----------	--------	------	Te	Do.
30	----------	Pl(?)	52.80	Sept. 26, 1950	Cy, E	4	D	
24	Brown gravel	Pl(?)	r44	----------	J, E	4	D	
24	----------	Pl(?)	r39	----------	J, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3655-183	1½ miles south of Reidland	Wade Bolton			Du	r57
184	2 miles south of Reidland	Mrs. S. Roland			Du	49
185	1¾ miles southeast of Reidland.	Bob York			Dr	r1,910
186	1½ miles southeast of Reidland.	E. L. Bean			Du	r62
187	do	Hobert Riley			Du	52
188	do	M. V. Miller		1903	Du	r60
189	1¾ miles southeast of Reidland.	W. L. Austin		1940	Du	46
190	do	C. A. Cope			Du	r47
191	do	K. M. Carnahan			Du	r65
192	do	Gobel Riley			Du	52
193	do	L. F. Story			Du	r50
194	do	O. R. Nickell			Du	r55
195	do	Vernon Miles			Du	r57
196	2 miles southeast of Reidland.	Prestly Gates			Du	r57
197	do	W. P. Smith			Du	r58
198	do	Thomas Arant			Du	r53
199	do	Ottie Goheen			Du	r55
200	do	J. W. Madrey			Du	r59
201	2¼ miles southeast of Reidland.	T. E. Vasseur			Du	56
202	do	Leslie Burchart			Du	r62
203	do	Harry Colson			Du	r62
204	do	J. E. Rudolph			Du	66
205	2¾ miles southeast of Reidland.	Rube Hope	Alexander		Dr	r145
206	2½ miles southeast of Reidland.	O. W. Rawlinson			Du	47
207	2¾ miles southeast of Reidland.	Floyd Cole			Du	55
208	do	H. L. Forbis			Du	r53
209	do	R. E. Watson			Du	r50
210	2½ miles southeast of Reidland.	W. B. Manley			Du	53
211	do	Ben McNatt			Du	51
212	2¾ miles southeast of Reidland.	C. Jeter			Du	r60
213	do	Joseph Perdue			Du	r42
214	do	Lenord Shaffer			Du	r42
215	do	A. J. Brigman			Du	51
216	2½ miles southeast of Reidland.	Elvis Downs			Du	38
217	2¾ miles southeast of Reidland.	R. L. Bailey		1930	Du	43
218	3 miles southeast of Reidland.	Tom Walford			Du	52
219	do	George Vasseur			Du	51
220	do	Ed McEntosh			Du	56
221	do	N. M. Owens			Du	46
222	do	E. V. Dyson			Du	47
223	3¼ miles southeast of Reidland.	Lee Nickels			Du	r50
224	do	G. Wallace			Du	r60
225	do	O. L. Parash			Du	r60
226	do	Albert Laigent			Du	48
227	do	W. E. Hester			Du	49
228	do	Ed Ross			Du	53
229	3½ miles southeast of Reidland.	Henry Hester			Du	44

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24		Pl(?)	r53	Apr. 10, 1953	J, E	6	D	
24		Pl(?)	41.95	Sept. 26, 1950	Bu		D	
8			36.94	do			To	Altitude, 412 ft above mean sea level. Bedrock at 405 ft. Water-level measurements in table 19.
24		Pl(?)	r59		J, E	4	D	
24		Pl(?)	46.08	Sept. 26, 1950	Bu		D	
24	Brown gravel.	Pl(?)	r57		J, E	6	D	
24		Pl(?)	41.59	Sept. 26, 1950	J, E	6	D	
24		Pl(?)	r42		J, E	6	D	
30		Pl(?)	r60		Bu		D	
24		Pl(?)	46.41	Sept. 26, 1950	Bu		D	
24		Pl(?)	r45		J, E	6	D	
24		Pl(?)	r51		J, E	6	D	
24		Pl(?)	r53		J, E	6	D	
24		Pl(?)	r53.5		J, E	4	D	
24		Pl(?)	r56		J, E	6	D	
24	Brown gravel.	Pl(?)	r50		Bu		D	Depth to top of water-bearing bed, 30 ft; thickness, 23 ft.
24		Pl(?)	r52		Bu		D	
24		Pl(?)	53.9	Apr. 2, 1953	J, E	5	D	
24		Pl(?)	51.45	Sept. 26, 1950	J, E	6	D	
24		Pl(?)	r59		J, E	5	D	
24		Pl(?)	r58		J, E	6	D	
24	Black gravel.	Pl(?)	60.55	Apr. 2, 1953	J, E	4	D	
4		Ri	r60		Cy, E	5	D	
24		Pl(?)	42.33	Apr. 2, 1953	Bu		D	
24		Pl(?)	50.53	Sept. 26, 1950	Cy, E	5	D	
24		Pl(?)	r50		Bu		D	
30	Brown gravel.	Pl(?)	r47		Bu		D	Depth to top of water-bearing bed, 10 ft; thickness, 40 ft.
24		Pl(?)	47.49	Apr. 10, 1953	Bu		D	
24		Pl(?)	45.49	do	J, E	6	D	
24		Pl(?)	r56		Bu		D	
24		Pl(?)	r39		Bu		D	
24		Pl(?)	r38		J, E	8	D	
24		Pl(?)	42.39	Sept. 26, 1950	Bu		D	
24	Sand and black gravel.	Pl(?)	29.30	Apr. 10, 1953	Bu		D	
30		Pl(?)	38.87	do	Bu		D	
24		Pl(?)	45.98	Sept. 26, 1950	Bu		D	
24		Pl(?)	47.45	Apr. 10, 1953	J, E	7	D	
24		Pl(?)	44.76	do	Bu		D	
24		Pl(?)	41.11	do	Bu		D	
24		Pl(?)	42.38	do	Bu		D	
24		Pl(?)	r45		Bu		D	
24		Pl(?)	r55		Bu		D	
24		Pl(?)	r49.5		J, E	6	D	
23		Pl(?)	45.07	Apr. 10, 1953	J, E	6	D	
24		Pl(?)	43.77	do	Bu		D	
24		Pl(?)	48.59	do	Bu		D	
24		Pl(?)	39.44	do	Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3655-230	3¼ miles southeast of Reidland.	McCracken County Board of Education, Shady Grove School.			Du	48
231	do	Willie Holt			Du	19
232	do	Carl Cronch			Du	37
233	3¼ miles southeast of Reidland.	C. P. McEntosh			Du	33
234	3½ miles southeast of Reidland.	do			Du	32
235	3¼ miles southeast of Reidland.	G. B. McEntosh			Du	24
236	do	E. A. Grace			Du	r25
237	3½ miles southeast of Reidland.	C. Thompson			Du	60
238	3¾ miles southeast of Reidland.	John Franklin			Du	28
239	4 miles southeast of Reidland.	William McDaniel			Du	32
240	3¼ miles southeast of Reidland.	Will Butler			Du	27
241	3 miles north of Symsonia	Les Thorp			Du	31
242	2¾ miles north of Symsonia	Frank Davis			Du	32
243	3 miles north of Symsonia	Ruth Nece			Du	r25
244	2¾ miles northeast of Symsonia.	Roy Parham			Du	r32
245	2¾ miles southeast of Reidland.	Charley Overstreet.			Du	32
247	2¾ miles northwest of Symsonia.	State of Kentucky	Kentucky Department of Highways.	1950	Dr	r63
248	do	do	do	1950	Dr	r64
249	2¼ miles southwest of Reidland.	J. T. Strong			Du	32
250	1¾ miles south of Reidland	H. H. Blair	R. B. Elrod	1951	Dr	r250
251	2¾ miless outheast of Reidland.	R. L. Bailey, Jr.	Bill Owens	1952	Du	45
252	3 miles southeast of Reidland.	E. J. Stewart	do	1952	Du	46
253	3¼ miles southeast of Reidland.	Charles Sheppard			Du	44
254	1½ miles northwest of Symsonia.	State of Kentucky	Kentucky Department of Highways.	1953	Dr	r65
8830-3700-1	1½ miles northeast of Reidland.	Mrs. A. H. Shemwell.			Bo	r42
2	1¾ miles northeast of Reidland.	do			Dn	r39
3	2 miles northeast of Reidland.	do			Dn	r41
4	2¼ miles northeast of Reidland.	Molly Dooly			Bo	r40
5	do	Jack Colson			Dn	r42
6	1¼ miles southeast of Reidland.	G. A. Smith	G. A. Smith	1920	Du	54
7	do	W. B. Hodges			Du	r60
8	do	Ellis Lamb			Du	r60
9	1 mile southeast of Reidland.	R. B. Walters			Du	61
10	do	Elmer Lamb			Du	r60
11	do	Claude Lamb			Du	r60

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Pl(?)	43.73	Apr. 10, 1953	Bu	------	P	
24	----------	Pl(?)	2.72	----do----	Bu	------	D	
24	----------	Pl(?)	32.97	Sept. 26, 1950	Bu	------	D	
24	----------	Pl(?)	28.94	----do----	Bu	------	D	
24	----------	Pl(?)	28.77	Apr. 10, 1953	Bu	------	D	
24	----------	Pl(?)	8.74	Sept. 26, 1950	-------	------	U	Water-level measurements in table 19.
24	----------	Pl(?)	r19	----------	J, E	6	D	
24	----------	Pl(?)	56.85	Apr. 10, 1953	Bu	------	D	
30	----------	Pl(?)	16.18	Sept. 26, 1950	Bu	------	D	
24	----------	Pl(?)	12.06	Apr. 10, 1953	Bu	------	D	
24	----------	Al	17.28	Sept. 26, 1950	Bu	------	D	
24	----------	Al	12.83	Sept. 27, 1950	Bu	------	D	
24	----------	Al	20.61	----do----	Bu	------	D	
24	----------	Al	r10	----------	Bu	------	D	
30	----------	Al	r20	----------	Bu	------	D	
30	----------	Pl(?)	29.16	Nov. 7, 1950	Bu	------	U	
2	Sand and gravel.	Al	6	----------	-------	------	Tc	Depth to top of water-bearing bed, 60 ft; thickness, 2+ ft. Log on p. 179.
2	----do----	Al	----------	----------	-------	------	Tc	Depth to top of water-bearing bed, 61 ft; thickness, 2+ ft. Log on p. 180.
36	----------	Al	11.70	Oct. 10, 1950	S, E	5	D	Chemical analysis in table 7. Water-level measurements in table 18.
6	Sand------	Rl	175	----------	Cy, E	4	D	Depth to top of water-bearing bed, 245 ft; thickness, 5+ ft. Chemical analysis in table 7. Log on p. 180.
24	Gravel----	Pl(?)	42.02	Nov. 20, 1952	J, E	5	D	Specific capacity in table 6. Chemical analysis in table 7.
24	----do----	Pl(?)	43.94	Apr. 10, 1953	J, E	4	D	
24	----------	Pl(?)	41.41	----do----	Bu	------	D	
2	----------	Pc	----------	----------	-------	------	Tc	Log on p. 181.
6	----------	Al	r34	----------	Cy, H	------	D, S	Chemical analysis in table 7.
2	----------	Al	r31	----------	Cy, H	------	D, S	
2	----------	Al	r34	----------	Cy, H	------	D, S	
6	----------	Al	r32	----------	J, E	6	D	
2	----------	Al	r35	----------	Cy, H	------	D	
36	Gravel----	Pl(?)	48.19	Apr. 2, 1953	Cy, E	3	D	Depth to top of water-bearing bed, 52 ft; thickness, 3+ ft.
24	----------	Pl(?)	r50	----------	J, E	8	D	
24	----------	Pl(?)	r55	----------	Bu	------	D	
36	----------	Pl(?)	54.69	Aug. 23, 1950	Bu	------	D	
24	----------	Pl(?)	r55	----------	Bu	------	D	
30	----------	Pl(?)	r50	----------	Bu	------	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-12	1 mile southeast of Reidland.	Joseph N. Sanders			Dr	r365
13	do	John Kern			Du	r62
14	¾ mile southeast of Reidland.	C. L. Cork			Du	r62
15	do	William Keil			Du	r60
16	do	R. R. Butler			Du	r60
17	do	Dr. C. P. Moseley	Henry Harper	1948	Du	47
18	do	Guy Miller			Du	r50
19	½ mile southeast of Reidland.	Cecil Lisles			Du	r44
20	½ mile south of Reidland	B. P. Griffith			Du	71
21	do	Gordon Brooks			Du,Bo	r98
22	Reidland	J. B. Kelly			Du	r50
23	do	Edgar Heitt			Du	r41
24	do	Guy Edwards			Du	r54
25	do	Roy Dishman			Du	r47
26	do	Willis Cane			Du	r54
27	do	George Thompson			Du	r54
28	do	Douglas Reed			Du	r54
29	do	A. L. Cosby			Du	r46
30	do	H. E. Trevathan			Du	54
31	do	R. J. Dees			Du	48
32	do	do			Du	r62
33	do	Lelon Hopkins			Du	r58
34	do	Nan Holland		1942	Du	r63
35	do	Lee Bowland			Du	r62
36	do	C. R. Copeland		1940	Du	r65
37	do	A. A. Cox			Du	r60
38	do	H. F. Smith			Du	61
39	do	C. H. Richardson			Du	r48
40	do	do	Ode Shelton		Dr	r200
41	do	Vernon Moore			Du	r30
42	do	E. E. Smith		1945	Du	r26
43	do	do			Du	r25
44	do	do		1925	Du	r28
45	do	L. E. Smith			Du	r18
46	do	Karl McAllister			Du	30
47	do	McCracken County Board of Education, Reidland School.	Ode Shelton	1947	Dr	r135
48	do	J. E. Morrow	do		Dr	r155
49	do	W. V. Douglas			Du	18
50	do	do			Du	55
51	1¼ miles southwest of Reidland.	E. C. Miller			Du	r33
52	do	M. V. Blewett			Du	r33
53	½ mile southeast of Reidland.	H. R. Edwards			Du	r50
54	¾ mile southeast of Reidland.	T. B. Edwards			Du	41
55	do	Jack Carson			Du	r50

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
4	----------	Ri	r55	----------	Cy, E	7	D	Depth to top of water-bearing bed, 217 ft; thickness, 148+ ft. Chemical analysis in table 7.
24	Sand and gravel.	Pl(?)	r58	----------	Bu	------	D	
24	----------	Pl(?)	r57	----------	J, E	6	D	
36	----------	Pl(?)	r50	----------	J, E	9	D	
30	----------	Pl(?)	r50	----------	Bu	------	D	
24	Gravel------	Pl(?)	44.62	Apr. 2, 1953	J, E	6	D	Depth to top of water-bearing bed, 18 ft; thickness, 31 ft.
24	----------	Pl(?)	r44	----------	J, E	4	D	
30	----------	Pl(?)	r37	----------	Cy, E	3	D	
24	White sand--	Ri	61.10	Apr. 3, 1953	Cy, E	7	D	Depth to top of water-bearing bed, 62 ft; thickness, 10+ ft. Porters Creek clay from 37 to 62 ft.
4	----------	Ri	r55	----------	Cy, E	6	D	Porters Creek clay from 60 to 140+ ft.
24	----------	Ri	r40	----------	Bu	------	D	
24	----------	Pl(?)	r36	----------	Bu	------	D	
30	----------	Pl(?)	r40	----------	Bu	------	D	
30	----------	Pl(?)	r43	----------	J, E	6	D	
30	----------	Pl(?)	r50	----------	Bu	------	D	
36	----------	Pl(?)	r50	----------	Bu	------	D	
36	----------	Pl(?)	r50	----------	Bu	------	D	
24	----------	Pl(?)	r41	----------	Bu	------	D	
30	----------	Pl(?)	48.76	Aug. 30, 1950	J, E	9	D	
30	----------	Pl(?)	46.00	-----do------	Cy, H	------	U	Altitude, 400 ft above mean sea level. Water-level measurements in table 18.
30	----------	Pl(?)	r58	----------	Cy, E	5	D	
30	----------	Pl(?)	r55	----------	J, E	6	D	
24	----------	Pl(?)	r60	----------	Bu	------	D	
24	----------	Pl(?)	r57	----------	Bu	------	D	
36	----------	Pl(?)	r60	----------	J, E	6	D	
36	----------	Pl(?)	r55	----------	Bu	------	D	Depth to top of water-bearing bed, 52 ft; thickness, 8+ ft.
36	----------	Pl(?)	52.20	Apr. 3, 1953	Cy, E	6	D	
30	Gravel------	Pl(?)	r45	----------	Bu	------	D	Depth to top of water-bearing bed, 13 ft; thickness, 35 ft.
4	Sand-------	Ri	r100	----------	Cy, E	4	D	
24	----------	Pl(?)	r22	----------	J, E	6	D	
24	----------	Pl(?)	r24	----------	Bu	------	D	
36	----------	Pl(?)	r23	----------	Bu	------	D	
36	Gravel------	Pl(?)	r26	----------	J, E	8	D	Depth to top of water-bearing bed, 26 ft; thickness, 4 ft.
36	----------	Pl(?)	r11.00	----------	Bu	------	S	
24	----------	Pl(?)	22.87	Apr. 2, 1953	J, E	8	D	
8	Sand-------	Ri	r115	----------	--------	------	P	
6	-----do-------	Ri	r55	----------	Cy, E	4	D	
24	----------	Pl(?)	11	Aug. 30, 1950	-------	------	U	
30	----------	Ri	36.04	-----do------	J, E	8	D	
24	----------	Pl(?)	r29	----------	Bu	------	D	
24	----------	Pl(?)	r28	----------	Bu	------	D	
30	----------	Pl(?)	r44	----------	J, E	6	D	
24	----------	Pl(?)	34.56	Apr. 1, 1953	J, E	6	D	
30	----------	Pl(?)	r45	----------	J, E	5	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-56	¾ mile southeast of Reidland.	F. L. Babb			Du	r21
57	1 mile southeast of Reidland	Mrs. E. Babb			Du	r21
58	do	Marshall Bowland			Du	54
59	1¼ miles southeast of Reidland.	O. E. Langston			Du	r47
60	1½ miles southeast of Reidland.	F. L. Babb			Du	50
61	do	J. L. Devine			Du	r42
62	do	D. L. Boulnois			Du	r40
63	1¾ miles southeast of Reidland.	S. Boulnois			Du	25
64	2 miles southeast of Reidland.	Paul Edwards			Du	r65
65	1¾ miles southeast of Reidland.	Virgil Phelps			Du	44
66	1½ miles southeast of Reidland.	E. E. Tyree			Du	47
67	2 miles southeast of Reidland.	Rosebower Church.			Du	36
68	do	H. R. Rudolph			Du	48
69	2¼ miles southeast of Reidland.	J. T. Rudolph			Du	r51
70	1½ miles east of Reidland	F. M. Wreck			Du	r49
71	1¾ miles east of Reidland	J. R. Cain		1941	Du	35
72	¾ mile northeast of Reidland.	R. L. Thurston			Du	r60
73	½ mile northeast of Reidland.	Harold Grace			Du	r35
74	½ mile north of Reidland	W. J. Martin			Du	53
75	do	Rudy Jackson			Du	r54
76	do	Herman Martin			Du	r53
77	do	Luther Camp			Du	r53
78	do	C. B. Wyatt			Du	56
79	¾ mile north of Reidland	Burt Morrison		1945	Du	r62
80	do	George Pierce			Du	r62
81	do	Gene Pierce			Du	r61
82	do	Robert Tucker			Du	r55
83	do	Paul Jackson			Du	r57
84	1 mile north of Reidland	O. J. Williams			Du	r57
85	¾ mile northeast of Reidland.	Buell Ramage		1947	Du	r65
86	do	L. C. Dyson			Du	r65
87	do	Ashland Oil and Refining Co.			Dr	227
88	do	do	Critt Smith	1949	Dr	r296
89	1 mile north of Reidland	Charles Broach			Du	r63
90	do	Mrs. J. R. Fuller			Du	r59
91	1¼ miles north of Reidland	J. H. Thomason			Du	25
92	1½ miles northwest of Reidland.	Robert Buchanan.			Bo	27
93	do	Hurbert Crafton			Du	29
94	do	Old Kentucky Inn.	R. B. Elrod	1950	Dr	r226
95	do	Raymond Freeman.			Du	r26
96	do	Rock-A-Bye Motel.			Du	r28

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	Red gravel	Pl (?)	r4		J, E	8	D	Depth to top of water-bearing bed, 1 ft; thickness, 20+ ft.
24	do	Pl (?)	r3		J, E	8	D	Depth to top of water-bearing bed, 4 ft; thickness, 17+ ft.
24		Pl (?)	47.96	Apr. 1, 1953	J, E	5	D	
30		Pl (?)	r43		Cy, E	4	D	
24		Pl (?)	42.54	Sept. 5, 1950	Cy, E	6	D	
30		Pl (?)	r39		Bu		D	
24		Pl (?)	r36		Bu		D	
24		Pl (?)	15.86	Sept. 5, 1950	Bu		D	
36	Red gravel	Pl (?)	r51		Cy, E	5	D	Depth to top of water-bearing bed, 14 ft; thickness, 51 ft.
30		Pl (?)	40.24	Sept. 5, 1950	Bu		D	
24		Pl (?)	40.67	Apr. 3, 1953	J, E	6	D	
36		Pl (?)	30.43	Sept. 5, 1950	Bu		D	
36		Pl (?)	43.24	Apr. 1, 1953	Bu		D	
24		Pl (?)	r37		Bu		D	
30		Pl (?)	r44		J, E	6	D	
24	White sand and red gravel.	Pl (?)	31.43		Bu		D	Depth to top of water-bearing bed, 4 ft; thickness, 29+ ft.
30		Pl (?)	r56		Bu		D	
24		Pl (?)	r30		J, E	6	D	
18		Pl (?)	45.55	Sept. 5, 1950	Bu		D	
24		Pl (?)	r47		Bu		D	
30		Pl (?)	r48		Bu		D	
24	Gravel	Pl (?)	r48		Bu		D	Depth to top of water-bearing bed, 6 ft; thickness, 47 ft.
36		Pl (?)	53.10	Sept. 6, 1950			U	
30		Pl (?)	r55		J, E	6	D	
30		Pl (?)	r56		J, E	6	D	
30		Pl (?)	r53		J, E	6	D	
30		Pl (?)	r49		J, E	5	D	
30		Pl (?)	r52		J, E	6	D	
24		Pl (?)	r49		J, E	6	D	
30	White sand	Ri	r55		Bu		D	Depth to top of water-bearing bed, 58 ft; thickness, 7 ft.
30		Ri	r57		Bu		D	
4		Ri	71.22	May 23, 1951			O	Altitude, 384.47 ft above mean sea level. Water-level measurements in table 18.
8–6		Ri	r71		Tu, E	31	In	Chemical analysis in table 7.
30	Sand	Ri	r57		J, E	5	D	
36		Ri	r55		J, E	5	D	
36		Pl(?)	4.00	Sept. 6, 1950	J, E	7	D	
6		Al	10.20	Sept. 22, 1950	Bu		D	Depth to top of water-bearing bed, 23 ft; thickness, 4+ ft.
24		Al	14.93	do	J, E	6	D	
6 to 2	Sand	Ri	r43		Cy, E	20	C	Depth to top of water-bearing bed, 214 ft; thickness, 12+ ft. Chemical analysis in table 7. Log on p. 181.
24		Al	r14		S, E	4	D	Specific capacity in table 6.
36		Al	r18		J, E	6	C	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-97	1¼ miles northwest of Reidland.	Robert Rothwell			Du	r26
98	2 miles northwest of Reidland.	Alice Demmington.			Bo	27
99	1¼ miles north of Reidland	Thornton Casey		1944	Dr	r148
100	1 mile north of Reidland	M. E. Gilbert		1943	Du	r52
101	½ mile north of Reidland	Charles Scott			Du	r54
102	¾ mile north of Reidland	W. O. Jordon			Du	r40
103	Reidland	J. W. Cartee			Du	r49
104	do	L. C. Barnes			Du	r55
105	do	T. H. Vickers			Du	r60
106	do	G. F. Ashley			Du	r58
107	do	Charles Hall			Du	r55
108	do	W. B. Walker			Du	r58
109	do	Alton Wyatt			Du	r55
110	2712 Vaughn St., Paducah	Monroe Howard			Bo	27
111	2821 Boone St., Paducah	V. Bottoms			Bo	r40
112	818 Main St., Paducah	T. C. Brokaw		1936	Bo	23
113	202 Main St., Paducah	James V. Crayton			Bo	17
114	1 mile northwest of Woodlawn.	J. A. Shoulta			Bo	r35
115	¾ mile west of Woodlawn	E. J. McClure			Du	22
116	do	May Goodman			Du	38
117	do	Henry Prince			Du	33
118	do	R. L. Nimmo			Bo	r27
119	do	do			Du	r20
120	do	W. F. Austin			Du	24
121	do	James Bowerman			Du	r22
122	½ mile west of Woodlawn	Forrest E. Stringer.			Bo	31
123	do	do			Du	r22
124	do	J. M. Styers			Du	r18
125	Woodlawn	E. P. Joice			Du	r16
126	½ mile west of Woodlawn	James Grimm			Du	r25
127	Woodlawn	Louis J. Roetteis			Du	21
128	do	John Yarbro		1920	Du	r24
129	½ mile west of Woodlawn	Jessie Reynolds			Du	r24
130	do	R. Scott			Du	r22
131	¾ mile west of Woodlawn	Clifton Rudd		1947	Du	r23
132	½ mile west of Woodlawn	E. A. Clark		1949	Du	20
133	Woodlawn	W. C. Brewer		1929	Du	13
134	½ mile northwest of Woodlawn.	J. P. Murt			Du	13
135	Woodlawn	Mrs. J. C. Morgan			Du	39
136	do	T. M. Reed			Du	19
137	do	Frank Overby			Du	18
138	do	A. H. Melott			Bo	18
139	do	Cliff Farmer		1947	Du	19
140	do	Henley Franklin			Du	24
141	do	Raymond Hunt			Du	r25
142	do	Vernon Dew			Du	18
143	do	Lola Cunningham			Bo	27
144	1¼ miles north of Reidland	L. B. Stinson	R. B. Elrod	1950	Dr	227
145	Woodlawn	Jeff Wilkie			Bo	r21
146	do	Luther Frankfort			Du	r15

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
30		Al	r20		S, E	4	D	
8		Al	20.12	Sept. 6, 1950	Bu		S	
4	White sand	Ri	r70		Cy, E	7	D	
24	Brown gravel.	Pl (?)	r45.5		J, E	6	D	
30		Pl (?)	r49		J, E	6	D	
30		Pl (?)	r35		J, E	6	D	
24		Pl (?)	45.33	Apr. 2, 1953	J, E	5	D	
24		Pl (?)	r49		J, E	6	D	
24		Pl (?)	r55		J, E	6	D	
24		Pl (?)	r53		J, E	6	D	
24		Pl (?)	r50		J, E	5	D	
24		Pl (?)	r52		J, E	6	D	
30		Pl (?)	r49		Cy, E	4	D	
8		Al	12.48	July 10, 1950			U	
6		Al	r20		Bu		D	
6		Al	14.74	July 10, 1950			U	Water-level measurements in table 18.
6		Al	15.95	do			U	
8		Al	r10				U	
30		Al	10.52	July 25, 1950			U	
36		Al	6.71	do			U	Water-level measurements in table 19.
36		Al	6.92	do			U	Do.
6		Al	r10				U	Depth to top of water-bearing bed, 24 ft; thickness, 3+ ft.
36		Al	r8				U	
24		Al	6.75	July 25, 1950			U	
24		Al	r6				D	
6		Al	6.72	Aug. 12, 1950			U	Water-level measurements in table 19.
24		Al	r8		Cy, H		U	
36		Al	r12		Cy, H		S	Depth to top of water-bearing bed, 14 ft; thickness, 4+ ft.
36		Al	r8		Cy, H		D	
24		Al	r10		Cy, H		D	
18		Al	9.65	July 25, 1950			U	
36		Al	r15				U	
36		Al	r9		Bu		D	
24		Al	r14		Bu		D	
24		Al	r6		Bu		D	
24		Al	3.98	July 16, 1950			U	
36		Al	3.35	do			U	
24		Al	4.38	do			U	
36		Al	8.67	do			O	Altitude, 324 ft above mean sea level. Water-level measurements in table 18
30		Al	10.69	July 28, 1950			U	Water-level measurements in table 19.
24		Al	10.11	do			U	
6		Al	13.62	do	Bu		S	Water-level measurements in table 19.
24		Al	10.98	do			U	
24		Al	5.87	Sept. 20, 1950	Bu		D	
24		Al	r8		Bu		D	
36		Al	7.46	Sept. 20, 1950	Bu		D	
6		Al	3.35	do	Bu		D	
6	Silty sand	Ri	84.15	Jan. 1, 1951			O	Altitude, 397.50 ft above mean sea level. Depth to top of water-bearing bed, 245 ft; thickness, 32+ ft. 10 ft of 6 in. screen, no. 10 slot. Log on p. 181. Water-level measurements in table 18.
6		Al	r15		Bu		D	
24		Al	r3		Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-147	Woodlawn	Luther Frankfort			Bo	18
148	do	Willie Stewart			Du	r15
149	do	Luther Franklin			Du	r16
150	do	Marion Craff			Bo	r14
151	do	G. E. Robison			Du	r18
152	do	Clark Spann			Du	13
153	do	W. J. Caldwell			Du	r48
154	do	R. F. Smith			Du	43
155	do	F. M. Jarboe			Du	r12
156	do	Lake Edwards			Du	r17
157	do	George Stevens			Dr	r125
158	do	M. T. Joslyn			Du	r24
159	do	Carey Stevens			Du	r18
160	do	J. E. Harrington			Bo	r29
161	do	Robert Spragg			Du	r17
162	do	George Earles			Bo	32
163	do	Curtis Winn			Bo	24
164	do	Decie Foller		1942	Bo	21
165	do	Edgar Mullinix			Bo	24
166	do	E. L. Grainger			Du	r25
167	do	Charles Etter			Du	r14
168	do	E. C. Nance			Du	r19
169	do	H. Y. Bean			Bo	r26
170	do	W. H. Owen			Bo	18
171	do	J. E. Knight			Du	15
172	do	Joe Conrad			Du	r16
173	do	E. F. Bearfield			Bo	23
174	do	B. M. Green			Bo	16
175	do	Loyd Hale			Du	r22
176	do	Chief Paduke Motel.	Walter Bingham.		Dr	r95
177	do	Schmidt Tourist Court.	W. H. Ellis	1949	Dr	r94
178	do	Egner's Grocery	do	1945	Dr	r93
179	do	Trio Bar			Du	17
180	do	Flamingo Club	Walter Bingham.	1947	Dr	r92
181	2 miles northwest of Reidland.	Mrs. Lube Tyree			Du	r37
182	do	Allice Demmington.			Bo	r18
183	1.5 miles northwest of Reidland.	J. L. Bichon			Du	r30
184	Woodlawn	Pauline Jabro			Du	r25
185	do	Lee Tucker		1913	Du	18
186	¾ mile south of Woodlawn	J. M. Reid			Du	22
187	½ mile south of Woodlawn	Aron Rogers			Du	17
188	¾ mile south of Woodlawn	O. W. Hawkins			Du	28
189	do	T. E. Walker			Du	19
190	do	Harry Thompson			Du	17
191	1 mile south of Woodlawn	Mrs. L. Thomasson.			Du	22
192	do	George Hester			Du	29
193	do	F. Rogers			Du	r28
194	do	B. A. O'Bryan			Du	r25
195	do	E. C. Cain		1945	Du	r30
196	do	C. M. Story		1935	Bo	22
197	1½ miles west of Reidland	Pauline Lynn			Du	r61
198	1½ miles southwest of Reidland.	do			Bo	61
199	do	Albert Snow			Du	r62
200	1¼ miles southwest of Reidland.	Pauline Lynn			Du	r62
201	do	do			Du	34
202	Reidland	W. E. Cartee		1947	Du	62

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
8	----------	Al	3.58	Sept. 20, 1950	----------	------	U	
24	----------	Al	r3	----------	Bu	------	D	
24	----------	Al	r4	----------	Bu	------	D	
6	----------	Al	r4	----------	Bu	------	D	
24	----------	Al	r4	----------	Bu	------	D	
24	----------	Al	4.69	Sept. 20, 1950	----------	------	U	
24	----------	Al	r5	----------	Bu	------	D	
36	----------	Al	3.91	Sept. 20, 1950	Bu	------	D	
24	----------	Al	r3	----------	Bu	------	D	
30	----------	Al	r6	----------	S, E	4	D	
4	----------	Rl	r40	----------	Cy, E	5	D	
48	----------	Al	r5	----------	J, E	8	D	
48	----------	Al	r5	----------	Bu	------	D	
8	----------	Al	r4	----------	S, E	4	D	
8	----------	Al	r10	----------	Bu	------	D	
8	----------	Al	3.58	Sept. 20, 1950	Bu	------	D	
6	----------	Al	3.69	-----do-----	Bu	------	D	
6	----------	Al	3.91	-----do-----	Bu	------	D	
6	----------	Al	3.92	-----do-----	Bu	------	D	
24	----------	Al	r15	----------	S, E	4	D	
30	----------	Al	r6	----------	Bu	------	D	
30	----------	Al	r6	----------	Bu	------	D	
6	----------	Al	r10	----------	Bu	------	D	
8	----------	Al	3.89	Sept. 22, 1950	Bu	------	D	
24	----------	Al	2.80	-----do-----	Bu	------	D	
24	Red sand and brown gravel.	Al	r3	----------	Bu	------	D	
8	----------	Al	3.70	Sept. 22, 1950	Bu	------	S	
6	----------	Al	3.92	-----do-----	----------	------	U	
24	----------	Al	r6	----------	----------	------	U	
4	Sand and gravel.	Al	r37	----------	Cy, E	5	C	
2	----------	Al	r39	----------	Cy, E	5	C	Depth to top of water-bearing bed, 89 ft; thickness, 5+ ft.
2	----------	Al	r40	----------	Cy, E	5	C	
24	----------	Al	4.60	Sept. 6, 1950	----------	------	U	
4	Sand and coarse gravel.	Al	r32	----------	Cy, E	5	C	
36	----------	Al	r8	----------	S, E	6	D	
8	----------	Al	r13	----------	----------	------	S	
30	----------	Al	r14	----------	J, E	8	D	
36	----------	Al	r10	----------	Bu	------	D	
36	----------	Al	5.99	Aug. 10, 1950	----------	------	U	
36	----------	Al	9.57	Aug. 7, 1950	----------	------	U	
24	----------	Al	9.60	-----do-----	----------	------	U	
36	----------	Al	9.15	-----do-----	----------	------	U	
24	----------	Al	8.79	-----do-----	----------	------	U	
30	----------	Al	4.27	-----do-----	----------	------	U	Water-level measurements in table 19.
36	----------	Al	9.15	-----do-----	----------	------	U	
30	----------	Al	13.78	-----do-----	S, E	6	D	
36	----------	Al	r12	----------	Bu	------	D	
24	----------	Al	r12	----------	J, E	8	D	
24	----------	Al	r23	----------	Bu	------	D	
8	----------	Al	9.46	Aug. 7, 1950	----------	------	U	Water-level measurements in table 19.
24	----------	Al	r36	----------	Bu	------	D	
8	----------	Al	25.66	Aug. 12, 1950	----------	------	U	
36	----------	Al	r25	----------	Bu	------	D	
36	----------	Al	r26	----------	Bu	------	D	
36	----------	Al	19.05	Aug. 12, 1950	----------	------	U	Water-level measurements in table 19.
24	----------	P1(?)	57.17	Apr. 2, 1953	J, E	6	D	Static water level, 59.63 ft below land surface, May 5, 1953.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-203	Reidland	Karl McAllister			Du	25
204	1¾ miles southwest of Woodlawn.	Will Eick			Du	r50
205	1 mile south of Woodlawn	Jimmy Franklin		1940	Du	r19
206	do	Clarence Rankin			Du	r19
207	do	O. C. Herndon			Du	r20
208	¾ mile south of Woodlawn	Fred Golightly			Du	r19
209	do	Rex Threatt			Du	r20
210	do	Orbie Turner			Du	r20
211	do	Wilmer Sights			Du	r20
212	do	R. Shelton			Du	r20
213	do	C. V. Broyles			Du	r22
214	do	Luby Story			Bo	r18
215	do	Ruble Rudd			Du	r17
216	do	Clyde Threatt			Du	r20
217	½ mile south of Woodlawn	Harry Houck			Du	r22
218	do	O. G. Barnes			Du	r21
219	do	J. M. Character			Du	r20
220	do	W. F. Hunt			Du	r20
221	1¾ miles northwest of Reidland.	Frank Reed			Dr	r90
222	do	Riley O. Jones		1920	Du	r33
223	do	H. Smith			Du	r40
224	do	C. T. Allen			Du	31
225	do	Garland Scott			Bo	r30
226	do	J. Barren			Dn	r50
227	do	Edgar Spraggs			Bo	r30
228	1½ miles northwest of Reidland.	William Stafford			Dn	r56
229	1¾ miles northwest of Reidland.	H. H. Downing			Bo	r28
230	do	Helen Cleaver			Du	r25
231	do	H. B. Stroud			Bo	27
232	do	D. L. Stewart			Bo	49
233	do	S. F. Olliver			Bo	r30
234	do	Robert Champion			Du	r30
235	1½ miles northwest of Reidland.	A. T. Perry			Du	r33
236	do	J. T. Downs			Du	r38
237	1¼ miles northwest of Reidland.	J. F. Bichon			Du	r30
238	do	do	D. P. McNeely	1924	Dr	r110
239	do	H. A. Vantreese			Du	r34
240	do	S. C. Priester			Du	r30
241	1 mile northwest of Reidland.	Conrad Bridges			Du	r45
242	do	M. Jackson			Du	r28
243	do	C. M. Powell			Du	41
244	do	Thomas McManus			Du	21
245	do	Dwain Skillion			Du	r25
246	do	S. T. Duncan			Du	r22
247	do	O. T. Gordon			Du	r14
248	do	David Pierce			Du	23
249	do	do			Du	26
250	do	Jack Edwards			Bo	25
251	¾ mile northwest of Reidland.	Carl Fuller			Du	r28
252	do	Harlan Fitch			Du	r18
253	do	Charley Peck			Du	r18
254	do	do			Du	r24
255	do	E. F. Adams			Du	r26
256	do	do			Du	r24
257	do	J. E. Hall			Dr	r95
258	do	do			Du	r35
259	do	L. S. Shelton			Du	r22
260	½ mile northwest of Reidland.	do			Du	16
261	do	Robert F. Waller			Du	r40
262	do	J. S. Copeland			Du	r16
263	do	Procter Hollowell			Du	23

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24		Al	18.30	Aug. 30, 1950			U	
36		Al	r15		Bu		D	
36		Al	r14		S, E	4	D	
30		Al	r9		S, E	4	D	
36		Al	r13		S, E	4	D	
36		Al	r14		S, E	4	D	
36		Al	r12		S, E	4	D	Chemical analysis in table 7.
36		Al	r14		S, E	4	D	
36		Al	r7		S, E	4	D	
36		Al	r10		S, E	4	D	
24		Al	r13		S, E	6	D	
8		Al	r7		Cy, H		D	
30		Al	r8		Bu		D	
30		Al	r10		S, E	4	D	
30		Al	r10		S, E	4	D	
30		Al	r13		Bu		D	
36		Al	r10		Bu		D	
36		Al	r14		J, E	6	D	
4		Al	r14		Cy, E	4	D	
36		Al	r14		Cy, E	6	D	
36		Al	r14		Cy, E	6	D	
36		Al	10.42		Bu		D	
8		Al	r18		Bu		D	
2		Al	r45		Cy, H		D	
8		Al	r20		Bu		S	
2		Al	r24		Cy, E	4	D	
6		Al	r12		Bu		D	
24		Al	r12		Bu		D	
8		Al	20.26	Aug. 22, 1950	Bu		D	
6		Al	21.95	do	Bu		D	
8		Al	r20		Bu		D	
36		Al	r18		Bu		D	
36		Al	r20		Bu		D	
24		Al	r25		Cy, E	4	D	
30		Al	r15		J, E	6	D	
4		Ri	r70		J, E	5	D	Depth to top of water-bearing bed, 100 ft; thickness, 10+ ft.
36		Al	r17		J, E	6	D	
36		Pl (?)	r14		J, E	6	D	
24		Pl (?)	r39		Cy, E	6	D	
24		Pl (?)	r20		J, E	5	D	
36		Pl (?)	13.12	Aug. 22, 1950	Bu		D	
36		Pl (?)	13.38	do	Bu		D	
24		Pl (?)	r14		Bu		D	
24		Pl (?)	r12		S, E	4	D	
24		Pl (?)	r8		Bu		D	
30		Pl (?)	10.37	Aug. 22, 1950			U	
36		Pl (?)	13.80	do			U	
6		Pl (?)	14.27	Aug. 30, 1950	Bu		D	
30		Pl (?)	r20		J, E	6	D	
30		Pl (?)	r10		S, E	4	D	
18		Pl (?)	r14		S, E	4	D	
60		Pl (?)	r21		Bu		D	
30		Pl (?)	r18		Bu	18	D	
30		Pl (?)	r20				U	
6		Ri	r45		Cy, E	4	D	
30		Pl (?)	r12		S, E	5	D	
30		Pl (?)	r12		S, E	4	D	
24		Pl (?)	7.05	Aug. 30, 1950			U	
36		Pl (?)	r24		J, E	8	D	
18		Pl (?)	r12		Bu		D	
36		Pl (?)	19.76	Aug. 30, 1950	Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-264	½ mile northwest of Reidland.	Richard Hancock			Du	43
265	Reidland	Rollie Peck	R. B. Elrod	1949	Dr	r245
266	1½ miles northwest of Reidland.	Walter Guernsey			Du	29
267	1 mile southeast of Reidland	F. L. Babb			Dr	64
268	2 miles northeast of Reidland.	Oscar Peck			Dn	r40
269	do	do			Dn	r41
270	2¼ miles northeast of Reidland.	Foster Threckle			Dn	r41
271	do	Jim Gillihan			Dn	r40
272	do	Cliff Fires			Dn	r42
273	do	Edward Fires			Dn	r43
274	do	Frank Vines			Dn	r39
275	2½ miles northeast of Reidland.	Robert Spease			Dn	r41
276	do	Melton Colson			Dn	r40
277	do	Elvis Fires			Dn	r38
278	do	T. Trail			Dn	r40
279	2¾ miles northeast of Reidland.	E. C. Lancaster			Dn	r44
280	do	J. B. Swinford			Dn	r37
281	2½ miles northeast of Reidland.	C. R. Eison			Dn	r42
282	do	Lucy Vick			Dn	r40
283	do	C. R. Eison			Dn	r40
284	do	Athen Carrol			Dn	r37
285	do	E. C. Edwards			Dn	r39
286	do	William Hall			Dn	r40
287	2 miles southeast of Woodlawn.	George Allen	William Taylor Drilling Co.	1950	Dr	r2,044
288	Tennessee River bridge, 5 miles southeast of Paducah.	State of Kentucky	Kentucky Department of Highways.	1928	Dr	r100
289	do	do	do	1928	Dr	110
290	do	do	do	1928	Dr	100
291	do	do	do	1928	Dr	100
292	do	do	do	1928	Dr	100
293	do	do	do	1928	Dr	50
294	do	do	do	1928	Dr	50
295	do	do	do	1928	Dr	50
296	do	do	do	1928	Dr	50
297	do	do	do	1928	Dr	50
298	do	do	do	1928	Dr	50
299	do	do	do	1928	Dr	50
300	do	do	do	1928	Dr	50
301	do	do	do	1928	Dr	50
304	Reidland	I. L. Whitton		1952	Du	54
305	½ mile north of Reidland	Perkins		1953	Du	40
306	½ mile northeast of Reidland.	Aretta Smith		1948	Du	49
307	½ mile north of Reidland	E. C. Adkinson	T. Jones	1951	Du	23
308	1¼ miles southeast of Reidland.	R. F. Peck		1952	Du	43
309	Reidland	John W. Bowland	Scarborough	1953	Du	50
310	do	Marshall Bowland	Henry Harper	1953	Du	53

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Pl (?)	17.10	Aug. 30, 1950	J, E	8	D	Chemical analysis in table 7.
4	----------	----------	----------	----------	----------	----------	T	
24	----------	Al	14.20	Sept. 22, 1950	S, E	4	D	
2	----------	Ri	43.18	Sept. 6, 1950	----------	----------	U	Water-level measurements in table 19.
2	----------	Al	r32	----------	Cy, E	5	D	
2	----------	Al	r34	----------	Cy, E	5	D,Ir,S	
2	----------	Al	r34	----------	Cy, E	4	D	
2	----------	Al	r33	----------	Cy, H	----------	D	
2	----------	Al	r35	----------	Cy, E	4	D	
2	----------	Al	r35	----------	Cy, H	----------	D	
2	----------	Al	r31	----------	Cy, H	----------	D	
2	----------	Al	r33	----------	Cy, H	----------	D	
2	----------	Al	r32	----------	Cy, H	----------	D	
2	----------	Al	r30	----------	Cy, H	----------	D	
2	----------	Al	r32	----------	Cy, H	----------	D	
2	----------	Al	r37	----------	Cy, H	----------	D	
2	----------	Al	r30	----------	Cy, H	----------	D	
2	Loose white sand.	Al	r34	----------	Cy, E	5	D	Depth to top of water-bearing bed, 34 ft; thickness, 8+ ft. Chemical analysis in table 7.
2	----------	Al	r32	----------	Cy, H	----------	D	
2	White sand..	Al	r32	----------	Cy, H	----------	D	Depth to top of water-bearing bed, 32 ft; thickness, 8+ ft.
2	----------	Al	r30	----------	Cy, E	5	D	
2	----------	Al	r31	----------	Cy, H	----------	D	
2	----------	Al	r32	----------	Cy, H	----------	D	
10 to 6	----------	----------	----------	----------	----------	----------	To	Altitude, 340 ft above mean sea level. Bedrock at 365 ft. Top of Chattanooga shale at 840 ft; thickness, 140 ft. Water at 133 to 138 ft, 254 to 341 ft, 830 to 835 ft.
2	----------	Ri	----------	----------	----------	----------	To	Log on p. 182.
2	----------	Ri	----------	----------	----------	----------	To	Do.
2	Sand-------	Ri	----------	----------	----------	----------	To	Depth to top of water-bearing bed, 75 ft; thickness, 25+ ft. Log on p. 182.
2	----------	Ri	----------	----------	----------	----------	To	Log on p. 183.
2	----------	Ri	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Log on p. 184.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Do.
2	----------	Al	----------	----------	----------	----------	To	Log on p. 185.
2	----------	----------	----------	----------	----------	----------	To	Do.
24	----------	Pl (?)	51.12	Apr. 1, 1953	J, E	5		
24	Gravel-----	Pl (?)	32.52	Apr. 2, 1953	Bu	----------	D	
24	-----do-----	Pl (?)	43.50	-----do-------	Bu	----------	D	
24	----------	Pl (?)	21.97	-----do-------	J, E	6	D	
24	----------	Pl (?)	38.93	Apr. 1, 1953	J, E	13	D	
24	Gravel-----	Pl (?)	46.23	July 9, 1953	J, E	7.5	D	
24	Sandy gravel	Pl (?)	50.89	-----do-------	J, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8830-3700-311	Reidland	Raymond Blasdale.	Henry Harper.	1953	Du	54
312	do	E. S. Smiddy	Henry Harper and J. E. Jennings.	1953	Du, Bo	r70
313	do	Pearl Newman	Henry Harper.	1953	Du	r55
314	Woodlawn	Genessee Trailer Sales.	Walter Bingham.	1953	Dr	r85
315	1 mile southeast of Reidland	Joseph N. Sanders		1930	Dr	r1,360
316	2 miles southeast of Reidland.	O. E. Allen	McFarland & Teague.	1953	Dr	r167
317	Reidland	E. S. Smiddy	Sears	1953	Dr	r105
318	do	Thomas Dubois	J. E. Jennings.	1953	Bo	52
319	do	Karl McAllister			Du	24
320	Meyers St., near Woodward St., Paducah.	City of Paducah	U. S. Corps of Engineers.	1939	Dr	31
321	Meyers St., at Locust Drive, Paducah.	do	do	1939	Dr	19
322	Tully St., near Boone Ave., Paducah.	do	do	1939	Dr	33
323	Near Yeiser and Bethel Sts., Paducah.	do	do	1939	Dr	8
324	¼ mile north of Woodlawn	do	do	1939	Dr	25
325	1 mile south of Woodlawn	do	do	1939	Dr	22
326	1¼ miles south of Woodlawn	do	do	1939	Dr	11
327	1½ miles south of Woodlawn	do	do	1939	Dr	12
328	1¾ miles south of Woodlawn	do	do	1939	Dr	13
8835-3650-1	5¾ miles southwest of Symsonia.	G. E. Housman			Du	r46
2	do	O. W. Barker			Du	31
3	5¼ miles southwest of Symsonia.	Herman Whitis			Du	34
4	4½ miles southwest of Symsonia.	J. E. Rhew			Du	34
5	4¼ miles southwest of Symsonia.	Forrest Rhew			Du	60
6	do	do			Bo	76
7	do	F. H. Schmidt			Du	r61
8	5 miles west of Symsonia	Earl Holshouser			Du	60
9	do	Leonard Crooks			Du	59
10	4½ miles west of Symsonia	R. R. Baird			Dr	83
11	do	J. K. Campbel'			Du	r12
12	3½ miles west of Symsonia	Elmore Boyd			Du	13
13	4¼ miles west of Symsonia	T. S. Brooks			Du	22
14	4¼ miles south of Freemont	D. J. Farmer	Casey & Case Foundation Co.	1952	Bo	60
15	do	R. C. Perry	Henry Harper.	1951	Du	64
16	do	Alvie Whitis	Casey & Case Foundation Co.	1952	Bo	63
8835-3655-1	2 miles southeast of Freemont.	L. W. Hendrick			Du	r33
2	do	Alton McReynolds			Du	16
3	do	W. E. Davis			Du	r35
4	2½ miles southeast of Freemont.	Rev. J. Brown			Du	r35
5	do	Howard Purcell			Du	r37
6	do	E. H. Dunaway			Bo	r32
7	2 miles southeast of Freemont.	Robert Hick			Du	27
8	1 mile south of Freemont	Claude Thompson.			Du	r31
9	1¼ miles south of Freemont.	E. C. Bass			Dr	r72
10	do	M. B. Habeck			Du	r61

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24	Sandy gravel	Pl (?)	51.62	July 9, 1953	J, E	6	D	
24	Sand	Ri	50.83	July 28, 1953	J, E		D	Log on p. 185.
24	Sandy gravel.	Pl (?)	r51				D	
2	Sand and gravel.	Al	r30				U	
							To	Altitude, 409 ft above mean sea level. Bedrock at 500 ft. Chattanooga shale at 740 ft; thickness, 242 ft.
2	Sand	Ri	r50		Cy, E	5	C	Chemical analysis in table 7.
6	do	Ri	57.92	July 28, 1953			U	
24	do	Ri	39.17	do	J, E	6	D	Altitude, 397 ft above mean sea level. Porters Creek clay at 36 ft.
30		Pl (?)	6.80	Apr. 2, 1953	Bu		S	
2		Al					Tc	Log on p. 185.
2		Al					Tc	Log on p. 186
2		Al					Tc	Do.
2		Al					Tc	Do.
2		Al					Tc	Do.
2		Al					Tc	Do.
2		Al					Tc	Do.
2		Al					Tc	Log on p. 187.
2		Al					Tc	Do.
24	White sand	Hs	r41		Bu		D	
24		Hs	26.57	Oct. 11, 1950			U	Water-level measurements in table 19.
24		Hs	30.98	do	Bu		D	
30		Hs	13.11	do	Bu		D	Chemical analysis in table 7.
24		Hs	42.74	do	J, E	6	D	
8		Hs	40.82	do			O	Water-level measurements in table 18.
24		Hs	r48		J, E	6	D	
30		Hs	54.54	Oct. 18, 1950	Bu		D	
24		Hs	54.66	do	Bu		D	
8		Hs	79	do	Cy, E	4	D	
24	White sand	Hs	r7		Bu		D	
18		Hs	8.57	Oct. 25, 1950	Bu		D	
24		Hs	19.38	do	Bu		D	
24		Hs	53.90	Apr. 13, 1953	J, E	6	D	
24	Sand	Hs	60.38	do	Bu		D	
24		Pl (?)	54.78	do	J, E	6	D	Chemical analysis in table 7.
24		Hs	r20		Bu		D	
24		Al	7.71	Oct. 4, 1950	S, E	4	D	
24		Hs	r30		J, E	6	D	
24		Hs	r30		Cy, E	5	D	
24		Hs	r32		Bu		D	
8		Hs	r27		Bu		D	
24		Hs	21.44	Oct. 4, 1950	J, E	6	D	
24		Hs	r23		Bu		D	
2		Hs	r66		Cy, E	4	D	
24		Hs	r58		Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3655-11	1½ miles south of Freemont.	S. E. Yarbrough			Bo	r73
12	do	W. M. Joiner			Du	r80
13	1¾ miles south of Freemont.	Faughn Glenn			Du	60
14	1¾ miles southeast of Freemont.	Walter Knight			Du	42
15	do	Rudy Smith			Du	r19
16	do	R. I. Kornegay			Du	30
17	do	A. E. Huss			Du	r34
18	do	Mrs. J. A. Burkhart.			Du	32
19	do	J. S. Harper			Du	33
20	do	W. Ellington			Bo	33
21	1½ miles south of Freemont.	Mrs. Crate Bass	Ode Shelton		Dr	r65
22	2 miles south of Freemont.	E. R. Hall			Du	r27
23	do	Leonard Johnson			Bo	25
24	2¼ miles south of Freemont.	R. C. Troutman			Bo	r21
25	2½ miles south of Freemont.	Tolbert Harper		1920	Du	16
26	do	Lee Purcell			Bo	r14
27	do	Mrs. Vinecia Shaffer.			Bo	41
28	do	L. T. Crooks			Bo	33
29	do	Kinon Brookshire			Du	45
30	do	Howard Purcell			Du	37
31	3 miles southeast of Freemont.	Henry Cane			Du	37
32	do	Rudy Lane			Du	33
33	3¼ miles southeast of Freemont.	E. L. Brown			Du	40
34	do	Code Purcell			Du	r89
35	3½ miles south of Freemont.	E. A. Lee		1949	Dr	r120
36	3 miles south of Freemont.	Dewey Brown			Dr	13
37	do	Jewel Dunning			Du	r22
38	3½ miles south of Freemont.	Solon Smith			Du	58
39	do	do			Du	37
40	3 miles south of Freemont.	Jewel Dunning			Du	18
41	3½ miles south of Freemont.	J. M. Howard			Du	r30
42	3¼ miles south of Freemont.	D. E. Bearden			Du	22
43	do	L. G. Heflin			Bo	r18
44	3½ miles southeast of Freemont.	Edward Rogers			Du	36
45	2¾ miles south of Freemont.	W. H. Shoulta			Bo	21
46	2 miles north of Freemont.	J. H. Richards			Du	r20
47	do	Genny Marthell			Du	24
48	1¾ miles north of Freemont.	S. J. Mitchell			Bo	12
49	do	do			Du	31
50	do	Dean Dodd			Du	r25
51	1¾ miles northeast of Freemont.	Webb Joiner			Du	r18
52	do	E. A. Elkins			Du	r30
53	1½ miles northeast of Freemont.	Bethy Story			Dn	r20
54	do	Mell Fonville			Du	18
55	1¼ miles northeast of Freemont.	Jess Stager			Bo	r15
56	do	James Smith			Du	r16
57	do	H. C. Biggs			Du	17
58	1½ miles northeast of Freemont.	L. A. Dalton			Bo	27
59	1 mile southeast of Freemont.	T. A. McDanial			Du	r28
60	1¼ miles southeast of Freemont.	E. O. Peyton			Bo	41
61	¾ mile southeast of Freemont.	Floyd Keeling			Du	r50
62	do	Rudy Keeling			Du	42

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
8		Hs	r58		Cy, E	4	D	
30		Hs	r77		Cy, E	4	D	
24		Hs	57.08	Oct. 16, 1950	J, E	4	D	
24		Hs	36.24	do	Bu		D	
24		Hs	r15		Bu		D	
24		Hs	23.64	Oct. 16, 1950	Bu		D	
24		Hs	r30		Bu		D	
24		Hs	28.55	Oct. 16, 1950	Bu		D	
24		Hs	28.70	do	Bu		D	
8		Hs	27.72	do	Bu		D	
4	Sand	Hs	r59		Cy, H		D	
24		Hs	r12		S, E	10	D	
6		Hs	Flowing	Oct. 18, 1950	S, E	10	D	Chemical analysis in table 7.
6	Red sand	Hs	0		Bu		D	
24		Hs	9.92	Oct. 18, 1950	Bu		D	
8		Hs	r8		S, H		D	
8		Hs	26.57	Oct. 18, 1950	Bu		D	
6		Al	10.03	do	Bu		D	
24		Hs	42.08	do			U	Water-level measurements in table 19.
24		Pl (?)	32.96	do	Bu		D	
24		Hs	31.43	do	Bu		D	
24		Hs	25.41	do	J, E	4	D	
24		Hs	33.90	do	J, E	6	D	
30		Hs	r72		Cy, E	4	D	Depth to top of water-bearing bed, 52 ft; thickness, 37 ft. Log on p. 137.
2		Hs	r95		Cy, E	4	D	
24		Pl (?)	5.07	Oct. 18, 1950	Bu		D	
24		Pl (?)	r10		Bu		D	
24		Hs	49.83	Oct. 18, 1950	J, E	6	D	Chemical analysis in table 7.
24		Hs	28.18	do			U	Temperature 58°F, Oct. 18, 1950. Water-level measurements in table 18.
24		Al	5.32	do	Bu		D	Temperature 62°F, Oct. 18, 1950.
24		Hs	r27		Bu		D	
18		Al	8.64	Oct. 18, 1950	Bu		D	
6		Pl (?)	r12		Bu		D	
24		Hs	31.15	Oct. 25, 1950	Bu		D	Temperature 59°F, Oct. 25, 1950.
8		Hs	3.71	do	Bu		D	
30	Gravel	Pl (?)	r10		Bu		D	
30		Al	8.92	Oct. 4, 1950	Bu		D	
6	Red sand	Al	2.70	do	Bu		D	
30		Al	5.15	do	Bu		D	
24		Al	r7		S, E	4	D	
24		Al	r8		Bu		D	
24		Al	r10		Bu		D	
2		Al	r10		S, H		D	
30		Al	4.19		Cy, H		D	
12		Al	r10		S, E	6	D	
24	Sand	Al	r6		S, E	4	D	
24		Al	4.59	Oct. 4, 1950	Bu		D	
8		Al	9.78	do	Bu		D	
30		Hs	r18		Bu		D	
8		Hs	32.52	Oct. 4, 1950	Bu		D	
24		Hs	r30		Bu		D	
24		Hs	37.04	Apr. 15, 1953	J, E	5	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3655-63	1 mile southeast of Freemont.	H. F. Keeling			Du	r35
64	do	Monroe Garrett			Du	39
65	1¼ miles southeast of Freemont.	Arthur Garrett			Du	r21
66	do	Robert Howell			Du	r16
67	do	Roland Keeland			Du	32
68	1½ miles southeast of Freemont.	W. H. Thompson			Du	r18
69	do	W. E. Howell			Du	r11
70	do	Archie Thompson			Du	r22
71	1¾ miles southeast of Freemont.	Monroe Garrett			Du	r40
72	1½ miles north of Freemont	Monroe Manning			Du	r16
73	do	Illinois Central Railroad.			Du	r20
74	do	J. M. Hann			Du	31
75	do	E. Phaffer			Du	r60
76	1¾ miles north of Freemont	Jessie Thompson			Du	46
77	do	Raymond Bozworth.			Du	r40
78	do	W. A. Jones			Du	48
79	2 miles north of Freemont	W. H. Edwards			Du	r46
80	1½ miles north of Freemont	Bethel Jones			Du	46
81	do	Arthur Switzer			Du	48
82	1¼ miles north of Freemont	Ray Bosworth		1938	Bo	r61
83	do	Marcus McElya			Du	r53
84	do	May Snelling			Du	r58
85	do	G. Thompson			Du	r59
86	1 mile north of Freemont	Effie Woods			Du	42
87	1¼ miles north of Freemont	Ted Pace			Du	54
88	1 mile north of Freemont	F. Babb			Du	61
89	do	J. E. Brown			Du	r58
90	do	E. C. Jarvis			Du	59
91	do	E. E. Andrews			Du	26
92	do	Homer Dossett	Byrd		Dr	r54
93	do	Minnie Geibe			Du	23
94	do	W. L. Lawrence			Du	24
95	do	Fred Segers			Du	35
96	do	R. L. Henderson			Du	r47
97	¾ mile north of Freemont	W. L. Goad			Bo	r57
98	do	Clyde Thomason			Du	r45
99	do	Will Higgins			Du	r37
100	do	Frank Wood		1946	Du	53
101	do	do		1940	Bo	55
102	¾ mile northwest of Freemont.	Anna Shaffer			Du	r43
103	do	Curtis Thompson			Bo	r22
104	do	Mrs. Noble Harper			Bo	39
105	Freemont	Johnnie Houser			Du	12
106	do	Claude Byrd			Du	15
107	do	A. L. Thompson			Du	23
108	do	do			Du	21
109	do	L. W. Thompson			Du	16
110	do	Robert Goodwan			Du	r20
111	do	A. B. Cooper			Du	53
112	do	E. Cooper	William Thompson.		Bo	r57
113	do	A. J. Hall			Du	r55
114	½ mile south of Freemont	Rosco Houser			Du	72
115	do	J. E. Wilkins			Du	r70

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Hs	r31	----------	J, E	7	D	
24	----------	Hs	32.88	Apr. 15, 1953	J, E	6	D	
24	Brown gravel.	Al	r15	----------	S, E	4	D	
24	----------	Al	r10	----------	Bu	------	D	
24	Brown gravel.	Al	7.76	Apr. 15, 1953	Bu	------	D	
24	----------	Al	r14	----------	Bu	------	D	
30	Brown gravel.	Al	r8	----------	Bu	------	D	
24	----------	Al	r16	----------	S, E	4	D	
24	----------	Al	r35	----------	Bu	------	D	
30	Brown gravel.	Al	r10	----------	Bu	------	D	
30	----------	Hs	r10	----------	Cy, H	------	D	
30	----------	Hs	27.50	Oct. 5, 1950	Bu	------	D	
24	----------	Hs	r55	----------	J, E	5	D	
24	----------	Hs	42.93	Oct. 5, 1950	Bu	------	D	Altitude, 450 ft above mean sea level. Water level measurements in table 18.
24	----------	Hs	r35	----------	J, E	6	D	
24	----------	Hs	43.98	Oct. 5, 1950	J, E	7	D	
24	----------	Hs	r42	----------	J, E	8	D	
24	----------	Hs	42.75	Oct. 5, 1950	J, E	6	D	
30	----------	Hs	46.89	-----do-----	Bu	------	D	
6	----------	Hs	r57	----------	Cy, H	------	D	
24	----------	Hs	r50	----------	Bu	------	D	
24	----------	Hs	r52	----------	Bu	------	D	
24	----------	Hs	r56	----------	Bu	------	D	
24	----------	Hs	38.33	Oct. 5, 1950	Bu	------	D	
24	----------	Hs	48.57	-----do-----	Bu	------	D	
18	----------	Hs	54.60	-----do-----	Bu	------	D	
30	White sand	Hs	r54	----------	Bu	------	D	
24	----------	Hs	52.44	Oct. 5, 1950	Bu	------	D	
24	----------	Hs	14.73	-----do-----	Bu	------	D	
4	White sand	Hs	r36	----------	J, E	13	D	Depth to top of water-bearing bed, 46 ft; thickness, 54 ft.
24	----------	Hs	13.39	Oct. 5, 1950	Bu	------	D	
24	----------	Hs	15.60	-----do-----	S, E	4	D	
24	----------	Hs	26.86	-----do-----	Bu	------	D	
24	----------	Hs	r42	----------	J, E	6	D	
8	White sand	Hs	r50	----------	Bu	------	D	
24	----------	Hs	r40	----------	J, E	7	D	
24	----------	Hs	r33	----------	Bu	------	D	
24	----------	Hs	45.95	Oct. 5, 1950	Bu	------	D	
6	----------	Hs	44.19	-----do-----	Bu	------	S	
24	----------	Hs	r35	----------	Bu	------	D	
6	----------	Hs	r10	----------	Bu	------	D	
6	----------	Hs	14.18	Oct. 5, 1950	Bu	------	D	
18	----------	Al	3.91	-----do-----	Bu	------	D	
24	----------	Al	9.10	-----do-----	Bu	------	D	
24	----------	Al	3.57	-----do-----	Cy, H	------	D	
18	----------	Al	8.36	-----do-----	----------	------	U	
24	----------	Al	3.67	-----do-----	S, E	6	D	
24	----------	Hs	r8	----------	S, E	5	D	
24	----------	Hs	49.10	Oct. 5, 1950	Cy, H	6	D	Water level, 48.14 ft below land surface, Apr. 15, 1953.
6	----------	Hs	r49	----------	Bu	------	D	
24	----------	Hs	r52	----------	J, E	6	D	
30	----------	Hs	69.16	Oct. 16, 1950	Bu	------	D	
24	White sand	Hs	r66	----------	J, E	5	D	Depth to top of water-bearing bed, 50 ft; thickness, 20+ ft. Chemical analysis in table 7.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3655-116	¾ mile south of Freemont	J. J. Keeling			Bo	r70
117	do	P. O. Wilkins		1940	Bo	r60
118	do	H. Spees			Bo	67
119	do	Floyd Keeland			Du	r45
120	½ mile south of Freemont	W. E. Farmer			Bo	60
121	do	James Brooks			Bo	71
122	do	C. B. Anderson	Ode Shelton		Dr	90
123	½ mile southwest of Freemont.	John Thompson			Du	41
124	do	R. E. King			Bo	22
125	¾ mile southwest of Freemont.	H. M. Thompson			Bo	59
126	do	H. L. Lawrence			Du	28
127	¾ mile south of Freemont	G. A. Spees			Bo	63
128	1 mile south of Freemont	W. T. Yarbrough			Du	31
129	do	E. O. Peyton	W. H. Ellis		Dr	r57
130	3¼ miles south of Freemont	R. J. McIntosh	Henry Harper		Du	50
131	½ mile south of Freemont	Charles Lyles	Casey & Case Foundation Co.		Bo	38
132	do	J. E. Wilkens	do		Bo	75
133	¾ mile south of Freemont	McCracken County Board of Education, Freemont School.	R. B. Elrod	1952	Dr	r68
134	Freemont	John C. Copper	James E. Jennings	1953	Bo	55
8835-3700-1	1 mile southwest of Woodlawn.	Roscoe Meadows			Du	r30
2	do	William Burgess			Du	r30
3	do	Mrs. Ellery Paxton.			Du	27
4	1¼ miles southwest of Woodlawn.	Frank Hovekamp			Du	39
5	do	A. L. Baggett			Du	r25
6	1½ miles southwest of Woodlawn.	R. C. Champion			Du	27
7	do	do			Du	43
8	do	Charles Hayden			Du	32
9	do	Minor Harrington			Du	44
10	do	B. J. Hovekamp		1900	Du	43
11	1¾ miles southwest of Woodlawn.	J. L. Draffen			Du	34
12	do	L. R. Wren		1938	Dr	r93
13	1½ miles southwest of Woodlawn.	L. Leidecker			Du	38
14	1¾ miles southwest of Woodlawn.	E. P. Henson		1949	Bo	42
15	2 miles southwest of Woodlawn.	Richard Shoulta			Du	54
16	do	do		1934	Du	37
17	2¼ miles southwest of Woodlawn.	Marvin A. Hart			Du	58
18	do	H. L. Lawrence			Du	52
19	do	Henry Leidecker			Du	r33
20	3 miles southwest of Woodlawn.	F. M. Weatherington.			Du	42

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
6		Hs	r64		J, E	5	D	
6		Hs	r55		Bu		D	
6		Hs	62.44	Apr. 15, 1953	J, E	5	D	
24		Hs	r39		J, E	6	D	
8		Hs	49.71	Oct. 16, 1950	Bu		D	
6		Hs	61.06	do			O	Altitude, 441 ft above mean sea level. Water-level measurements in table 18.
4	Sand	Hs	r60		J, E	3	D	
30		Hs	36.38	Oct. 16, 1950	Bu		D	
8		Hs	12.27	do	Bu		D	
6		Hs	48.92	do	Bu		D	
24		Hs	21.38	do	Bu		D	
8		Hs	56.21	do	Bu		D	Static water level, 56.79 ft below land surface, Apr. 15, 1953.
30		Hs	27.29	do	Bu		D	
2		Hs	r28		J, E	4	D	
24		Hs	46.27	Apr. 13, 1952	J, E	6	D	Chemical analysis in table 7.
24	Sand	Hs	35.59	Apr. 15, 1953	Bu		D	
24		Hs	61.58	do	J, E	5	D	
4	Sand	Hs	r55	Sept. 1952	J, E	26	C	Depth to top of water-bearing bed, 46 ft; thickness, 22 ft. 4 ft screen, no. 6 slot. Log on p. 187.
24	do	Hs	52.86	July 9, 1953	J, E	6	D	
36		Al	r10		S, E	5	D	
36		Al	r11		Bu		D	
36		Al	7.65	Aug. 9, 1950			U	
30		Al	8.73	do	Bu		S	Water-level measurements in table 19.
30		Al	r12		Bu		D	
48		Al	6.20	Aug. 9, 1950			U	
48		Al	12.35	do			U	Water-level measurements in table 19.
36		Al	9.88	Apr. 9, 1953	Bu		D	
36		Al	10.74	do	Bu		D	Depth to top of water-bearing bed, 48 ft; thickness, 3+ ft. Chemical analysis in table 7.
36		Al	14.95	do	Bu		D	Depth to top of water-bearing bed, 48 ft; thickness, 8+ ft.
24		Al	14.15	Aug. 9, 1950	Bu		D	Static water level, 10.95 ft below land surface, Apr. 9, 1953.
2		Al			Cy, E	3	D	
36		Al	8.08	Apr. 9, 1953	Bu		D	
8		Al	10.61	do	Bu		D	Depth to top of water-bearing bed, 45 ft; thickness, 1+ ft.
36		Al	6.25	Aug. 9, 1950			U	
24		Al	13.84	do			U	Water-level measurements in table 19.
36		Al	10.35	Aug. 11, 1950	Bu		S	
30		Al	9.95	Aug. 10, 1950	Bu		S	
36		Al	r21		Bu		D	
36		Ri	15.41	Aug. 11, 1950	Bu		S	Water-level measurements in table 19.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-21	3½ miles southwest of Woodlawn.	F. W. Kortz			Du	r22
22	3¾ miles southwest of Woodlawn.	W. G. Rikel			Du	r21
23	do	A. H. Rikel			Du	r21
24	do	J. C. Rikel			Du	r10
25	do	Mrs. Emma Hedge.			Du	r25
26	4¼ miles southwest of Woodlawn.	Clarence Babb			Bo	56
27	1¾ miles southwest of Woodlawn.	J. E. Smith			Bo	45
28	do	Edward Purcell			Bo	23
29	do	B. H. Clement			Du	32
30	do	Kenney Hines			Du	r55
31	do	A. T. Perry			Bo	r44
32	do	do			Du	24
33	2¼ miles west of Woodlawn	H. W. Helton			Du	r30
34	do	A. Arnold			Du	r22
35	do	S. Dunbar			Du	r22
36	2½ miles west of Woodlawn	Earl McKenny			Du	r23
37	do	Luther Whittemore.			Bo	r23
38	3 miles southwest of Woodlawn.	W. F. Bechtold			Du	r25
39	do	Thurman Walker			Bo	r20
40	do	N. F. Nelson			Du	19
41	2¾ miles southwest of Woodlawn.	M. Matheny			Du	r20
42	do	J. B. Hutchison			Bo	r15
43	do	Robert Massey			Du	11
44	2¾ miles west of Woodlawn	Burley Hayes			Du	r18
45	do	Carl Gregory			Du	r32
46	do	Arnold Sills			Du	r40
47	3 miles west of Woodlawn	Alvie Smith		1949	Du	r35
48	do	do			Bo	20
49	do	Jewell Dowdy			Bo	r35
50	do	J. C. Dodd			Bo	r23
51	do	Jeff Nelson			Bo	r38
52	do	Johnnie Draffen			Du	r40
53	do	Virgil Tucker			Du	r32
54	do	H. F. Champion		1930	Du	29
55	do	do		1945	Bo	37
56	do	C. A. Wickliffe			Du	49
57	3¾ miles southwest of Woodlawn.	Fanny Henson			Du	27
58	do	J. R. Peck			Du	40
59	do	Oswald Goins			Du	r37
60	do	J. B. Moss			Du	36
61	do	Hollie Babb			Du	39
62	do	H. V. Spees		1935	Du	38
63	do	N. C. Parks			Du	42
64	4 miles southwest of Woodlawn.	Crawford Babb			Du	36
65	do	Fred W. Babb		1933	Du	44
66	do	Harvey Dodson			Du	41
67	do	Earl Dodson			Du	r65
68	3¾ miles southwest of Woodlawn.	Matt Leak			Du	r42
69	do	R. D. Meadows			Du	40
70	3½ miles southwest of Woodlawn.	WKYB, Inc	R. B. Elrod	1950	Dr	r333
71	2¼ miles west of Woodlawn	Q. Jones			Du	r27

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
36		Al	r10		Bu		D	
24		Al	r17		Bu		D	
30		Al	r16		Cy, H		D	
30		Al	r5		S, E	6	D	
24		Hs	r18		Bu		D	
6	Sand	Hs	42.12	Mar. 30, 1953	Bu		D	
8		Al	11.60	Apr. 9, 1953	Bu		D	
6		Al	12.46	do	Bu		D	
24		Al	16.55	do	S, E	6	D	
36		Al	r20				U	
6		Al	r11		Bu		D	
36		Al	10.40	Aug. 11, 1950			U	Static water level, 10.77 ft below land surface, Apr. 9, 1953.
30		Al	r25		Bu		D	
36		Al	r11		Bu		D	
36		Al	r12		Bu		D	
36		Al	r11		Bu		D	
6		Al	r10		Bu		D	
30		Al	r5		Bu		D	
8		Al	r12		Bu		D	
36		Al	9.06	Sept. 11, 1950	Bu		D	
24		Al	r5		Bu		D	
8		Al	r7		Bu		D	
24		Al	5.41	Sept. 11, 1950	Bu		D	
36		Pl (?)	r5		Bu		D	Chemical analysis in table 7.
24		Pl (?)	r17		S, E	5	D	
24		Pl (?)	r10		S, E	5	D	
24	Sand	Pl (?)	r6		S, E	6	D	Depth to top of water-bearing bed, 22 ft; thickness, 2+ ft.
8		Pl (?)	3.66	Sept. 11, 1950			U	
6		Pl (?)	r5		Bu		D	
8		Pl (?)	r4.00		Bu		D	
8		Pl (?)	r5		Bu		D	
24		Pl (?)	r20		Bu		D	
36		Pl (?)	r17		Bu		D	
30		Pl (?)	12.18	Sept. 12, 1950			U	
8		Pl (?)	1.58	do			U	Depth to top of water-bearing bed, 35 ft; thickness, 3+ ft.
30		Pl (?)	2.00	do			U	
30	Gravel	Pl (?)	17.49	Mar. 30, 1953	J, E	5	D	Low pH.
24		Pl (?)	35.40	do	Bu		D	
24	Gravel	Pl (?)	r30		J, E	5	D	
36	Red sand	Hs	30.38	Mar. 30, 1953	J, E	6	D	
36		Hs	35.30	Sept. 13, 1950	Bu		D	
36	Brown sand	Hs	31.92	Mar. 30, 1953	Bu		D	Chemical analysis in table 7.
24		Hs	38.33	do	J, E	6	D	
24		Hs	34.26	do	Cy, E	5	D	
24	Sand	Hs	37.53	do	J, E	6	D	
18		Hs	35.01	do	Bu		D	
36	White sand	Hs	r45		J, E	5	D	
30		Hs	r37		Bu		D	
36		Hs	36.26	Sept. 13, 1950	Bu		D	
4	Gray sand	Ri	16.10	do	Cy, E	6	C	Specific capacity in table 6. Chemical analysis in table 7. Log on p. 188.
24		Al	r15		Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-72	2½ miles northwest of Woodlawn.	C. O. Bryant		1880	Du	r33
73	2¼ miles northwest of Woodlawn.	Clint Gibson		1948	Du	r16
74	1900 Harahan St., Paducah	Isaac Payne			Du	r35
75	2223 Mississippi St., Paducah.	A. F. Farrell			Du	r18
76	2410 Elm St., Paducah	Molly Torian			Bo	15
77	2409 Elm St., Paducah	J. P. Spears			Du	r20
78	do	do			Bo	r20
79	2103 Bridge St., Paducah	T. A. Jones & Sons		1927	Du	r40
80	1 mile west of Woodlawn	R. A. Streit			Du	23
81	do	B. E. Thomas			Du	21
82	do	L. W. Estes			Du	49
83	do	Harry Bridges			Du	r30
84	do	J. E. Pepper			Du	r30
85	do	Carl Woodford			Du	r50
86	do	Malcolm Bunch			Du	22
87	1¼ miles west of Woodlawn	J. C. Childers			Du	26
88	do	S. L. Browning		1950	Bo	r33
89	do	W. V. Schnuck			Du	r62
90	1½ miles west of Woodlawn	Ernest V. Murphy			Bo	r45
91	do	Edward Clark			Bo	r38
92	1½ miles northwest of Woodlawn.	Ollie B. Emery			Du	r55
93	do	Hoy Flood			Du	r35
94	do	L. Smith			Du	r28
95	1¼ miles northwest of Woodlawn.	H. L. Travis		1944	Bo	30
96	do	J. T. Pickens			Du	36
97	do	C. E. Steel			Bo	34
98	do	Cletice Bizzell			Du	41
99	1 mile northwest of Woodlawn.	Stewart Thompson.		1942	Du	r22
100	do	Mrs. A. Cherry			Du	r28
101	¾ mile west of Woodlawn	B. Downs			Du	32
102	do	L. L. Kelling			Du	r13
103	do	Dewey Hopkins			Du	14
104	1 mile west of Woodlawn	D. L. Garland			Du	19
105	do	Guthrie Hopkins			Du	r40
106	do	L. A. Stephenson			Du	22
107	do	do			Du	r22
108	1¼ miles west of Woodlawn	Leslie Coble			Du	26
109	do	W. T. Wilhams			Du	34
110	1 mile west of Woodlawn	E. S. Smith		1940	Du	27
111	2¾ miles west of Woodlawn	I. M. Griffin			Bo	r40
112	do	W. M. Block			Bo	28
113	do	Gilbert Wilson			Bo	39
114	do	Johnnie Garland			Du	r30
115	2½ miles west of Woodlawn	R. Reed			Du	r30
116	do	J. W. Younker			Du	r35
117	2¾ miles west of Woodlawn	C. H. Gibson			Du	r35
118	do	W. L. Ferguson			Du	r37
119	do	Lawrence Sanders			Du	34
120	do	O. C. Owings			Du	38
121	do	B. E. Thomas			Du	r57
122	do	W. T. Gardner			Du	31
123	do	B. B. Harper			Bo	25
124	do	Schneidman Greenhouses.			Du	35
125	do	W. A. Schmidt			Du	26
126	do	H. G. Chappell			Du	33
127	3 miles west of Woodlawn	Chris Burger			Du	38
128	do	Rose Schmidt			Du	30
129	do	N. C. Parls			Bo	r32

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
36		Al	r5		Bu		D	
16		Al	r9		Bu		D	
36		Al	r20		Bu		D	
36		Al	r9		Bu		D	
6		Al	8.30	July 19, 1950			U	Water-level measurements in table 19.
30		Al	r10				U	
6		Al	r10		Bu		D	
36		Al	r15		Cy, E	6	In	
24		Al	7.56	July 24, 1950			U	Water-level measurements in table 19.
36		Al	11.38	do			U	
36		Al	10.20	do			U	
36		Al	r12		Bu		D	
36		Al	r10		Bu		D	
36		Al	r15		Cy, H		U	
36		Al	9.41	July 12, 1950			U	
36		Al	10.91	do			U	Water-level measurements in table 19.
6		Al	r15		Cy, H		D	
36		Al	r12		J, E	6	D	
6		Al	r10		Bu		D	
6		Al	r10		Bu		D	
36		Al	r15		Bu		D	
36		Al	r15		J, E	6	D	
36		Al	r15		Cy, H		D	
8		Al	7.69	July 24, 1950			U	Water-level measurements in table 19.
36		Al	7.76	do			U	
6		Al	7.83	do			U	Water-level measurements in table 19.
24		Al	11.51	do			U	Chemical analysis in table 7.
24		Al	r10		Bu		D	
24		Al	r10				U	
36		Al	10.45	July 25, 1950			U	
36		Al	r4		Bu		D	
18		Al	7.19	July 28, 1950	Bu		U	
30		Al	7.05	do			U	
36		Al	r10		Bu		D	
24		Al	8.65	July 28, 1950			U	
30		Al	r10		Bu		D	
36		Al	12.53	July 28, 1950			U	
24		Al	24.43	do	Bu		S	
36		Al	12.43	do	Bu		S	
8		Pl (?)	r5		Bu		D	
8		Pl (?)	At surface.	Sept. 19, 1950			U	
8		Pl (?)	3.14	do			U	
24		Pl (?)	r24		Bu		D	
24		Pl (?)	r25		Bu		D	
30		Pl (?)	r30		Bu		D	
24		Pl (?)	r30		Bu		D	
30		Pl (?)	r7				U	
30		Pl (?)	22.65	Sept. 17, 1950	Bu		D	
30		Pl (?)	23.50	Sept. 12, 1950			U	Water-level measurements in table 19.
36		Pl (?)	r30				U	
36		Pl (?)	14.36	Sept. 12, 1950			U	
8		Pl (?)	17.44	do			U	
36		Pl (?)	22.17	do	Cy, E	8	D,Ir	
36		Pl (?)	22.87	do			U	
36	Sand and gravel.	Pl (?)	25.84	do			U	
36		Pl (?)	30.45	do			U	Water-level measurements in table 19.
36		Pl (?)	r15		Bu		D	
8		Pl (?)	r15		J, E	7	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-130	1½ miles northwest of Woodlawn.	James Tucker	W. H. Ellis	1949	Dr	r67
131	2¼ miles west of Woodlawn	Oliver Rives			Du	r20
132	do	Mrs. J. Presnell			Du	21
133	do	Burley Hays			Du	r30
134	3732 Washington St., Paducah.	H. H. Edwards			Bo	r35
135	3200 Lovelaceville Rd., Paducah.	Terrell Floral Co			Du	73
136	3201 Central Ave., Paducah	H. F. Moody		1923	Du	37
137	740 North 32d St., Paducah	R. M. Moody			Du	r35
138	620 Cruse Ave., Paducah	Wade Wall, Sr		1935	Du	r33
139	625 Cruse Ave., Paducah	Sam Carson			Du	r30
140	Berger Road, ¼ mile east of U. S. Highway 45 in Paducah.	E. J. Paxton, Jr	D. P. McNeely.	1916	Dr	r315
141	865 Levin Ave., Paducah	J. S. Jenkins			Du	r25
142	867 Levin Ave., Paducah	Hubert Killebrew		1918	Du	r30
143	3005 Trumble St., Paducah	Ruby Montague			Du	r28
144	721 McGuire Ave., Paducah	Robert Ross			Du	r25
145	714 McGuire Ave., Paducah	Fred Miles			Du	r28
146	751 McGuire Ave., Paducah	J. Utterback			Du	r28
147	753 McGuire Ave., Paducah	Will Coleman			Du	r25
148	821 McGuire Ave., Paducah	John Cousins			Du	r25
149	822 McGuire Ave., Paducah	D. Donaldson			Du	24
150	823 McGuire Ave., Paducah	Jim Travice			Du	r27
151	832 McGuire Ave., Paducah	Issac Watson			Du	r30
152	8th and Tennessee Sts., Paducah.	Lessor unknown		1888	Dr	r1, 250
153	1¾ miles south of Lone Oak	S. H. Browne	R. B. Elrod	1949	Dr	r95
154	1¾ miles north of Lone Oak	C. F. Boyd			Du	9
155	1½ miles north of Lone Oak	David M. Barkley	English	1948	Dr	r500
156	1¼ miles north of Lone Oak	State of Kentucky	Kentucky Department of Highways.		Du	9
157	do	W. M. Carson	Ode Shelton	1941	Dr	r450
158	do	Kenneth Clymer	Beekman Drilling & Contracting Co.	1951	Bo	r80
159	do	G. R. Noble			Du	27
161	1 mile northeast of Lone Oak	Milton Settle			Du	23
162	do	Arthur Grief			Du	8
163	2 miles north of Lone Oak	F. H. McGraw & Co., Inc.	Beekman Drilling & Contracting Co.	1951	Dr	r200
164	¾ mile north of Lone Oak	F. N. Sorell	Ode Shelton		Dr	r100
165	1 mile north of Lone Oak	W. C. Harton			Du	33
166	Lone Oak	A. L. Hunt	Ode Shelton		Dr	r40
167	¾ mile northeast of Lone Oak.	Blackburn & Reeves Cherokee Highlands.	Lowry Bros	1952	Bo	23
168	do	do	do	1952	Bo	29

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
2	Gravel	Pl (?)	r47		Cy, E	5	D	Depth to top of water-bearing bed, 50 ft; thickness, 17 ft. Cased to 63 ft.
24		Al	r10		Bu		D	
24		Al	12.37	Sept. 13, 1950	Bu		D	
36		Al	r12		S,E	5		
6		Al			Cy, H		U	
66		Al	54.00	July 1, 1950			U	60,000 gpd yield in 1937. Water-level measurements in table 18.
54		Al	18.00	July 7, 1950			U	Water-level measurements in table 19.
24		Al	r20		Bu		D	
42		Al	r18		Bu		D	
36		Al	r12		Bu		D	
4	Sand	Ri	r115		Cy, E	10	U	Depth to top of water-bearing bed, 309 ft; thickness, 6+ ft.
36		Al	r14		Bu		D	
36		Al	r15		Bu		D	
36		Al	r12		Bu		D	
36		Al	r12		Bu		D	
36		Al	r12		Bu		D	
36		Al	r12		Bu		D	
36		Al	r10		Bu		D	
36		Al	r21		Bu		S	
24		Al	9.29	July 7, 1950			U	
36		Al	r15		Bu		D	
36		Al	r13		Bu		D	
							To	Log on p 189.
4	White sand	Hs	r91		Cy, E	3	D	Depth to top of water-bearing bed, 85 ft; thickness, 8+ ft.
36		Pl(?)	2.00	Feb. 25, 1952			U	
6	White sand	Ri	r125		Cy, E	6.5	D	
72		Hs	3.10	Feb. 25, 1952	S, E	10	D	
6 to 4		Ri	r272		Cy, E	6	D	
6		Pc	2.20	Feb. 26, 1952	J, E	8	D	
36	Sand	Hs	26.20	do	Bu		D	
24		Hs	At surface	do			U	
24	Gravel	Pl(?)	3.60	do	Bu		D	
3	Sand	Ri	r35		J, E	6	D	Chemical analysis in table 7. Log on p. 189.
3	do	Hs	r30		Cy, E	4	U	Depth to top of water-bearing bed, 16 ft; thickness, 64 ft. Chemical analysis in table 7. Log on p. 189.
30	do	Hs	29.81	Nov. 5, 1952	Cy, E	6	O	Water-level measurements in table 18.
4	Gravel	Pl (?)	r33		J, E	5	U	Depth to top of water-bearing bed, 12 ft; thickness, 28+ ft.
12	Red medium sand.	Hs	16.92	Mar. 6, 1952			T	Depth to top of water-bearing bed, 18 ft; thickness, 5+ ft. Log on p. 190.
12	Brown fine sand.	Hs	6.00	Mar. 7, 1952			T	Depth to top of water-bearing bed, 23 ft; thickness, 6 ft. Log on p. 190.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-169	¾ mile northeast of Lone Oak.	Blackburn & Reeves Cherokee Highlands.	Lowry Bros.	1952	Bo	33
170	do	do	do	1952	Bo	31
171	do	do		1952	Du	42
172	do	do	Lowry Bros.	1952	Bo	26
173	do	T. N. Esch		1942	Bo	25
174	do	Leon Carney			Du	16
175	do	McCracken County Sanitarium.	Childers	1936	Dr	r444
176	do	R. M. Ross			Du	24
177	1 mile east of Lone Oak	McCracken County Sanitarium.			Du	33
178	do	W. E. Boaz		1948	Du	29
179	do	J. D. McIntosh		1951	Du	42
180	1¼ miles east of Lone Oak	J. W. Bennett	Beekman Drilling & Contracting Co.	1951	Bo	42
181	1½ miles east of Lone Oak	Jessie Asher			Du	26
182	do	Isadore Saltzman			Du	29
183	1 mile east of Lone Oak	Southwood Country Club.	D. P. McNeely		Dr	r436
184	½ mile east of Lone Oak	C. J. Milton	C. J. Milton		Bo	r49
185	do	Thomas Chapman			Du	34
186	do	A. L. Draffen			Du	36
187	do	G. A. Farthing			Du	33
188	Lone Oak	Idabell Grey			Bo	40
189	do	Garland Ligon		1936	Du	r46
190	do	L. E. Sanderson			Du	41
191	do	Mrs. Tom Orr			Du	53
192	do	Mrs. William Jones	Ode Shelton		Dr	r60
193	¾ mile north of Lone Oak	C. R. McClure			Dr	r60
194	do	A. L. Rydzewski			Du	35
195	1 mile north of Lone Oak	M. L. Hunter	Ode Shelton	1940	Dr	r62
196	Lone Oak	Elvis Doyle			Du	31
197	do	Mrs. J. R. Thompson.			Du	r50
198	do	John Rushing			Du	35
199	do	H. M. Yarborough			Bo	20
200	do	J. H. Mueller			Du	34
201	½ mile northeast of Lone Oak.	G. E. Traughber			Du	33
202	¾ mile northeast of Lone Oak.	Mrs. Bessie Ross			Du	30
203	1 mile northeast of Lone Oak	Amy Judd Yopp			Du	17

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
12	Sand	Hs					T	Depth to top of water-bearing bed, 15 ft; thickness, 18+ ft. Log on p. 190.
12	do	Hs	7.00	Mar. 9, 1952			T	Depth to top of water-bearing bed, 23 ft; thickness, 4 ft. Log on p. 191.
60	do	Hs					T	Depth to top of water-bearing bed, 15 ft; thickness, 5 ft. Log on p. 191.
12	do	Hs					T	Depth to top of water-bearing bed, 10 ft; thickness, 16+ ft. Log on p. 191.
8	do	Hs	9.35	June 16, 1952	S, E	4	U	Chemical analysis in table 7.
24	Gravel	Pl(?)	11.53	do			U	
6		Ri	r150		Cy, E	14	D	
30	Sand and gravel.	Pl(?)	12.02	June 16, 1952	J, E	4	U	
30	do	Pl(?)	28.67	do	Bu		U	
24	Sand	Pl(?)	24.38	do	J, E	8	D	
24	Sand and gravel.	Pl(?)	40.60	do	Bu		D	Bottomed in clay.
6	do	Pl(?)	19.70	do	Bu		D	Do.
36	Sand	Hs	17.10	do	Bu		D	
24	do	Hs	21.00	do	Cy, E	4	D	
8	do	Ri	r116		Cy, E	113	D	Depth to top of water-bearing bed, 377 ft; thickness, 23 ft. Chemical analysis in table 7.
4	do	Hs	r35		J, E	6	D	Depth to top of water-bearing bed, 29 ft; thickness, 28 ft.
24		Hs	28.50	June 16, 1952	Bu		D	
24	Sand and gravel.	Pl(?)	30.00	do			U	
24	Sand	Pl(?)	31.50	do			U	
8	Sand and gravel.	Pl(?)	33.10	do	Bu		D	
36	White sand	Hs	r40				U	
24		Hs	35.45	Oct. 10, 1952			U	
24		Hs	50.22	do			U	
4	Sand	Hs	r50		Cy, E	4	U	
6		Hs	r43		J, E	8	U	
24	Sand	Hs	30.45	Oct. 10, 1952	J, E	6	O	Specific capacity in table 6. Water-level measurements in table 18.
4	White sand	Hs	r45		Cy, E	4	U	
24		Pl(?)	28.03	Oct. 15, 1952			U	
36		Pl(?)	r40				U	
24	Gravel	Pl(?)	24.57	Oct. 10, 1952			U	
6		Pl(?)	15.90	do			U	
24		Pl(?)	28.05	do	J, E	6	D	
24	Gravel	Pl(?)	27.21	do			U	
30		Pl(?)	22.96	do			O	Altitude 465.03 ft above mean sea level. Water-level measurements in table 18.
24		Hs	6.74	do			O	Altitude, 440.13 ft above mean sea level. Water-level measurements in table 18.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-204	1¼ miles northeast of Lone Oak.	Yopp Nursery			Du	r27
205	do	J. P. Smith			Du	22
206	do	Cletus Clark			Du	13
207	Lone Oak	M. T. Robertson			Du	15
208	do	E. R. Harton			Du	17
209	do	N. C. Harton			Du	26
210	do	Esther Futrell			Du	39
211	do	Mrs. C. B. Waltman.			Bo	43
212	do	T. V. Williams			Bo	45
213	do	Victor Sanderson		1940	Du	38
214	do	F. E. Harris			Du	46
215	do	Stanley Phipps			Du	39
216	do	Carmon L. Hodges.			Du	41
217	do	Rebecca Masters			Du	41
218	do	Charley Davenport.			Du	34
219	do	C. A. Richardson			Du	37
220	do	R. M. Waltmon			Du	32
221	½ mile southeast of Lone Oak.	Harry Ross			Du	22
222	do	do			Du	44
223	do	do			Du	42
224	¾ mile southeast of Lone Oak.	do		1948	Du	41
226	1 mile southeast of Lone Oak	do			Du	20
227	1½ miles southeast of Lone Oak.	Alla Starr		1916	Du	44
228	do	do			Dn	24
229	1½ miles east of Lone Oak	Jessie Lawrence			Du	22
230	do	Joe Starr		1942	Du	23
231	2 miles southeast of Lone Oak.	T. R. Hoover			Du	17
232	1¾ miles east of Lone Oak	Fannie Jones Terrell.			Du	47
233	do	J. C. Butler			Du	25
234	do	H. W. Perdew			Du	25
235	1½ miles east of Lone Oak	F. W. Perdew		1939	Du	32
236	do	Boyd Jones			Du	34
237	do	J. M. Smith			Du	34
238	do	J. E. Hayes	G. W. Harper		Dr	r450
239	2½ miles northeast of Lone Oak.	J. W. Rayburn			Dr	r227
240	1¾ miles east of Lone Oak	Edgar Owings			Du	33
241	do	D. G. Butler			Du	17
242	do	Mrs. Cletus Wurth			Du	27
243	2 miles east of Lone Oak	J. E. Hayes	G. W. Harper		Dr	r161
244	do	do			Bo	24
245	do	L. V. Stavely			Du	34
246	do	D. D. Bean			Bo	40
247	2¼ miles east of Lone Oak	Margaret Sanders			Du	54
248	2 miles northeast of Lone Oak.	Edward Hayden		1952	Du	29
249	2¼ miles east of Lone Oak	Lear Sills			Du	38
250	Lone Oak	W. R. Osborne, Jr			Du	38
251	do	Mrs. P. M. Barksdale.			Du	33
252	do	Wayne Housman			Du	41
253	do	A. R. Tucker			Du	42
254	¾ mile south of Lone Oak	M. A. Lewis			Du	45
255	do	R. R. Shaffer		1948	Du	29
256	do	John Vincent		1935	Du	82
257	1¼ miles south of Lone Oak	Marie Sanderson	Ode Shelton		Dr	r65

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24	Sand	Hs	r21		J, E	6	Ir	
30		Hs	15.87	Oct. 15, 1952	S, E	4	D	
24	Gravel	Pl(?)	10.62	do	S, E	6	D	
24		Pl(?)	8.23	Oct. 17, 1952			U	
24		Pl(?)	7.76	do	S, E	6	D	
24		Pl(?)	19.37	do	S, E	4	D	
36		Pl(?)	34.29	do			U	
8		Pl(?)	34.58	do	Bu		D	
6		Pl(?)	38.78	Oct. 20, 1952			U	
24		Pl(?)	31.85	do	J, E	8	D	
24		Pl(?)	36.03	do			U	
36		Pl(?)	33.76	do			U	
30		Pl(?)	35.57	do			U	
24		Pl(?)	37.86	do			U	
30		Pl(?)	27.11	do	Bu		D	
24		Pl(?)	29.68	do			U	
36		Pl(?)	26.58	do			U	
36		Pl(?)	16.21	do	S, H		D	
30	Sand	Pl(?)	40.30	do	J, E	6	D	Chemical analysis in table 7.
30		Pl(?)	38.04	do	Cy, E	6	C	
36	Sand and gravel.	Pl(?)	36.79	do			U	
24		Pl(?)	18.46	do	Bu		D	
24	Sand	Hs	8.19	do	Bu		D	
2		Pl(?)	13.05	do	S, H		U	
24		Pl(?)	20.63	do	J, E	8	D	
24		Pl(?)	18.65	do	Bu		D	
30		Pl(?)	10.07	do	Bu		D	
24	Sand and gravel.	Pl(?)	36.11	do	Bu		D	
24	do	Pl(?)	22.69	do	Bu		D	
24	Gravel	Pl(?)	21.55	do	Bu		D	Temperature 60°F, Oct. 20, 1952.
24	Sand and gravel.	Pl(?)	23.17	do	Bu		D	
24	do	Pl(?)	27.01	do	J, E	8	D	
30		Pl(?)	28.99	do			U	
6		Ri	r110		Cy, E	6	D	
4	Sand	Ri	r84				U	Depth to top of water-bearing bed, 204 ft; thickness, 23+ ft.
24		Pc	14 82	Oct. 28, 1952			U	Clay from 12 to 33 ft.
24	Gravel	Pl(?)	10.82	do	Bu		D	
24		Pl(?)	8.65	do			U	
4	Gray sand	Ri	38.12	do			O	Depth to top of water-bearing bed, 150 ft; thickness, 11+ ft. Log on p. 192. Water-level measurements in table 18.
8	Gravel	Pl(?)	8.16	do			U	
24		Pl(?)	7.83	do			U	
8		Pl(?)	26.99	do			U	
24		Pl(?)	27.88	do			U	
24	Sand	Pl(?)	22.57	do	Bu		D	Depth to top of water-bearing bed, 8 ft; thickness, 21+ ft.
24		Pl(?)	16.22	do			U	
24		Pl(?)	35.28	Oct. 29, 1952			U	
24		Pl(?)	28.80	do			U	
24	Gravel	Pl(?)	34.93	do	Bu		D	
36	Sand	Hs	29.44	do	Bu		D	
24		Hs	27.90	do	Cy, E	4	D	Bottomed in clay.
24	Sand and gravel.	Hs	23.05	do	J, E	8	D	
24	Sand	Hs	77.43	do	Cy, E	5	D	
6	do	Hs	r50		Cy, E	5	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-258	1½ miles south of Lone Oak	Earl P. Washam		1941	Dr	r78
259	do	Edward Hansen		1943	Du	62
260	1¼ miles southeast of Lone Oak.	Homer Skaggs		1952	Du	49
261	1½ miles southeast of Lone Oak.	Noah Schmidt			Du	27
262	1¾ miles southeast of Lone Oak.	Mary Helen Schmidt.			Du	r28
263	1½ miles south of Lone Oak	J. V. Washam			Bo	r69
264	2 miles south of Lone Oak	S. H. Venable			Du	8
265	do	do			Du	8
266	1½ miles south of Lone Oak	Cyrel Henderson			Du	41
267	2¼ miles southeast of Lone Oak.	Kurt Jones			Du	33
268	2½ miles southeast of Lone Oak.	A. L. Sloan			Du	48
269	2¾ miles southeast of Lone Oak.	George Tucker			Bo	43
271	2½ miles southeast of Lone Oak.	Anna Wilkins			Du	14
272	2¾ miles southeast of Lone Oak.	Howard Lane			Du	47
273	2½ miles southeast of Lone Oak.	Ewing Hayden			Du	43
274	do	Jim Pinkerton			Du	22
275	2½ miles south of Lone Oak	Leo Pundsack	Ode Shelton		Dr	r67
276	do	do			Bo	r45
277	2¾ miles southeast of Lone Oak.	J. B. Allen			Du	40
278	2¼ miles southeast of Lone Oak.	Grant Herzog		1952	Du	17
279	do	Rollie Watson			Du	12
280	do	H. J. Garritson			Du	33
281	do	J. E. Hogan			Du	30
282	2 miles southeast of Lone Oak.	Wilson Bogard		1940	Du	12
283	2 miles east of Lone Oak	Mrs. W. T. David son.			Du	12
284	do	Bob Sanderson			Du	13
285	do	Eugene Boatright			Du	27
286	do	G. J. Boatright		1921	Du	29
287	do	Elizabeth Hopkins.			Bo	35
288	do	C. W. Payne			Du	37
289	1¼ miles north of Lone Oak	Frank Melber			Du	25
290	1¾ miles north of Lone Oak	William A. Trevathan.	Larry Yancy	1946	Dr	r318
291	2 miles north of Lone Oak	Frank C. Bougeno			Du	56
292	do	W. E. Hopwood	Virgel Elrod	1952	Bo	44
293	2½ miles north of Lone Oak	Mrs. W. P. Paxton		1922	Dr	r400
294	do	Dumas Fields		1922	Dr	r212
295	do	Gabriella Dawson		1919	Du	27
296	3 miles southwest of Woodlawn.	Robert Wood	W. C. Thompson.	1952	Bo	49
297	2¾ miles west of Woodlawn	M. W. Taylor	do	1952	Bo	r50
298	1½ miles northwest of Woodlawn.	James Tucker	W. H. Ellis	1949	Dr	r105
299	3¾ miles southwest of Woodlawn.	E. L. Spees		1944	Du	41
300	4¼ miles southwest of Woodlawn.	Rudolph Qualls	Casey & Case Foundation Co.	1953	Bo	39
301	do	W. A. McCormack			Du	44

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
6 to 2	White sand	Hs	r64		Cy, E	5	D	
24	Sand	Hs	59.39	Oct. 29, 1952	J, E	5	D	Depth to top of water-bearing bed, 2 ft; thickness, 58 ft. Chemical analysis in table 7.
24	do	Hs	36.73	do	Bu		D	
30		Pl(?)	24.11	do	Bu		D	
24	Gravel	Pl(?)	r20		Cy, E		D	
6	Sand	Hs	42.55	Oct. 29, 1952	J, E	6	D	
36	Gravel	Pl(?)	6.12	Oct. 30, 1952	Bu		S	
24	do	Pl(?)	6.37	do	Bu		D	
24	White sand	Hs	34.00	do	Bu		D	Depth to top of water-bearing bed, 38 ft; thickness, 6+ ft.
24		Hs	31.79	do	Bu		D	
24		Hs	41.84	do			U	
6		Hs	37.71	do	Bu		D	
24	Sand	Hs	10.58	do	Bu		D	
24	do	Hs	45.80	do	Bu		D	
24		Hs	37.53	do	Bu		D	
24		Hs	15.70	do	Bu		D	
4	Sand	Hs	r52		Cy, H		D	
8		Hs	r35		J, E	6	D	
24	Sand	Hs	30.57	Oct. 30, 1952	Bu		D	
24	Sand and gravel.	Pl(?)	15.67	do	Bu		D	
24	do	Pl(?)	11.44	do	Bu		D	
24		Pl(?)	21.39	do	Bu		D	
36	Gravel	Pl(?)	22.75	do	Bu		D	
24	do	Al	9.75	Nov. 6, 1952	Bu		D	
24		Pl(?)	10.65	do			U	
24		Pl(?)	9.49	do	Bu		D	
36		Pl(?)	12.40	do	S, E	4	D	Bottomed in clay. Chemical analysis in table 7.
24		Pl(?)	13.98	do	S, E	4	D	Bottomed in clay.
8		Pl(?)	19.80	do	Bu		D	
24		Pl(?)	12.32	do			U	
24	Gravel	Pl(?)	17.06	Nov. 7, 1952	S, E	3	D	
2	Sand	Ri			Cy, E	3	D	Depth to top of water-bearing bed, 275 ft; thickness, 43+ ft.
24		Pc	40.55	Nov. 7, 1952	J, E	5	D	
8		Pl(?)	30.62	do	J, E	8	D	Chemical analysis in table 7.
6		Ri			T, E	12	D	
6		Ri	r70		Cy, L	4	U	
30	Gravel	Pl(?)	18.94	Nov. 8, 1952	Bu		D	
6	do	Al	17.91	Nov. 19, 1952	Bu		D	Depth to top of water-bearing bed, 30 ft; thickness, 21+ ft.
6	do	Pl(?)	r25	Oct. 12, 1952	Bu		D	Log on p. 192.
2	Sand	Al	r40				T	Depth to top of water-bearing bed, 99 ft; thickness, 6+ ft.
24	Gravel	Pl(?)	36.15	Mar. 30, 1953	Bu		D	
24	Red sand	Hs	27.60	do	Bu		D	Depth to top of water-bearing bed, 16 ft; thickness, 23 ft. Chemical analysis in table 7. Log on p. 192.
24	Sand	Hs	39.26	do	Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3700-302	1½ miles southwest of Woodlawn.	B. Purcell			Du	28
303	3¾ miles southwest of Woodlawn.	R. E. Purcell	Royster and McAlpin.	1953	Dr	r220
304	140 North 40th St., Paducah.	R. E. Peters	Casey & Case Foundation Co.	1953	Bo	39
305	Schneidman Road	Lawrence Sanders.	Royster and McAlpin.	1953	Dr	r240
306	1 mile east of Lone Oak	J. D. McIntosh	do	1953	Dr	r407
307	¾ mile east of Lone Oak	Lakeview Country Club Subdivision.	Casey & Case Foundation Co.	1952	Bo	30.3
308	do	do	do	1952	Bo	35
309	1 mile east of Lone Oak	do	do	1952	Bo	25
310	do	do	do	1952	Bo	24.5
311	do	do	do	1952	Bo	34
312	1¼ miles north of Lone Oak.	Fred W. Bray	Royster and McAlpin.	1953	Dr	r377
313	2 miles east of Lone Oak	A. A. Wurth	A. A. Wurth		Bo	85
314	1¾ miles north of Lone Oak	Everett E. Sinclair.			Du	14
315	2 miles north of Lone Oak	A. P. Dahler	James E. Jennings.		Bo	32
316	2d and Ohio Sts., Paducah.	City of Paducah	U. S. Corps of Engineers.	1939	Dr	23
317	3d and Husbands Sts., Paducah.	do	do	1939	Dr	27
318	3d and Elizabeth Sts., Paducah.	do	do	1939	Dr	71
319	2 miles southwest of Woodlawn.	do	do	1939	Dr	18
320	2¾ miles southwest of Woodlawn.	do	do	1939	Dr	24
321	3¼ miles southwest of Woodlawn.	do	do	1939	Dr	27
322	3½ miles southwest of Woodlawn.	do	do	1939	Dr	16
323	do	do	do	1939	Dr	9
8835-3705-1	621 North 7th St., Paducah.	John Waters			Du	r29
2	626 Wagoner St., Paducah	Archie Emerson			Du	21
3	630 Wagoner St., Paducah	Ethel Kennedy			Du	r20
4	do	E. D. Kennedy			Du	19
5	635 Wagoner St., Paducah	Doris Roetties			Du	r32
6	1302 North 8th St., Paducah.	Mose McCracken			Du	39
7	1412 North 8th St., Paducah.	Milton Walker			Du	21
8	10th and Flournoy Sts., Paducah.	Metzger Bros.		1937	Du	45
9	1845 North 8th St., Paducah.	Herbert Riley			Du	21
10	Irvin Cobb Bridge, Paducah	State of Kentucky.	Kentucky Department of Highways.		Dr	38
11	do	do	do		Dr	38
12	do	do	do		Dr	36
13	do	do	do		Dr	37
14	do	do	do		Dr	18
15	do	do	do		Dr	30
16	do	do	do		Dr	23
17	do	do	do		Dr	68
18	do	do	do		Dr	68
19	do	do	do		Dr	75
20	do	do	do		Dr	106
21	2830 Park Ave., Paducah	Charles Penkey		1915	Bo	r28
22	3006 Park Ave., Paducah	Mrs. H. Rickerd		1941	Du	r28

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	----------	Al	11.78	Apr. 9, 1953	J, E	------	D	
2	Sand-------	Ri	r70	----------	J, E	7.5	D	
24	----------	Pc	----------	----------	-------	------	T	Log on p. 192.
2	Sand-------	Ri	r70	----------	J, E	7.5	D	Do.
2	-----do-----	Ri	r107	----------	J, E	3.5	D	Do.
24	-----do-----	Hs	26.8	June 10, 1952	-------	------	T	Do.
24	-----do-----	Hs	----------	----------	-------	------	T	Log on p. 194.
24	-----do-----	Hs	----------	----------	-------	------	T	Do.
24	-----do-----	Hs	----------	----------	-------	------	T	Do.
24	-----do-----	Hs	26.5	June 10, 1952	-------	------	T	Do.
3	Silty sand---	Ri	r100	June 30, 1953	J, E	18	D	Depth to top of water-bearing bed, 371 ft; thickness, 6 ft. Bedrock at 456 ft. Temperature6[illegible] (?)°F. Log on p. 195.
24	----------	Pl	15.02	Mar. 10, 1954	J, E	------	D	Drawdown test. Capacity of pump, 8+ gpm.
2	----------	Al	----------	----------	-------	------	Tc	Log on p. 195.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Log on p. 196.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
28	----------	Al	21.62	July 10, 1950	-------	------	U	Water-level measurements in table 19.
42	----------	Al	18.70	-----do-----	Bu	------	D	Chemical analysis in table 7.
42	----------	Al	r15	----------	-------	------	U	
28	----------	Al	16.39	July 10, 1950	-------	------	U	
48	----------	Al	r26	----------	Bu	------	D	
36	----------	Al	13.23	July 10, 1950	-------	------	O	Water-level measurements in table 18.
24	----------	Al	10.50	-----do-----	-------	------	U	
48 to 42	Red gravel--	Al	13.37	July 6, 1950	-------	------	U	Water-level measurements in table 19.
36	----------	Al	10.50	July 10, 1950	Bu	------	D	
2	----------	Al	----------	----------	-------	------	Tc	Log on p. 196.
2	----------	Al	----------	----------	-------	------	Tc	Log on p. 197.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Log on p. 198.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
2	----------	Al	----------	----------	-------	------	Tc	Do.
24	----------	Al	r20	----------	Bu	------	D	
28	----------	Al	r12	----------	Bu	------	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3705-23	1½ miles southeast of Cecil	C. W. Absher			Du	24
24	do	Walter Evans			Du	r35
25	1¼ miles east of Cecil	Louis Schmidt, Jr.	Casey & Case Foundation Co.	1952	Bo	r26
26	Cecil	Garfield Green			Du	11
27	½ mile north of Cecil	Woodrow Wilson			Du	26
28	Cecil	Charles E. Bichon			Du	r20
29	do	Alice Marley			Du	r20
30	do	J. Corneal			Du	15
31	Shady Acres Trailer Park, Cecil.	Phillip Greenwell		1951	Du	21
32	do	do		1952	Du	23
33	Cecil	Ray McCutchen		1940	Du	16
34	do	do		1948	Du	23
35	do	do		1951	Du	16
36	McCutchen Green House, Cecil.	W. F. McCutchen		1920	Du	r32
37	¼ mile east of Cecil	D. R. Moody		1922	Du	r15
38	do	Roy McCutchen		1910	Du	15
39	½ mile east of Cecil	Mac & Mac Trailer Court.			Du	23
40	do	do		1951	Du	16
41	do	Copacabana			Du	18
42	Cecil	Paul Rottgering		1951	Du	31
43	¼ mile southeast of Cecil	Carlos Elkins			Bo	36
44	do	Robert Sutton			Bo	r35
45	Cecil	Paul Legcay		1902	Du	31
46	½ mile southeast of Cecil	J. W. Luigs			Bo	32
47	½ mile south of Cecil	Dexter Howell			Du	r45
48	do	S. C. Bohanan			Du	r35
49	¼ mile east of Cecil	C. H. Larry			Du	r35
50	½ mile east of Cecil	F. C. Russell			Du	24
51	do	B. W. Browne			Du	26
52	do	J. V. Bacon			Du	21
53	do	C. R. Waldon			Du	34
54	do	B. J. Rudolph			Du	37
55	¾ mile east of Cecil	Robert Howard			Du	23
56	do	R. L. Potter			Du	41
57	do	T. F. Henley			Du	r35
58	do	C. L. Dudley			Bo	r30
59	do	F. H. Metzler			Du	33
60	¾ mile east of Cairo	do			Du	34
61	¾ mile east of Cecil	Robert Vannerson			Du	24
62	1 mile east of Cecil	W. A. Bradford		1940	Du	29
63	do	Mrs. W. E. Young			Du	26
64	do	Charles Leneave			Du	r30
65	do	F. H. Metzler		1949	Du	25
66	do	T. E. Bell	W. C. Thompson.	1952	Bo	32
67	do	F. H. Metzler			Du	28
68	do	Ruby Simmons			Bo	26
69	do	Frank Ashley			Bo	24
70	do	Claude Thompson.			Bo	26
71	do	Mrs. Henry Baumer.			Du	24
72	do	Rayford Simmons.			Du	29
73	do	H. J. Ullerich			Du	46
74	do	do			Du	38
75	1¼ miles east of Cecil	J. A. Nelson			Du	r30
76	do	Minnie Gramse			Du	39

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24	----------	Al	15.08	July 31, 1952	------	------	U	
24	Gravel------	Al	r25	----------	J, E	6	D	
24	Coarse gravel.	Pl(?)	r22	----------	Bu	------	D	Log or p. 199.
24	----------	Pl (?)	7.57	July 21, 1952	Bu	------	D	
30	----------	Pl (?)	17.10	-----do-------	Bu	------	D	
30	----------	Pl (?)	r10	----------	S, E	4	D	
30	----------	Pl (?)	r10	----------	S, E	4	D	
30	Sand------	Pl (?)	9.79	July 24, 1952	S, E	4	D	
24	Sand and gravel.	Pl (?)	13.49	-----do-------	S, E	8	C	
24	-----do------	Pl (?)	20.15	-----do-------	J, E	6	C	
24	Gravel------	Pl (?)	11.94	-----do-------	Bu	------	D	Temperature 58°F, July 24, 1952.
24	Sand and gravel.	Pl (?)	13.19	-----do-------	S, E	4	D	Specific capacity in table 6.
24	-----do------	Pl (?)	10.99	-----do-------	Bu	------	D	
48	-----do------	Pl (?)	r20	----------	J, E	6	D	
36	-----do------	Pl (?)	r11	----------	S, E	6	D	
36	-----do------	Pl (?)	8.33	July 24, 1952	S, E	6	D	
30	-----do------	Pl (?)	20.25	-----do-------	J, E	6	C	
24	-----do------	Pl (?)	11.74	-----do-------	J, E	6	C	Chemical analysis in table 2.
36	-----do------	Pl (?)	12.28	-----do-------	S, E	5	C	
24	-----do------	Pl (?)	25.25	-----do-------	J, E	6	D	
8	Gravel------	Pl (?)	26.26	-----do-------	Bu	------	D	
8	Sand and gravel.	Pl (?)	r25	----------	J, E	4	D	
30	-----do------	Pl (?)	21.07	July 24, 1952	J, E	6	D	
8	-----do------	Pl (?)	23.21	-----do-------	Bu	------	D	
36	-----do------	Pl (?)	r25	----------	Cy, E	5	D	
36	-----do------	Pl (?)	r25	----------	J, E	6	D	
24	----------	Pl (?)	r25	----------	J, E	6	D	
36	Sand and gravel.	Pl (?)	18.02	July 24, 1952	J, E	6	D	
24	-----do------	Pl (?)	10.40	-----do-------	S, H	------	S	
24	-----do------	Pl (?)	11.42	-----do-------	Bu	------	D	
24	----------	Pl (?)	28.14	-----do-------	J, E	6	D	
36	Sand and gravel.	Pl (?)	30.84	-----do-------	Bu	------	D	
24	-----do------	Pl (?)	15.98	-----do-------	Bu	------	D	
30	-----do------	Pl (?)	34.78	-----do-------	J, E	5	D	
24	-----do------	Pl (?)	r30	----------	J, E	6	D	
8	-----do------	Pl (?)	r25	----------	J, E	6	D	
24	----------	Pl (?)	27.01	July 25, 1952	Bu	------	D	
24	Sand and gravel.	Pl (?)	25.61	-----do-------	J, E	8	D	
24	----------	Pl (?)	16.35	-----do-------	J, E	8	D	
24	----------	Pl (?)	17.98	-----do-------	J, E	7	D	
24	----------	Pl (?)	18.58	-----do-------	J, E	8	D	
24	----------	Pl (?)	r18	----------	S, E	3	D	
24	Sand and gravel.	Pl (?)	20.32	July 25, 1952	J, E	4	D	
8	Gravel------	Pl (?)	16.28	-----do-------	Bu	------	D	
24	----------	Pl (?)	16.54	-----do-------	Bu	------	D	
8	Sand and gravel.	Pl (?)	16.98	-----do-------	Bu	------	D	
8	-----do------	Pl (?)	16.79	-----do-------	Bu	------	D	
8	-----do------	Pl (?)	15.81	-----do-------	Bu	------	D	
24	----------	Pl (?)	14.59	-----do-------	Bu	------	D	
30	Sand and gravel.	Pl (?)	20.27	-----do-------	J, E	7	D	
30	----------	Pl (?)	35.18	-----do-------	J, E	6	D	
30	Sand and gravel.	Pl (?)	31.17	-----do-------	------	------	U	
24	----------	Pl (?)	r20	----------	J, E	8	D	
30	Sand and gravel.	Pl (?)	32.72	July 25, 1952	J, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8835-3705-77	1½ miles east of Cecil	Mrs. Henry Baumer.			Du	35
78	do	do			Du	29
79	do	Louis Schmidt			Du	30
80	do	do			Du	r30
81	Rottgering Greenhouse, 1¾ miles east of Cecil.	W. F. Rottgering			Du	r40
82	1½ miles east of Cecil	C. E. McCutchen			Du	29
83	do	do			Du	24
84	1¼ miles south of Cecil	W. R. Osborne			Du	89
85	do	Edward Darnell			Du	71
86	do	A. L. Clark			Du	33
87	do	Leon Jones			Du	37
88	do	A. F. Warren			Du	44
89	do	J. W. Houser		1944	Du	36
90	do	O. E. Houser			Du	r35
91	1¼ miles southeast of Cecil	J. C. Johnson			Du	r45
92	1½ miles southeast of Cecil	Frank Dennis			Du	30
93	do	R. E. Goodman Trailer Park.		1946	Du	25
94	do	Robert Belcher		1912	Du	27
95	do	Mrs. L. D. Potter			Du	35
96	1¼ miles southeast of Cecil	Minnie Gramse			Du	21
97	do	E. W. Anglin		1946	Bo	18
98	do	Claude Harris			Bo	18
99	do	E. W. Anglin			Du	22
100	do	S. C. Metcalf			Bo	22
101	do	C. S. Pirtle			Bo	26
102	1½ miles southeast of Cecil	Mrs. W. C. Hastings.			Bo	r25
103	1¼ miles south of Cecil	State of Kentucky	Kentucky Department of Highways.	1951	Dr	41
104	do	do	do	1951	Dr	56
105	1½ miles southeast of Cecil	City of Paducah	U. S. Corps of Engineers.	1939	Dr	13
106	do	do	do	1939	Dr	16
107	1½ miles east of Cecil	do	do	1939	Dr	14
108	do	do	do	1939	Dr	17
109	Near Helen St. and St. Louis Ave., Paducah.	do	do	1939	Dr	26
110	Near 8th and Julia Sts., Paducah.	do	do	1939	Dr	6
111	Near 8th and Pine Sts., Paducah.	do	do	1939	Dr	17
112	Near 6th and Terrell Sts., Paducah.	do	do	1939	Dr	18
113	6th St., near Terrell St., Paducah.	do	do	1939	Dr	23
114	6th and Burnett Sts., Paducah.	do	do	1939	Dr	13
115	Harris St., near 6th St., Paducah.	do	do	1939	Dr	20
116	5th St., near Trimble St., Paducah.	do	do	1939	Dr	18
117	Riverside Drive, near 4th St., Paducah.	do	do	1939	Dr	26
118	Near 2d and Madison Sts., Paducah.	do	do	1939	Dr	32
119	1st St., near Jefferson St., Paducah.	do	do	1939	Dr	24
120	Clark St., near 2d St., Paducah.	do	do	1939	Dr	25
8840-3700-1	3 miles north of Lone Oak	Timbers Restaurant.	W. H. Ellis	1949	Dr	r41
2	do	do	do	1949	Dr	r222
3	1½ miles northeast of Massac.	E. C. Maxie	R. B. Elrod	1949	Dr	r117

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
30	---do---	Pl (?)	30.39	July 25, 1952	Cy, E	6	D	
24	---do---	Pl (?)	23.81	---do---	J, E	6	D	
24	Sand and gravel.	Pl (?)	26.11	---do---	Bu	---do---	D	
24	---do---	Pl (?)	r25	---do---	J, E	6	D	
36	---do---	Pl (?)	r30	---do---	Cy, E	40	D, Ir	
24	Sand and gravel.	Pl (?)	20.50	July 25, 1952	J, E	5	D	Chemical analysis in table 7.
24	---do---	Pl(?)	17.10	---do---	Bu	---do---	D	Specific capacity in table 6.
24	---do---	Pl(?)	46.05	July 31, 1952	J, E	5	D	
24	---do---	Pl(?)	33.93	---do---	Cy, E	6	D	
24	---do---	Pl(?)	18.82	---do---	J, E	8	D	
24	---do---	Pl(?)	30.30	---do---	J, E	6	D	
24	Gravel---	Pl(?)	30.79	---do---	J, E	6	D	
24	---do---	Pl(?)	26.01	---do---	J, E	6	D, Ir	
24	---do---	Pl(?)	r25	---do---	J, E	6	D	
24	---do---	Pl(?)	r36	---do---	J, E	4	D	
36	Gravel---	Pl(?)	16.01	July 31, 1952	J, E	10	D	
24	---do---	Pl(?)	18.45	---do---	J, E	10	C	
30	---do---	Pl(?)	11.84	---do---	S, E	6	D	
30	---do---	Pl(?)	15.89	---do---	J, E	8	D	
30	Gravel---	Pl(?)	10.21	---do---	Bu	---do---	D	
6	---do---	Pl(?)	11.24	---do---	Bu	---do---	D	
8	---do---	Pl(?)	11.59	---do---	Bu	---do---	D	
24	---do---	Pl(?)	11.39	---do---	Bu	---do---	D	
6	---do---	Pl(?)	10.94	---do---	---do---	---do---	U	
8	---do---	Pl(?)	12.88	---do---	S, E	4	D	
24	Gravel---	Pl(?)	r13	---do---	J, E	8	D	
2	---do---	Pc	---do---	---do---	---do---	---do---	Tc	Log on p. 199.
2	---do---	Pc	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Log on p. 200.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Log on p. 201.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Log on p. 202.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	---do---	Al	---do---	---do---	---do---	---do---	Tc	Do.
2	Gravel---	Al	r21	---do---	J, E	6	C	
2	Fine sand---	Ri	r25	---do---	Cy, E	7	C	Depth to top of water-bearing bed, 192 ft.
4 to 2	Sand---	Hs	r94.5	---do---	J, E	4	D	Depth to top of water-bearing bed, 107 ft; thickness, 10 ft. 5 ft of 2 in. screen, no. 6 slot. Log on p. 203.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-4	2¾ miles east of West Paducah.	C. Kendred	R. B. Elrod	1949	Dr	r46
5	1 mile south of Lone Oak	H. L. Houston	do	1947	Dr	r91
6	1½ miles south of Lone Oak	Wayne Trevathan	do	1951	Dr	r100
7	3 miles north of Lone Oak	Timbers Motel and Trailer Court.	do	1951	Dr	r385
8	Lone Oak	McCracken County Board of Education, Lone Oak High School.	Ode Shelton	1926	Dr	r479
9	1½ miles east of Massac	R. D. Willett			Bo	r20
10	1½ miles northeast of Massac	J. T. Moody			Bo	29
11	1¼ miles east of Massac	Jack Elliot			Bo	10
12	¾ mile east of Massac	Gene Paro			Du	42
13	do	W. Melott			Bo	58
14	1¼ miles east of Massac	O. F. McKeage			Du	45
15	1½ miles east of Massac	Martin Seitz			Bo	40
16	2 miles east of Massac	Ralph Baker			Bo	26
17	do	Herman Turner			Bo	18
18	do	W. F. Knarr			Du	29
20	1¾ miles east of Massac	J. M. Seitz			Du	49
21	do	Mrs. John Welch			Du	54
22	1¾ miles southeast of Massac	E. W. Smith			Bo	59
23	1¼ miles southeast of Massac	J. D. Wesson			Bo	r30
24	½ mile south of Massac	R. W. Ryan			Dr	r70
25	1 mile west of Massac	Hubert Childress			Bo	25
26	¾ mile southwest of Massac	Elgie Overstreet			Du	15
27	¼ mile west of Massac	Rudy L. Burnett	Eric Cullin		Dr	r113
28	1 mile northwest of Massac	Boone Sanderson			Bo	22
29	do	R. C. Overstreet			Bo	31
30	do	Charles Wagoner			Bo	21
31	do	G. W. Garnett			Du	12
32	1¼ miles northwest of Massac.	A. M. LaMar			Bo	24
33	1 mile northwest of Massac	W. Alexander			Bo	r25
34	do	Chester Price			Bo	17
35	1¼ miles northwest of Massac.	Allen Hines			Bo	r22
36	¾ mile north of Massac	Ann Owen			Bo	46
37	½ mile north of Massac	R. N. Newton			Bo	59
38	Massac	M. R. Moore			Bo	r65
39	do	Harold L. Reed	Beekman Drilling & Contracting Co.	1951	Dr	125
40	¾ mile northeast of Massac	Mrs. Nancy Price			Dr	r60
41	1½ miles north of Massac	Rex Harrison			Bo	33
42	1¼ miles northeast of Massac	F. E. Grimes			Bo	r34
43	1¾ miles northeast of Massac	Victor Anderson			Bo	23
44	do	do			Bo	22
45	1½ miles northeast of Massac	W. E. McCallister			Bo	22
46	do	O. J. Wallace			Du	r22
47	do	S. B. Reese			Bo	19
48	1¼ miles northeast of Massac	Terrell Richardson.			Bo	26
49	1¾ miles northeast of Massac	H. D. Stanley			Bo	r44

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
6	Gravel	Pl(?)	r37		J, E	8	D	
6 to 2	Sand	Hs	r79		Cy, E	4	D	Depth to top of water-bearing bed, 79 ft; thickness, 12+ ft. 6 ft of 2 in. screen.
2	do	Hs			Cy, E	4	D	Depth to top of water-bearing bed, 90 ft; thickness, 9+ ft.
6	do	Ri	46.13	May 11, 1951	Cy, E	9	C	Depth to top of water-bearing bed, 375 ft; thickness, 10 ft. Bedrock at 385 ft. Chemical analysis in table 7. Log on p. 203.
4	do	Ri	153.00	Dec. 15, 1951			O	Altitude, 478.44 ft above mean sea level. Water-level measurements in table 19.
6	do	Al	r8		S, E	¾4	D	
6		Hs	2.14	Apr. 24, 1951	Bu		D	Chemical analysis in table 7.
6		Al	1.62	do	Bu		D	
24		Hs	35.05	May 28, 1951	J, E	8	D	
8		Hs	37.91	do	Bu		D,S	
24	White sand	Hs	39.03	do	J, E		D,S	
6		Hs	30.70	do	Bu		D	
6	Red sand	Hs	6.41	do	Bu		D	
8	Sand	Hs	7.15	do	Bu		D	
36		Hs	26.45	do	J, E	6	D	
36		Hs	45.60	do	J, E	6	D	
24		Hs	49.14	do	J, E	5	D	
6		Hs	49.69	June 11, 1951	Bu		D,S	
6		Hs	r15		Bu		D	
2		Hs	r60		Cy, E	6	D	
8		Al	8.04	Apr. 24, 1951	Bu		D,S	
18		Al	2.42	do	Bu		U	
4		Hs	r44		Cy, E	7	D	Depth to top of water-bearing bed, 66 ft; thickness, 47+ ft. Chemical analysis in table 7.
10		Pl(?)	5.75	June 11, 1951	S, H		D	
8		Pl(?)	20.74	do	J, E	8	D	
10		Pl(?)	7.71	do	Bu		D,S	
24		Pl(?)	3.78	do	Bu		D	
6		Pl(?)	15.20	do	Bu		D	
6		Pl(?)	r8		S, H		D,S	
6		Pl(?)	4.20	June 11, 1951	Bu		D	
6		Pl(?)	r10		S, E	6	D	
8	Gravel	Pl(?)	33.02	July 13, 1951	Bu		D	
8		Pl(?)	53.45	do			U	Water-level measurements in table 18.
8	Gravel	Pl(?)	r55		J, E	10	D	
6		Hs	66.07	July 13, 1951	Bu		U	
3		Hs	r50		Cy, E		U	
8		Al	25.44	July 13, 1951	J, E	7	D	
8	Sand and gravel.	Al	r20		J, E	5	D	
8		Al	6.23	July 13, 1951	Bu		D	
8		Al	4.67	do	S, E	4	D	
8	Sand and gravel.	Al	11.50	do	Bu		D	
24		Al	r10		Bu		D	
10		Al	7.57	July 13, 1951	S, E	6	D	
6		Al	9.08	do	Bu		D,S	
8	Gravel	Pl(?)	r25		J, E	7	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-50	2 miles southwest of Lone Oak.	Clifford Riggs			Bo	66
51	1½ miles west of Lone Oak	H. C. Simpson			Du	76
52	1¼ miles west of Lone Oak	A. F. Deininger			Dr	r101
53	1½ miles west of Lone Oak	F. M. Wyatt			Du	21
54	1¾ miles southeast of Massac.	C. E. Osborne	R. B. Elrod	1951	Dr	r71
55	2 miles southwest of Lone Oak.	W. C. Felts		1925	Du	37
56	1¾ miles southwest of Lone Oak.	Roscoe Alexander			Bo	r56
57	do	James Cary			Bo	r45
58	do	Clyde Roser			Bo	36
59	do	B. L. Yarbro	Ode Shelton		Dr	r70
60	1½ miles southwest of Lone Oak.	Harry Monroe			Bo	r65
61	do	Boyd McCandless			Bo	r70
62	do	E. E. Goin			Du	34
63	do	O. W. Shelton			Du	r35
64	1¼ miles southwest of Lone Oak.	Thurman Babb			Du	r54
65	1½ miles southwest of Lone Oak.	John Morris			Bo	40
66	1¼ miles southwest of Lone Oak.	O. T. House			Du	31
67	do	Mrs. A. Harper		1938	Bo	r54
68	do	Mrs. T. M. Thompson.	Ode Shelton		Dr	r65
69	do	S. N. Vaughn			Dr	r117
70	1½ miles southwest of Lone Oak.	M. F. Shelton			Du	55
71	do	Bennie Brown			Bo	35
72	do	Sim Darnell			Bo	r40
73	do	E. C. Childers			Du	r68
74	do	Hunter H. Martin, Jr.	Beekman Drilling & Contracting Co.	1951	Bo	r93
75	1¾ miles southwest of Lone Oak.	Jesse Knott	Ode Shelton		Dr	r103
76	do	William Scheer		1947	Du	84
77	2 miles southwest of Lone Oak.	Annie Kloss			Du	13
78	do	C. H. Streetman	Beekman Drilling & Contracting Co.	1951	Bo	88
79	do	J. P. Story			Dr	r90
80	1½ miles south of Lone Oak	George A. Haas			Du	61
81	2 miles southwest of Lone Oak.	J. R. Lynn			Du	75
82	2¼ miles south of Lone Oak	Leonard Grief			Du	r28
83	do	A. Switzer			Du	26
84	2½ miles south of Lone Oak	J. L. Neihoff			Du	r25
85	do	N. Neihoff			Du	22
86	1 mile southwest of Lone Oak.	Luther Grief			Du	r78
87	do	Alton Foster	Ode Shelton		Dr	r85
88	do	L. E. Sanderson	do		Bo	r100
89	1 mile west of Lone Oak	J. F. Reaves	do		Dr	61
90	1¼ miles west of Lone Oak	H. A. Berry			Du	17
91	1¾ miles west of Lone Oak	Lee Metcalf	Ode Shelton	1935	Dr	r125
92	2 miles west of Lone Oak	R. F. Sullivan	do		Dr	r88
93	1¾ miles west of Lone Oak	Norman Sullivan	do		Dr	r88
94	1½ miles northwest of Massac.	Barney Wooten			Bo	29
95	do	Edward Sherron			Du	36
96	do	A. N. Sherron			Bo	30
97	1¼ miles north of Massac	Mallory Edwards			Du	r20

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
8	----------	Hs	45.84	July 13, 1951	Bu	------	D	
36	----------	Hs	66.68	-----do-------	Bu	------	D	
4 to 2	Sand-------	Hs	r90	----------	Cy, E	3	D	
36	Gravel------	Pl(?)	11.96	July 13, 1951	Bu	------	D	
5	Sand-------	Hs	----------	----------	J, E	12.7	D	Depth to top of water-bearing bed, 45 ft; thickness, 26+ ft. Chemical analysis in table 7. Log on p. 204.
36	Gravel------	Pl(?)	31.40	July 17, 1951	J, E	10	D	
6	Sand-------	Hs	r34	----------	J, E	------	D	
6	----------	Hs	r36	----------	J, E	6	D	
6	----------	Hs	25.70	July 17, 1951	Bu	------	D	
2	Sand-------	Hs	r42	----------	J, E	6	D	
6	----------	Hs	r45	----------	Bu	------	D	
6	Sand-------	Hs	r54	----------	J, E	5	D	
24	----------	Pl(?)	25.26	July 17, 1951	Bu	------	D	
36	----------	Pl(?)	r10	----------	J, E	8	D	
30	Sand-------	Hs	r42	----------	J, E	6	D	
6	----------	Hs	29.78	July 17, 1951	J, E	8	D	
24	----------	Hs	26.51	-----do-------	J, E	8	D	
6	Sand-------	Hs	r12	----------	J, E	10	D	
4 to 6	-----do-------	Hs	r20	----------	Cy, E	6	D	
4	-----do-------	Hs	r60	----------	Cy, E	6	D	
24	----------	Hs	50.77	July 17, 1951	Cy, E	6	D	
6	----------	Pl(?)	23.22	-----do-------	J, E	5	D	
6	----------	Pl(?)	r31	----------	J, E	8	D	
30	Sand-------	Hs	r63	----------	Cy, E	6	D	
6	-----do-------	Hs	r45	----------	J, E	4	D	Chemical analysis in table 7.
6	-----do-------	Hs	r81	----------	Cy, E	4	D	
24	----------	Hs	78.33	July 17, 1951	Bu	------	D	
24	Gravel------	Al	7.65	July 18, 1951	Bu	------	D	
6	----------	Hs	33.65	-----do-------	Bu	------	D	Depth to top of water-bearing bed, 65 ft; thickness, 25+ ft.
6	Sand-------	Hs	r35	----------	J, E	6	D	
36	----------	Hs	52.87	May 28, 1953	Bu	------	U	
24	----------	Hs	53.97	July 18, 1951	J, E	8	D	
24	Gravel------	Pl(?)	r21	----------	Cy, H	------	D	
24	-----do-------	Pl(?)	19.64	July 18, 1951	Bu	------	D	
24	----------	Pl(?)	r18	----------	Cy, H	------	D	
36	----------	Pl(?)	19.51	July 18, 1951	Bu	------	D	
36	----------	Hs	r75	----------	Bu	------	D	
6	----------	Hs	r75	----------	Cy, E	6	D	
6	Sand-------	Hs	r90	----------	----------	------	U	
2	-----do-------	Hs	37.16	July 18, 1951	Cy, E	6	D	
36	----------	Pl(?)	12.77	-----do-------	Bu	------	D	
2	Sand-------	Hs	r68	----------	Cy, E	4	D	
3	-----do-------	Hs	r40	----------	Cy, E	6	D	
3	-----do-------	Hs	r40	----------	Cy, E	6	D	
8	----------	Pl(?)	12.13	July 19, 1951	Bu	------	D	
24	Sandy clay..	Pl(?)	19.76	-----do-------	J, E	4	D	
8	Sand and gravel.	Pl(?)	16.43	-----do-------	Bu	------	D	
18	Sandy clay and gravel.	Pl(?)	r8	----------	S, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840–3700–98	1½ miles north of Massac	Melvin Kenyon			Dr	25
99	do	Glen L. Peart			Du	29
100	do	S. P. Perdew			Du	r24
101	do	A. C. Farthing			Du	29
102	1¾ miles north of Massac	David Faith			Bo	34
103	1½ miles north of Massac	O. D. Sellers			Bo	46
104	do	S. L. Rice			Du	r26
105	2 miles north of Massac	S. G. Lamond			Du	r20
106	2¼ miles north of Massac	do			Bo	r22
107	do	do			Bo	r22
108	1¾ miles north of Massac	Sam Ford			Du	r33
109	2½ miles northeast of Massac.	L. V. Timmons	Eric Cullin	1952	Dr	r125
110	2¾ miles northeast of Massac.	M. L. Smith			Dr	105
112	1½ miles northwest of Lone Oak.	D. V. Sims			Du	39
113	do	George Eck			Du	37
114	do	N. O. Story			Dr	68
115	1¾ miles northwest of Lone Oak.	J. F. Purky			Du	r40
116	1¾ miles west of Loan Oak	E. B. Michael			Du	r70
117	1½ miles north of Massac	W. W. Hall			Bo	r40
118	1¾ miles northwest of Massac.	Walter Sweatt			Bo	39
119	1¾ miles north of Massac	Mrs. A. Wesson			Bo	37
120	do	F. H. Moore			Bo	40
121	2 miles north of Massac	L. C. Edwards			Bo	36
122	2¼ miles northwest of Massac.	William Harper			Bo	r68
123	do	C. S. Sturgeon			Bo	r78
124	2½ miles south of West Paducah.	Sam Duncan		1950	Bo	r60
125	2¼ miles south of West Paducah.	R. L. Faith			Bo	53
126	do	Odie Johnston			Dr	r72
127	do	B. J. Atkinson	Virgil Elrod		Bo	r60
128	do	J. T. Powell	do		Bo	r50
129	2 miles south of West Paducah.	Rupert Hite	do		Bo	r42
130	do	Louise Lowery			Bo	34
131	1¾ miles south of West Paducah.	Rudy Hester			Bo	r31
132	do	A. C. Harris			Bo	r41
133	do	S. B. Harris		1920	Bo	29
134	1½ miles south of West Paducah.	Tommy Suttles			Bo	26
135	do	Mrs. V. Harris			Bo	r27
136	do	E. S. Harris			Bo	26
137	do	Rosco Halliman			Bo	26
138	1¼ miles south of West Paducah.	Jack Burgess			Bo	r30
139	do	Lewis Johnson			Du	29
140	2 miles north of Massac	Charles Cummings.			Bo	29
141	do	L. H. Hodges			Du	32
142	2¼ miles north of Massac	W. J. Lippert			Bo	r40
143	do	Sam Grimmer			Bo	33
144	2¼ miles south of West Paducah.	G. O. Burnett			Bo	r35
145	do	Charles Stephens			Bo	r30
146	2 miles south of West Paducah.	Roy Stewart			Bo	26
147	do	do			Bo	30
148	1¾ miles south of West Paducah.	Arthur Orr			Bo	r25
149	do	Jack Major			Bo	r30
150	do	Gene Cooper			Du	29
151	do	George Wallace			Bo	28

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24	Gravel	Pl(?)	15.28	July 19, 1951	S, E	8	D	
24	White sand	Pl(?)	17.64	do	J, E	10	D	
24	do	Pl(?)	r20		J, E	6	D	
24		Pl(?)	23.44	July 19, 1951	J, E	7	D	
6		Pl(?)	20.32	do	J, E	6	D	
8	Gravel	Pl(?)	18.99	do	J, E	8	D	Chemical analysis in table 7.
24	do	Pl(?)	r15		S, E	4	D	
36	Sand and gravel.	Al	r12		S, E	4	D	
8	do	Al	r10		Bu		D	
8		Al	r12		Bu		D	
24	Sand and gravel.	Al	r28.5		Bu		D	
2		Hs	r90		Cy, E	6	D	
6		Hs	47.85	July 19, 1951	Cy, E	3	D	
24		Pl(?)	30.68	do	J, E	6	D	
24		Pl(?)	29.93	do	Bu		D	
4		Hs	28.40	do			U	
36		Hs	r30		J, E	6	D	
24		Hs	r55		J, E	4	D	
6	Sandy gravel	Pl(?)	r21		J, E	6	D	
8		Hs	28.50	July 20, 1951	Bu		D	
6		Pl(?)	12.56	do	Bu		D	
8	Sand and gravel.	Pl(?)	14.32	do	Bu		D	Bottomed in clay.
8	Sand	Hs	21.23	do	Bu		D	
8	do	Hs	r53		J, E	6	D	
10		Hs	r56		J, E	6	D,S	
8	Hard sand	Hs	r38		J, E	3	D	
8	Sand	Hs	38.07	July 20, 1951	Bu		D,S	
4		Hs	r40		J, E	4	D	
8	Sand	Hs	r35		Bu		D	
8		Hs	r35		J, E	8	D	
8	Gravel	Pl(?)	r31		J, E	8	D	
8		Pl(?)	20.27	July 20, 1951	J, E	6	D	
8	Gravel	Pl(?)	r19		J, E	6	D	
8		Pl(?)	r24		J, E	8	D	
8		Pl(?)	13.14	July 20, 1951	Bu		D	
10		Pl(?)	12.93	do	J, E	6	U	
8		Pl(?)	r14		J, E	6	D	
8		Pl(?)	11.00	July 20, 1951	Bu		D	
8		Pl(?)	10.86	do	Bu		D	
8	Gravel	Pl(?)	r24		J, E	4	D	
36	do	Pl(?)	22.68	July 20, 1951	J, E	8	D	
8	Sand	Pl(?)	16.24	July 27, 1951	J, E	6	D	
24	do	Pl(?)	21.61	do	J, E	8	D	
8		Pl(?)	r25		Cy, H		D	
8		Pl(?)	25.73	July 27, 1951	Bu		D	
8		Pl(?)	r27		J, E	6	D	
8		Pl(?)	r20		J, E	6	D	
8		Pl(?)	11.35	July 27, 1951	Bu		D	
8		Pl(?)	16.12	do			U	
8		Pl(?)	r15		J, E	6	D	
8		Pl(?)	r17		J, E	7	D	
24		Pl(?)	14.68	July 27, 1951	Cy, H		D	
8	Sand and gravel.	Pl(?)	16.52	do	Bu		D	Temperature 60° F, July 27, 1951.

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-152	1½ miles south of West Paducah.	Edenwald Construction Co.			Du	34
153	do	H. D. Harris			Bo	28
154	1½ miles southeast of West Paducah.	do			Bo	r30
155	1½ miles south of West Paducah.	Ross Harris			Bo	r41
156	do	Arthur Flowers			Bo	33
157	do	Ross Harris			Bo	r35
158	do	Henry Peyton		1930	Bo	25
159	1 mile south of West Paducah.	C. H. Bolte			Bo	32
160	do	J. W. Miller			Du	22
161	do	Sidney Vance			Bo	r25
162	¾ mile south of West Paducah.	J. T. Metcalf			Bo	r32
163	do	do			Bo	23
164	¾ mile southeast of West Paducah.	A. E. Hedden			Du	r25
165	do	Dale White			Du	22
166	do	W. H. Peyton			Du	r25
167	West Paducah	O. B. Brelsford			Bo	r35
168	do	Milton Darden			Du	r35
169	do	Stanley Bach			Du	12
170	do	do			Bo	28
171	½ mile southwest of West Paducah.	Percy Rogers			Bo	26
172	1 mile southeast of West Paducah.	A. W. Barkley			Du	32
173	1½ miles southeast of West Paducah.	Bert Cardwell			Du	r35
174	do	C. D. Harris			Du	r36
175	1¾ miles east of West Paducah.	H. B. McManus			Du	24
176	do	Andrew Jeffers			Du	r37
177	2 miles east of West Paducah.	Harley Terry			Bo	r44
178	2½ miles east of West Paducah.	T. A. Harris			Bo	36
179	2¼ miles east of West Paducah.	Mrs. A. Neisz			Bo	37
180	2½ miles east of West Paducah.	Richard LeRoy			Du	36
181	do	J. W. Webb			Du	43
182	do	R. E. Fox			Bo	r40
183	do	Mrs. W. Lynn			Du	41
184	do	Toy Meeks			Bo	44
185	2¾ miles east of West Paducah.	Katherine Meakin			Du	r48
186	do	J. R. Wilton			Bo	r40
187	3¼ miles southeast of West Paducah.	H. L. Rector			Dr	r74
188	2¾ miles southeast of West Paducah.	Stanley D. Petter			Du	r40
189	do	P. L. Potts			Bo	42
190	do	Stanley D. Petter			Bo	r40
191	do	Millard Lee			Du	43
192	do	Murl Lewis			Du	31
193	do	J. R. Anderson			Du	24
194	2½ miles southeast of West Paducah.	C. E. Dexter			Bo	20
195	do	J. L. Gobble	Beekman Drilling & Contracting Co.		Bo	60
196	3 miles east of West Paducah.	Dr. W. Lee Titsworth.			Du	r55
197	2¾ miles northwest of Lone Oak.	W. I. Reed			Du	r33
198	do	W. S. Jory			Du	r35
199	do	Melvin Graves			Du	r32

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	.....	Pl(?)	20.33	July 27, 1951	J, E	8	D	
8	Gravel.....	Pl(?)	20.88	Nov. 19, 1952	J, E	6	D	Chemical analysis in table 7.
8	.....do.....	Pl(?)	r20	.....	J, E	8	D	
8	.....do.....	Pl(?)	r30	.....	J, E	8	D	
8	.....	Pl(?)	20.04	July 27, 1951	Bu	.....	D	
8	.....	Pl(?)	r25	.....	Bu	.....	D	
8	Gravel.....	Pl(?)	12.35	July 27, 1951	S, E	4	D	
6	.....	Pl(?)	17.00	.....do.....	J, E	8	D	
24	.....	Pl(?)	14.00	.....do.....	S, E	7	D	
8	.....	Pl(?)	r15	.....	S, E	6	D	
8	Sand.....	Pl(?)	r22.5	.....	J, E	8	D	
8	.....do.....	Pl(?)	8.37	Aug. 15, 1951	Bu	.....	D	
24	.....	Pl(?)	r10	.....	S, E	6	D	
24	.....	Pl(?)	12.70	Aug. 15, 1951	Bu	.....	D	
24	.....	Pl(?)	r10	.....	S, E	6	D	
8	Sandy gravel.	Pl(?)	r21	.....	J, E	9	D	
24	.....	Pl(?)	r20	.....	J, E	7	D	
24	Gravel.....	Pl(?)	7.59	Aug. 15, 1951	S, E	8	D	
8	Sandy gravel.	Pl(?)	5.65	.....do.....	S, E	8	D	
8	.....	Pl(?)	10.74	.....do.....	Bu	.....	D	
30	.....	Pl(?)	23.35	.....do.....	J, E	9	D	
24	Gravel.....	Pl(?)	r25	.....	J, E	8	D	
24	.....do.....	Pl(?)	r26	.....	J, E	6	D	
36	.....	Pl(?)	19.65	Aug. 15, 1951	Bu	.....	D	
24	Gravel.....	Pl(?)	r33	.....	Bu	.....	D	
8	Sand.....	Pl(?)	r33	.....	Bu	.....	D	
8	Gravel.....	Pl(?)	31.92	Aug. 15, 1951	Bu	.....	D	
8	.....	Pl(?)	29.07	.....do.....	Bu	.....	D	
24	.....	Pl(?)	30.57	.....do.....	J, E	8	D	
24	.....	Pl(?)	34.52	.....do.....	Cy, E	4	D	
8	Gravel.....	Pl(?)	r9	.....	S, E	6	D	
24	.....	Pl(?)	32.09	Aug. 15, 1951	Bu	.....	D	
8	.....	Pl(?)	32.86	.....do.....	Bu	.....	D	
30	.....	Pl(?)	r35	.....	J, E	7	D	
8	.....	Pl(?)	r30	.....	J, E	8	D	
2	Sand.....	Hs	r58	.....	Cy, E	6	D	
36	.....	Pl(?)	r30	.....	J, E	6	D	
8	Sand.....	Pl(?)	r29.5	.....	Bu	.....	D	
8	.....	Pl(?)	r35	.....	J, E	8	D	
24	.....	Pl(?)	37.59	Aug. 29, 1951	J, E	7	D	
36	.....	Pl(?)	27.38	.....do.....	Bu	.....	D	
24	Sand and gravel.	Pl(?)	15.33	.....do.....	J, E	8	D	
8	.....	Pl(?)	23.11	.....do.....	Bu	.....	D	
6	.....	Hs	33.78	.....do.....	J, E	8	D	Bottomed in clay.
24	.....	Hs	r42	.....	Bu	.....	D	
24	Sand and gravel.	Pl(?)	r25	.....	Bu	.....	D	Depth to top of water-bearing bed, 25 ft; thickness, 8+ ft.
24	.....do.....	Pl(?)	r27	.....	Bu	.....	D	
24	Sand.....	Pl(?)	r22	.....	Cy, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-200	2½ miles northwest of Lone Oak.	W. G. Jackson			Du	18
201	3 miles northwest of Lone Oak.	Frank Gourieux			Bo	r30
202	2¼ miles northwest of Lone Oak.	H. G. Mitchell			Du	20
203	do	John Choice			Du	r24
204	do	C. L. Harris			Bo	25
205	do	G. T. Ellington			Du	45
206	2¼ miles north of Lone Oak	B. A. Dickson			Du	28
207	2 miles northwest of Lone Oak.	Tuttle Lockwood			Dr	r240
208	do	J. D. Seaton			Du	r38
209	2 miles north of Lone Oak	H. E. Swift			Du	35
210	2¼ miles north of Lone Oak.	C. L. Bryan	Larry Yancy	1947	Dr	r150
211	2 miles north of Lone Oak	do			Du	23
212	2¼ miles northwest of Lone Oak.	Donald Corothers			Du	39
213	1¾ miles northwest of Lone Oak.	John E. Kirksey			Du	39
214	1½ miles northwest of Lone Oak.	Don Wright			Du	r25
215	do	C. H. Rhodes			Du	30
216	1¾ miles northwest of Lone Oak.	Frank Melber, Jr.			Du	24
217	do	E. T. Phelps			Du	8
218	2 miles northwest of Lone Oak.	Jess Lambert			Du	20
219	2¼ miles northwest of Lone Oak.	Homer Jett			Du	23
220	do	Frank Phugh			Du	r24
221	do	Oscar Gains			Du	41
222	2 miles northwest of Lone Oak.	C. H. White			Du	28
223	2¼ miles northwest of Lone Oak.	H. R. Williams			Du	r45
224	2 miles northwest of Lone Oak.	B. M. Settle			Du	r40
225	2¼ miles northwest of Lone Oak.	Roy Cooper			Du	36
226	do	R. B. Stinespring			Du	r37
227	2 miles northwest of Lone Oak.	Deen Clark			Du	r45
228	do	Mrs. Marlin Yopp			Du	43
229	2¾ miles northwest of Lone Oak.	Jack Potter			Du	38
230	do	Kelsie Travis, Jr.			Du	r35
231	do	J. G. Potts			Bo	r36
232	2½ miles northwest of Lone Oak.	Ottis Carrol			Bo	r39
233	do	S. E. Allen			Bo	r35
234	do	John Vinager			Du	r30
235	do	Lester Crawley			Bo	r30
236	do	E. K. Brewer			Du	r21
237	do	G. W. Cargill			Du	r20
238	do	Carlos McCanlis			Du	r33
239	do	V. J. Fendaw			Bo	r30
240	1¾ miles south of West Paducah.	James Miles			Bo	29
241	1¼ miles south of West Paducah.	Robert Ligon			Bo	r45
242	1½ miles south of West Paducah.	Buford Miles			Bo	r36
243	2½ miles south of West Paducah.	Russel Jones			Bo	r35
244	1¾ miles southeast of West Paducah.	J. H. Peyton			Du	24
245	do	J. E. Buchannan			Du	r23
246	1½ miles southeast of West Paducah.	H. Yonts			Du	23
247	1¾ miles southeast of West Paducah.	Roy Meahl			Bo	r32
248	1½ miles southeast of West Paducah.	Walter Moultrie			Bo	13

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
60	Sand and gravel.	Pl(?)	9.71	Aug. 29, 1951	S, E	8	D	
8	Gravel	Pl(?)	r21		J, E	8	D	
20		Pl(?)	11.57		S, E	6	D	
24	Sand	Pl(?)	r15		S, E	4	D	
8		Pl(?)	15.43		S, E	8	D	
24		Pl(?)	38.17	Aug. 29, 1951	J, E	6	D	
30		Pl(?)	19.67	do	Bu		D	
4	Sand	Ri	r100		Cy, E	5	D	
24	Gravel	Pl(?)	r23		J, E	8	D	
36	do	Pl(?)	26.51	Aug. 29, 1951	J, E	7	D	
2	Sand	Ri	r30		Cy, E	4	D	
24	Gravel	Pl(?)	7.96	Aug. 30, 1951	S, E	6	D	
24	do	Pl(?)	24.95	do	Bu		D	
24		Pl(?)	34.56	do	Bu		D	
24		Pl(?)	r20		J, E	8	D	
24		Pl(?)	20.68	Aug. 30, 1951	Bu		D	
24	Sand and gravel.	Pl(?)	18.82	do	J, E	4	D	
36	Gravel	Pl(?)	5.31	do	S, E	6	D	
24		Pl(?)	10.43	do	Bu		D	
24	Gravel	Pl(?)	17.19	do	S, E	5	D	
24	Sand and gravel.	Pl(?)	r18		Bu		D	Bottomed in clay.
24	do	Pl(?)	37.68	Aug. 30, 1951	J, E	8	D	
24	do	Pl(?)	24.92	do	J, E	8	D	
24		Pl(?)	r40		J, E	6	D	
24	Sand and gravel.	Pl(?)	r35		J, E	7	D	
24	Gravel	Pl(?)	30.65	Aug. 30, 1951	Bu		D	
24	Sand	Hs	r32		J, E	8	D	
36		Hs	r43		Bu		D	
24	Sand	Hs	31.96	Aug. 30, 1951	Bu		D	
24	Sand and gravel.	Pl(?)	29.69	do	Bu		D	
24		Pl(?)	r28		Cy, H		D	
8	Gravel	Pl(?)	r28		Bu		D	
8	Sand	Hs	r35.5		J, E	6	D	
8	Red sand	Hs	r29		J, E	8	D	
36		Hs	r23		Bu		D	
8		Hs	r22		J, E	7	D	
24	Red sand	Hs	r14		Bu		D	
24	Sand	Hs	r10		S, E	6	D	
24		Hs	r27		J, E	8	D	
8	Sand	Hs	r24		Bu		D	
8		Hs	18.93		J, E	8	D	
8		Pl(?)	r30		J, E	6	D	
8	Gravel	Pl(?)	r28		J, E	7	D	
8		Pl(?)	r28		J, E	7	D	
24		Pl(?)	18.32	Sept. 21, 1951	J, E	6	D	
24	Gravel	Pl(?)	r17		J, E	8	D	
24		Pl(?)	16.37	Sept. 21, 1951	J, E	8	D	
8		Pl(?)	r20		J, E	7	D	
6	Gravel	Pl(?)	5.42	Sept. 21, 1951	S, E	6	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-250	1¼ miles southeast of West Paducah.	L. D. Stacey			Bo	20
251	do	George Hammonds.			Bo	25
252	2 miles southeast of West Paducah.	L. E. Arnold			Du	r26
253	do	F. Caldwell	Virgil Elrod		Bo	r33
254	do	Philip Meyer	do		Bo	41
255	do	T. A. Harris, Jr	do		Bo	r40
256	do	J. R. Largey	do		Bo	r53
257	do	Wayne Rudolph	do		Bo	30
258	2¼ miles southeast of West Paducah.	J. C. Crotchett	do		Bo	r40
259	do	Green H. Dale	do		Bo	r36
260	2¾ miles east of West Paducah.	Clarence Hester			Bo	r37
261	3 miles east of West Paducah.	Florence Potter			Du	30
262	1 mile west of Lone Oak	Highland Church subdivision.	Walter Bingham.	1952	Dr	r95
263	do	C. E. Charvat	C. E. Charvat.	1946	Je	r110
264	¾ mile west of Lone Oak	R. F. Ham		1949	Dr	r107
265	¾ mile southwest of Lone Oak.	J. Earl Ham	Henry Harper.	1944	Du	86
266	do	Mrs. Bessie Ross			Du	26
267	do	R. S. Martin		1936	Du	33
268	Lone Oak	Boyce McElya	Ode Shelton		Dr	r96
269	do	M. T. Adams	do		Dr	r90
270	do	Mrs. Ere Gross			Du	24
271	do	Richard Dykes	Ode Shelton	1940	Dr	r125
272	do	M. M. Nall		1934	Du	r28
273	do	W. L. Smithson			Du	30
274	¾ mile southwest of Lone Oak.	Neil Hicks	Ode Shelton		Dr	r88
275	1¼ miles southwest of Lone Oak.	James Hayden	Casey & Case Foundation Co.	1952	Bo	r87
276	Lone Oak	C. G. Douglas		1938	Du,Dr	r94
277	do	J. W. Richardson	Ode Shelton	1937	Dr	r285
278	do	Walter T. Kelley Co.	do		Dr	r275
279	1 mile south of Lone Oak	Dr. J. M. Dismukes.	D. P. McNeely.	1931	Dr	r405
280	1¼ miles south of Lone Oak.	J. L. Anderson	Ode Shelton		Dr	r90
281	1½ miles south of Lone Oak.	Herman Nelhoff			Du	23
282	2 miles south of Lone Oak	I. N. Hunt		1930	Du	r89
283	2¼ miles south of Lone Oak.	Glenn Harper			Du	32
284	Lone Oak	Cecil Duncan			Du	27
285	do	I. N. Tinsley		1921	Bo	r35
286	do	Thell Futrell			Du	29
287	do	Max Mitchell			Du	37
288	do	Winfred Morris	Ode Shelton	1937	Dr	r300
289	do	Claude Baker	do		Dr	r85
290	do	B. F. Griffith			Du	60
291	do	E. S. Usher			Du	r60
292	do	F. K. Masters			Du	r57
293	do	R. M. Schmidt		1943	Bo	59

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
8	Gravel	Pl(?)	14.37	Sept. 21, 1951	Bu		D	
8	White sand	Pl(?)	18.33	do	Bu		D	
24		Pl(?)	r21		J, E	6	D	
8		Pl(?)	r25		Bu		D	
8		Pl(?)	33.39	Sept. 21, 1951	Bu		D	
8		Pl(?)	r33		Bu		D	
8 to 2		Pl(?)	r33		J, E	7	D	
8	Gravel	Pl(?)	14.70	Sept. 21, 1951	S, E	4	D	
8	Rice sand	Pl(?)	r30		J, E	6	D	
8	Sand	Pl(?)	r26		J, E	7	D	
8		Pl(?)	r26		J, E	7	D	
48	Gravel	Pl(?)	20.59	Sept. 21, 1951			U	
6	Sand	Hs	r70		T, E	48	P	Depth to top of water-bearing bed, 27 ft; thickness, 58+ ft. Chemical analysis in table 7. Log on p. 204.
1	do	Hs	r80		Cy, E	3	U	Depth to top of water-bearing bed, 80 ft; thickness, 30+ ft.
2	do	Hs	r82		Cy, E	5	D	
24	do	Hs	81.88	Sept. 24, 1952	J, E	4	O	Depth to top of water-bearing bed, 36 ft; thickness, 50+ ft. Log on p. 204. Water-level measurements in table 18.
24	Gravel	Pl(?)	16.15	Aug. 1, 1952	S, E	5	D	
30	Sand	Pl(?)	20.65	do			U	
4	do	Hs	r80		Cy, E	8	U	
4	do	Hs	r80		Cy, E	8	U	
24	Gravel	Pl(?)	13.22	Aug. 1, 1952			U	
4	Sand	Hs	r100		Cy, E	6	U	
30	do	Pl(?)	r20		S, E	3	D	
42	Gravel	Pl(?)	22.84	Aug. 1, 1952			U	
5	Sand	Hs	r80		Cy, E	8	U	
24	do	Hs	r71		Bu		D	Depth to top of water-bearing bed, 85 ft; thickness, 2+ ft. Log on p. 205.
24 to 2	do	Hs	r60		Cy, E	6	U	Depth to top of water-bearing bed, 60 ft; thickness, 34 ft.
8	do	Ri	r80		Cy, E	6	D	Depth to top of water-bearing bed, 275 ft.
6	do	Ri			Cy, E	12	In	Depth to top of water-bearing bed, 270 ft.
4	do	Ri	r155		Cy, E	4	D	Depth to top of water-bearing bed, 400 ft; thickness, 5+ ft.
4	do	Hs	r80		Cy, E	4	D	
24	do	Pl(?)	17.02	Oct. 8, 1952	Bu		D	Depth to top of water-bearing bed, 16 ft; thickness, 7+ ft. Temperature 63°F., Oct. 8, 1952.
24	do	Hs	r80		Cy, E	4	D	
24	Gravel	Pl(?)	23.70	Oct. 8, 1952	J, E	8	D	
24	do	Pl(?)	21.39	Oct. 10, 1952			U	
8	do	Pl(?)	r25				U	
24	Sand	Hs	22.14	Oct. 10, 1952			U	
24	do	Hs	31.49	do	J, E	6	D	
8	do	Ri	r80		Cy, E	4	D	Chemical analysis in table 7.
4	White sand	Hs	r60				U	
24	Sand	Hs	54.28	Oct. 10, 1952			U	
24	do	Hs	r54				U	
24		Hs	r54				U	
6	Sand	Hs	30.78	Oct. 10, 1952			U	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-294	Lone Oak	Albert Shannon		1942	Dr	r86
295	do	W. M. Coleman			Du	39
296	1 mile north of Lone Oak	Harold L. Sullivan.			Du	27
297	1¼ miles north of Lone Oak	Hubert Smithson			Du	r16
299	do	Eugene Katterjohn.			Du	34
300	do	E. L. Ingram			Du	30
301	1½ miles north of Lone Oak	E. J. Perdue			Du	r38
302	do	H. W. Middleton			Du	16
303	Lone Oak	McCracken County Board of Education, Lone Oak High School.	Casey & Case Foundation Co.	1952	Bo	r63
304	do	do	do	1952	Bo	r38
305	do	do	do	1952	Bo	r32
306	Lone Oak	do	do	1952	Bo	r61
307	2 miles east of West Paducah	Don Carroll	do	1952	Bo	r40
308	2 miles north of Lone Oak	J. D. May		1935	Du	r27
309	2¾ miles north of Lone Oak	M. H. Conrad Building Co.			Du	43
310	do	do			Du	58
311	3 miles north of Lone Oak	Roland Hale		1900	Du	27
312	2¼ miles northwest of Lone Oak.	George Eck			Bo	20
313	3¼ miles north of Lone Oak	Twinkling Star Trailer Court.	Beekman Drilling & Contracting Co.	1951	Dr	r159
314	do	do	W. H. Ellis	1949	Dr	r180
315	2¾ miles southeast of West Paducah.	Wyatt Bell	W. C. Thompson.	1952	Dr	r230
316	3¼ miles north of Lone Oak	J. L. Barnette	W. H. Ellis		Dr	r185
317	1½ miles northwest of Lone Oak.	A. W. Barkley			Du	29
318	1¾ miles south of Lone Oak	A. C. Thompson	Casey & Case Foundation Co.	1953	Bo	r105
319	Lone Oak	Mac Mitchell	Henry Harper	1944	Du	r51
320	2¾ miles northwest of Lone Oak.	Ross	Beekman Drilling & Contracting Co.	1953	Bo	r33
321	Lone Oak	I. B. Green			Du	r78
322	3¼ miles southeast of West Paducah.	Lester V. Timmons.	Roy Lucy	1953	Dr	r40
323	do	do	McFarland & Teague.	1953	Dr	r54
324	1½ miles northwest of Lone Oak.	J. P. Stubblefield	Casey & Case Foundation Co.	1952	Bo	r60
325	2 miles northwest of Lone Oak.	J. D. Seaton	Walter Bingham.	1953	Dr	r193
326	3 miles north of Lone Oak	McCracken County Board of Education, Concord School.	P & W Service Co.	1953	Dr	r352

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
4	Very fine sand.	Hs	r80	----------	Cy, E	4	U	
24	----------	Hs	27.28	Oct. 10, 1952	----------	------	U	
36	----------	Pl(?)	20.79	----do----------	Bu	------	D	Temperature 60°F, Oct. 10, 1952.
24	----------	Pl(?)	r3	----------	S, E	6	D	
24	Gravel------	Pl(?)	29.45	Nov. 6, 1952	J, E	6	D	
24	Sand--------	Pl(?)	25.43	----do----------	J, E	8	D	
24	----------	Hs	r20	----------	J, E	9	D	
24	Gravel------	Pl(?)	11.85	Nov. 6, 1952	S, E	6	D	Bottomed in clay.
24	Sand--------	Hs	r63	----------	----------	------	Sp	Depth to top of water-bearing bed, 61 ft; thickness, 2+ ft. Log on p. 205.
24	Gravel------	Pl(?)	----------	----------	----------	------	Sp	Log on p. 205.
24	Sand--------	Hs	----------	----------	----------	------	Sp	Depth to top of water-bearing bed, 30 ft; thickness, 2+ ft. Log on p. 205.
24	Sand--------	Hs	r61	----------	----------	------	Sp	Depth to top of water-bearing bed, 25 ft; thickness, 36+ ft. Log on p. 206.
24	Gravel------	Pl(?)	r34	----------	S, E	8	D	Depth to top of water-bearing bed, 34 ft; thickness, 6 ft. Chemical analysis in table 7.
36	-----do-------	Pl(?)	r19	----------	Bu	------	D	Depth to top of water-bearing bed, 18 ft; thickness, 3+ ft. Clay at 21 ft.
24	-----do-------	Pl(?)	12.50	Nov. 8, 1952	----------	------	U	
36	----------	Pl(?)	26.50	-----do----------	----------	------	U	
24	Gravel------	Pl(?)	19.93	-----do----------	J, E	8	D	
8	----------	Pl(?)	17.64	Nov. 19, 1952	Bu	------	D	Chemical analysis in table 7.
2	Sand--------	Ri	r140	----------	Cy, E	4	C	
2	-----do-------	Ri	r140	----------	Cy, E	8	C	
6	-----do-------	Ri	r180	----------	----------	------	D	10 ft of screen. Log on p. 206.
2	-----do-------	Ri	r140	----------	----------	------	D	
36	----------	Pl(?)	21.18	Apr. 6, 1953	J, E	9	D	
--------	Sand--------	Hs	----------	----------	----------	------	T	Log on p. 206.
36	----------	------	----------	----------	----------	------	T	Log on p. 207.
8	Sand--------	Hs	r23	Mar. 20, 1953	----------	------	D	Do.
--------	----------	------	----------	----------	----------	------	T	Clay at 72 ft.
--------	----------	------	----------	----------	----------	------	T	
2	Sand--------	Pc	r30	July 22, 1953	J, E	6	D	6 ft of 2 in. screen, no. 6 slot.
24	----------	Hs	r56	----------	J, E	6	D	
--------	Sand--------	Ri	r60	----------	J, E	65	D	Log on p. 207.
6 to 4	Fine micaceous sand.	Ri	----------	----------	T	102	P	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3700-327	3¼ miles southeast of West Paducah.	State of Kentucky.	Kentucky Department of Highways.	1953	Dr	r45
8840-3705-1	West Paducah	H. A. Wilcoxon			Du	24
2	do	M. G. Chiles	Rex Mason		Du	31
3	do	G. C. Chiles			Bo	29
4	do	C. W. Vance		1945	Du	32
5	do	B. Darden			Du	31
6	do	C. F. Cathey			Du	18
7	do	John Orange			Du	12
8	do	J. T. Carter			Du	23
9	do	Zack Waldon			Bo	19
10	½ mile east of West Paducah.	Bessie Boatwright.			Bo	44
11	1 mile north of West Paducah.	Mattie Wren			Bo	19
12	1¾ miles north of West Paducah.	J. D. Bennett			Bo	16
13	1½ miles north of West Paducah.	do			Bo	r18
14	1¼ miles north of West Paducah.	Richard Caruthers.			Bo	20
15	1 mile north of West Paducah.	Nancy Dismule			Bo	17
16	¾ mile north of West Paducah.	Marie Smith			Bo	23
17	do	Earl Rouse			Bo	21
18	do	Marie Carter			Bo	24
19	½ mile northeast of West Paducah.	McCracken County Board of Education, West Paducah School.			Bo	15
20	West Paducah	Gabe Baker			Bo	16
21	do	Armada Mitcherson.			Bo	15
22	do	Bertie Brooks			Bo	19
23	do	Raymon Burton			Du	21
24	do	Jerry Unsell			Bo	25
25	½ mile north of West Paducah.	McCracken County Highway Department.			Du	33
26	¾ mile northeast of West Paducah.	Frank White			Bo	23
27	1 mile north of West Paducah.	Frances O'Neal			Bo	18
28	¾ mile northeast of West Paducah.	Harry Mason			Bo	20
29	¾ mile east of West Paducah.	Jack Carroll			Bo	14
30	1¼ miles northeast of West Paducah.	L. H. Scott	L. H. Scott	1951	Bo	44
32	do	E. L. Briney	Beekman Drilling & Contracting Co.	1951	Bo	50
33	do	W. M. Fortson		1948	Du	52
34	do	Stanley Whitaker	Henry Harper	1952	Du	47
35	do	Charles Pugh			Du	r49
36	1½ miles northeast of West Paducah.	S. G. Beekman	Beekman Drilling & Contracting Co.	1952	Bo	r54
37	do	Harry Temple			Bo	44

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
2	----------	Pc	----------	----------	----------	------	Tc	Log on p. 208.
24	Gravel------	Pl(?)	17.67	Apr. 8, 1952	J, E	6	D	Chemical analysis in table 7.
24	-----do------	Pl(?)	19.30	-----do-------	J, E	6	D	
8	-----do------	Pl(?)	17.34	-----do-------	Bu	------	D	Temperature 58° F, Apr. 8, 1952.
24	----------	Pl(?)	18.46	-----do-------	J, E	8	D	
24	Gravel------	Pl(?)	15.04	-----do-------	S, E	6	D	
24	----------	Pl(?)	9.69	-----do-------	Bu	------	D	Temperature 55° F, Apr. 8, 1952.
24	----------	Al	2.25	-----do-------	Bu	------	D	Temperature 50° F, Apr. 8, 1952.
60	----------	Al	6.45	-----do-------	S, E	6	D	Chemical analysis in table 7.
8	Gravel------	Al	2.80	-----do-------	Bu	------	D	
6	----------	Al	At ground level.	-----do-------	Bu	------	D	
8	Gravel------	Al	4.56	Apr. 9, 1952	Bu	------	D	
8	-----do------	Al	3.74	-----do-------	Bu	------	D	
8	-----do------	Al	r90	----------	Bu	------	D	Depth to top of water-bearing bed, 2 ft; thickness, 16 ft.
8	-----do------	Al	7.38	Apr. 9, 1952	Bu	------	D	
8	----------	Al	9.60	-----do-------	Bu	------	D	
6	Gravel------	Al	10.08	-----do-------	Bu	------	D	
8	-----do------	Al	9.94	-----do-------	Bu	------	D	
8	-----do------	Al	10.79	-----do-------	Bu	------	D	
8	-----do------	Al	5.51	-----do-------	Bu	------	P	
8	-----do------	Al	1.16	-----do-------	Bu	------	D	
8	----------	Al	2.30	-----do-------	Bu	------	D	
8	Gravel------	Al	4.68	-----do-------	Bu	------	D	
24	-----do------	Pl(?)	13.28	-----do-------	S, E	6	D	
8	-----do------	Pl(?)	10.50	-----do-------	Bu	------	D	
36	-----do------	Pl(?)	24.55	-----do-------	J, E	4	D	
8	-----do------	Al	12.61	July 1, 1952	Bu	------	D	Bottomed in clay.
8	-----do------	Al	14.01	-----do-------	Bu	------	D	
8	-----do------	Al	14.34	-----do-------	Bu	------	D	
8	----------	Al	11.60	-----do-------	----------	------	U	
8	Gravel------	Pl(?)	39.62	-----do-------	Bu	------	D	
8	-----do------	Pl(?)	41.60	-----do-------	J, E	6	D	
24	-----do------	Pl(?)	45.50	-----do-------	J, E	5	D	
24	-----do------	Pl(?)	42.90	Nov. 18, 1952	J, E	8	D	Chemical analysis in table 7.
24	-----do------	Pl(?)	r45	----------	Bu	------	D	
8	-----do------	Pl(?)	r45	----------	J, E	7	D	
8	-----do------	Pl(?)	41.00	July 1, 1952	Bu	------	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3705-38	1¾ miles northeast of West Paducah.	B. F. Pugh	Buck Abblett	1922	Bo	19
39	do	Ben Boswell			Bo	34
40	2 miles northeast of West Paducah.	Henry Alvey			Bo	28
41	do	J. D. McElroy			Bo	29
42	2¼ miles northeast of West Paducah.	J. C. Massey			Bo	r30
43	do	E. A. Massey			Bo	r31
44	do	T. A. Massey			Bo	30
45	do	C. W. Crenshaw		1918	Bo	27
46	2½ miles northeast of West Paducah.	do		1929	Bo	28
47	do	G. C. Lampkin		1952	Bo	r33
48	1½ miles northeast of West Paducah.	R. M. Sholar			Bo	28
49	do	Clarence Thompson.			Bo	33
50	do	Marshall Jones	Clarence Thompson.		Bo	r32
51	do	Mary McElroy			Bo	31
52	do	J. A. Sholay			Bo	25
53	do	W. H. Leasor			Bo	32
54	do	J. L. Leasor			Bo	29
55	do	Grace Neel			Bo	31
56	do	George Greenwell			Bo	31
57	1¾ miles north of West Paducah.	Monroe McElya			Dr	32
58	1¾ miles north of West Paducah.	Hahs McElroy			Bo	r30
59	1¾ miles north of West Paducah.	W. R. Holland			Bo	26
60	1½ miles north of West Paducah.	do		1940	Bo	r30
61	1¾ miles north of West Paducah.	A. N. Dycus			Bo	32
62	2 miles north of West Paducah.	D. L. Tankersley			Bo	31
63	1¾ miles north of West Paducah.	Bill Cornwell			Bo	26
64	2 miles north of West Paducah.	J. P. Crenshaw			Dr	27
65	1¾ miles north of West Paducah.	C. H. Hall		1942	Bo	r39
66	2¾ miles north of West Paducah.	R. G. Hall			Bo	r34
67	3¼ miles north of West Paducah.	George Moscey			Bo	40
68	2¾ miles north of West Paducah.	Clifton McElye			Bo	r45
69	do	Noel McElya		1940	Bo	54
70	3¼ miles north of West Paducah.	M. C. McElya			Bo	59
71	3¾ miles north of West Paducah.	Alvin Davis			Bo	r60
72	3 miles north of West Paducah.	Noel McElya		1950	Bo	r64
73	2½ miles north of West Paducah.	Cecil Creason			Bo	35
74	do	W. R. Cornwell			Bo	35
75	do	W. A. Sweet			Bo	32
76	do	J. D. Frazee			Bo	30
77	2¼ miles north of West Paducah.	J. M. Alvey			Bo	26
78	do	Maudie Alvey		1934	Bo	19
79	2 miles north of West Paducah.	Thorton Alvey			Bo	26
80	1¾ miles north of West Paducah.	Rudy Wood			Bo	17
81	2 miles north of West Paducah.	Sarah Bobo			Bo	r29

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
8	Gravel	Pl(?)	10.20	July 1, 1952	Bu		D	Chemical analysis in table 7.
8		Pl(?)	7.10	do	Bu		D	Bottomed in clay.
8		Al	15.07	do	Bu		D	
8	Fine gray sand.	Al	15.37	do	Bu		D	
8	Gravel	Al	r15	do	S, E	4	D	
8	do	Al	r14	do	S, E	4	D	
6	do	Al	17.09	do	Bu		D	
8		Al	20.14	do	Bu		D	
8	Sand	Al	18.07	do	Bu		D	
8	Gravel	Al	19.54	do	Bu		D	Chemical analysis in table 7.
8		Al	22.36	do	Bu		D	
8	Gravel	Al	20.52	do	Bu		D	
8		Al	r21	do	Bu		D	
8		Al	23.34	July 2, 1952	Bu		D	Bottomed 6 ft in clay.
8		Al	21.79	do	Bu		D	
8		Al	21.77	do	Bu		D	
6	Sand and gravel.	Al	23.09	do	Bu		D	
8		Al	25.95	do	Bu		D	
8		Al	26.32	do	Bu		D	
36		Al	24.68	do	Bu		D	
8		Al	r23		Bu		D	
8		Al	19.50	July 2, 1952	Bu		D	
8	Gravel	Al	r20		Bu		D	
8		Al	19.94	July 2, 1952	Bu		D	
8		Al	21.04	do	J, E	8	D	
8		Al	19.74	do	Bu		D	
30		Al	22.10	do	Bu		D	
8	Red gravel	Al	r27		Bu		D	Depth to top of water-bearing bed, 35 ft; thickness, 4 ft.
8	do	Al	r20		J, E	6	D	
8		Al	27.45	July 2, 1952	Bu		D	
8	White sand	Al	r40		J, E	5	D	
8	Gravel	Al	41.46	July 2, 1952	J, E	6	D	
6	do	Al	51.55	do	J, E	6	D	Chemical analysis in table 7.
8		Al	r40		J, E	5	D	
8		Al	r44		J, E	6	D	
8	Sand and gravel.	Al	18.46	July 2, 1952	Bu		D	
8		Al	19.08	do	Bu		D	
8		Al	21.29	do	Bu		D	
8		Al	18.44	do	Bu		D	
6		Al	15.46	do	Bu		D	
8		Al	11.75	do	Bu		D	
8		Al	10.73	do	Bu		D	
8		Al	8.50	do	Bu		D	
8		Al	r14		Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3705-82	1¾ miles north of West Paducah.	A. K. Woods			Bo	24
83	1½ miles north of West Paducah.	J. W. Bennett			Bo	11
84	1¼ miles west of Cecil	J. W. Johnson			Du	24
85	1½ miles west of Cecil	W. B. Lampert			Du	24
86	do	W. M. Chambers Establishment.			Du	23
87	do	Robert Cathey			Du	25
88	1¾ miles west of Cecil	W. R. Keel			Bo	r25
89	2 miles west of Cecil	Clarence Salyer			Du	25
90	do	J. H. Cathey			Du	24
91	do	Ray Wise			Bo	32
92	2¼ miles west of Cecil	Frank Ashley			Bo	27
93	2¾ miles northeast of West Paducah.	Floyd Carter			Bo	26
94	do	Fred Bryan			Bo	32
95	2½ miles northeast of West Paducah.	James F. Baker			Bo	26
96	do	W. E. Fondaw		1935	Bo	23
97	do	Clyde Hennessee			Bo	24
98	do	Jack Chapman			Bo	33
99	do	W. S. Johnson			Bo	23
100	2 miles west of Cecil	T. B. Blaylock			Bo	36
101	do	W. A. Merideth			Bo	32
102	2¼ miles west of Cecil	do			Du	25
103	1¾ miles east of West Paducah.	R. C. Slusmeyer		1948	Bo	25
104	do	Robert Hester		1951	Du	22
105	do	Buford Miles			Du	36
106	2 miles west of Cecil	George Marshall			Du	30
107	1¾ miles west of Cecil	S. L. Inman			Du	22
108	do	Edward Lindsey	Henry Harper	1951	Du	17
109	do	W. H. Hines			Bo	22
110	do	R. L. Via			Bo	26
111	1½ miles west of Cecil	Herman Shaffer			Bo	r25
112	1 mile northeast of West Paducah.	W. F. Sanders			Bo	r28
113	1¼ miles northeast of West Paducah.	W. M. Milliken			Du	46
114	1½ miles northeast of West Paducah.	W. M. Milliken			Du	47
115	1¼ miles northeast of West Paducah.	J. M. Wallace		1948	Du	36
116	do	L. E. Wallace		1952	Du	28
117	do	Lottie Yoder			Du	38
118	do	L. A. Johnston			Du	r50
119	do	H. W. Tanner		1937	Du	41
120	do	H. W. Tanner, Jr.		1947	Du	38
121	1¼ miles east of West Paducah.	H. L. McNeill			Bo	46
122	do	do			Du	r45
123	1½ miles east of West Paducah.	George Bobo		1942	Du	39
124	do	J. W. Throgmorton.			Bo	r38
125	do	L. C. Newman			Bo	35
126	1½ miles northeast of West Paducah.	M. E. Sutherland			Du	27
127	1½ miles east of West Paducah.	John Weyers			Bo	37
128	1¾ miles northeast of West Paducah.	John Vannerson			Du	31
129	1¾ miles east of West Paducah.	J. M. Harper			Du	34
130	do	J. D. Vannerson			Du	38
131	do	R. D. Thompson			Du	r38
132	do	Mrs. W. A. Moffitt		1915	Du	33
133	do	Harry Hester, Jr.			Du	20
134	2 miles east of West Paducah.	Harry Hester		1951	Du	21

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
8	----------	Al	12.09	July 2, 1952	S, E	4	D	
8	----------	Al	6.87	----do----	Bu	----	D	
36	----------	Al	14.70	July 7, 1952	Bu	----	D	
24	Gravel----	Al	13.52	----do----	Bu	----	D	Temperature 57°F, July 7, 1952.
24	----------	Al	15.10	----do----	----	----	U	
24	----------	Al	16.00	----do----	J, E	6	D	
8	----------	Al	r15	----------	S, E	4	D	
30	----------	Al	15.00	July 7, 1952	Bu	----	D	Temperature 58°F, July 7, 1952.
48	----------	Al	16.39	----do----	Bu	----	D	
6	----------	Al	16.27	----do----	Bu	----	D	
6	----------	Al	11.59	----do----	Bu	----	D	
6	----------	Al	18.28	----do----	J, E	7	D	
8	----------	Al	21.34	----do----	J, E	6	D	
8	----------	Al	18.11	----do----	Bu	----	D	
12	----------	Al	18.00	----do----	Bu	----	D	
8	----------	Al	13.29	----do----	Bu	----	D	
8	----------	Al	16.85	----do----	Bu	----	D	
6	----------	Al	11.30	----do----	Bu	----	D	
8	----------	Al	14.28	----do----	Bu	----	D	
6	Gravel----	Al	14.20	----do----	Bu	----	D	
18	----------	Al	16.58	----do----	Bu	----	D	
8	----------	Pl(?)	12.03	----do----	S, E	6	D	
24	Gravel----	Pl(?)	18.00	----do----	S, H	----	D	
24	----do----	Pl(?)	32.69	----do----	J, E	6	D	
24	----------	Pl(?)	18.75	----do----	Bu	----	D	Temperature 57°F, July 7, 1952.
24	----------	Pl(?)	18.47	----do----	Bu	----	D	
24	----------	Pl(?)	10.64	----do----	Bu	----	D	Temperature 60°F, July 7, 1952.
6	----------	Al	8.32	----do----	Bu	----	D	
8	----------	Al	14.60	----do----	Bu	----	D	
8	----------	Al	r15	----------	S, H	----	D	
8	Gravel----	Pl(?)	r25	----------	J, E	8	D	
36	----do----	Pl(?)	39.44	July 9, 1952	Cy, E	5	D	Specific capacity in table 6.
18	Gravel----	Pl(?)	41.71	----do----	Bu	----	D	Temperature 58°F, July 9, 1952.
24	----do----	Pl(?)	32.45	----do----	J, E	6	D	
24	----do----	Pl(?)	25.23	----do----	Bu	----	D	
24	----------	Pl(?)	33.79	----do----	J, E	6	D	
24	Gravel----	Pl(?)	r46	----------	Bu	----	D	
24	----do----	Pl(?)	37.19	July 9, 1952	J, E	5	D	
24	----do----	Pl(?)	33.47	----do----	J, E	6	D	
8	----do----	Pl(?)	38.73	----do----	----	----	U	
24	----do----	Pl(?)	r40	----------	J, E	5	D	
24	----do----	Pl(?)	30.20	July 9, 1952	J, E	5	D	
8	----do----	Pl(?)	r30	----------	J, E	7	D	
8	----do----	Pl(?)	25.48	July 9, 1952	J, E	8	D	
36	----do----	Pl(?)	19.05	----do----	J, E	8	D	
6	----do----	Pl(?)	27.00	----do----	Bu	----	D	
36	----do----	Pl(?)	21.77	----do----	J, E	8	D	
24	----------	Pl(?)	26.97	----do----	J, E	6	D	
36	Gravel----	Pl(?)	27.33	----do----	J, E	6	D	
36	----do----	Pl(?)	r28	----------	J, E	5	D, S	
36	----do----	Pl(?)	22.72	July 9, 1952	Bu	----	D	Temperature 57°F, July 9, 1952.
24	----do----	Pl(?)	14.49	----do----	S, E	5	D	
24	----do----	Pl(?)	11.83	----do----	S, E	4	D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3705-135	2 miles east of West Paducah	W. A. Merideth			Du	26
136	do	Max Hester Trailer Park.			Du	21
137	do	do		1952	Du	28
138	2 miles west of Cecil	W. M. Weitlauf		1949	Du	17
139	do	E. G. Trout			Du	18
140	do	Mrs. J. H. Weitlauf.			Bo	26
141	do	Mrs. R. J. Carr		1913	Du	24
142	1¾ miles west of Cecil	C. L. Bailey		1906	Du	r20
143	do	J. L. Edwards			Du	26
144	do	L. R. Allen			Du	11
145	1½ miles west of Cecil	Lillie Beyer		1905	Du	21
146	do	R. O. Moss			Du	25
147	do	J. W. R. Goans			Du	18
148	do	Herman Guenther.			Bo	r15
149	1¼ miles west of Cecil	W. B. Cooper			Du	30
150	do	Fannie Trigg		1917	Bo	35
151	do	C. F. Helton			Du	25
152	do	O. G. Ross	Felix Thompson.	1951	Bo	33
153	do	Elmer Dahm			Du	24
154	do	Henry Dummenier.		1928	Bo	20
155	do	do			Du	r29
156	1¾ miles southwest of Cecil	J. A. Gadberry			Bo	r31
157	1½ miles southwest of Cecil	James Slusmeyer			Bo	30
158	do	Charles Nace		1952	Bo	31
159	do	J. W. Nace			Du	37
160	1¼ miles southwest of Cecil	J. E. Cantrell			Bo	41
161	do	Terrell Morris	Virgil Elrod	1951	Bo	41
162	do	Mrs. Norris White			Du	33
163	do	E. W. Cockrell, Sr.	Henry Harper	1950	Du	33
164	2 miles southwest of Cecil	Robert Bowles			Du	41
165	do	E. A. Morrow			Du	33
166	do	Irvin Goodman			Du	26
167	do	Watter Oliver		1928	Du	r42
168	do	John Barkley			Du	35
169	do	Curtis King			Bo	50
170	1½ miles southwest of Cecil	C. D. Morehouse			Du	23
171	do	do			Bo	23
172	1¼ miles west of Cecil	Olivet Baptist Church.			Du	r13
173	1 mile west of Cecil	Mont Edwards			Bo	30
174	do	Olivet Baptist Parsonage.			Du	28
175	do	Mont Edwards			Du	40
176	do	A. C. Futrell		1940	Du	23
177	do	J. R Spears			Bo	26
178	¾ mile west of Cecil	Maggie Pullen			Bo	25
179	1 mile west of Cecil	Betty Johnson		1942	Bo	21
180	¾ mile west of Cecil	W. M. McKinney			Du	r44
181	do	H. W. Kindred			Bo	36
182	do	Georgie Fortson			Du	26
183	do	Jewel Perry			Bo	31
184	do	Chester Ford			Du	39
185	½ mile west of Cecil	O. C. Wells		1952	Du	38
186	1¼ miles west of Cecil	Adrian Conner			Du	29
187	1 mile west of Cecil	Myrtie Conner			Bo	r30
188	do	Frank Chambers			Bo	24
189	¾ mile west of Cecil	E. A. Turner			Du	18
190	do	Rosco Burgess		1952	Du	17
191	do	Jimmie Edwards			Du	21
192	do	J. M. Snow			Bo	17
193	½ mile west of Cecil	Buster Keeton			Bo	15
194	do	J. A. Myrick			Du	r31
195	do	O. H. Pullen			Bo	21
196	¼ mile west of Cecil	G. R. Clark			Bo	16

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed: Character of material	Principal water-bearing bed: Geologic horizon	Water level: Below land surface (ft)	Water level: Date of measurement	Lift	Estimated capacity of pump (gpm)	Use	Remarks
24		Pl(?)	17.12	July 9, 1952	S, E	4	D	
24	Gravel	Pl(?)	15.25	do	J, E	8	C	Specific capacity in table 6.
24	do	Pl(?)	16.65	do	J, E	8	C	Chemical analysis in table 7.
24	do	Pl(?)	10.25	July 17, 1952	S, E	4	D	
24	do	Pl(?)	12.34	do	Bu		D	Temperature 59°F, July 17, 1952.
8		Pl(?)	17.09	do	Bu		D	
42	Gravel	Pl(?)	15.30	do	Bu		D	Temperature 56°F, July 17, 1952.
24	do	Pl(?)	r12		S, E	6	D	
24	do	Pl(?)	20.08	July 17, 1952	J, E	8	C, D	
24	do	Pl(?)	6.74	do	S, E	4	D	
24	do	Pl(?)	13.08	do	S, E	6	D	
24	do	Pl(?)	16.85	do	S, E	8	D	
30	do	Pl(?)	11.19	do	S, E	7	D	
8		Pl(?)	r6		S, E	4	D	
24		Pl(?)	7.86	July 17, 1952	S, E	8	D	
8		Pl(?)	10.70	do	Bu		D	
24		Pl(?)	9.75	do	S, E	6	C, D	
8	Gravel	Pl(?)	9.54	do	S, E	5	D	
36	do	Pl(?)	12.69	do	S, E	5	D	
8	do	Pl(?)	11.82	do	Bu		D	
8	do	Pl(?)	r20		Bu		D	
6		Pl(?)	r25		J, E	6	D	
8		Pl(?)	14.80	July 17, 1952	J, E	6	D	
8	Sand	Pl(?)	23.84	do	J, E	6	D	
36		Pl(?)	33.55	do	J, E	6	D	
8	Gravel	Pl(?)	23.57	do	J, E	8	D	
8	do	Pl(?)	22.86	do	J, E	8	D	
24		Pl(?)	25.82	do	Bu		D	Temperature 58°F, July 17, 1952.
24	Gravel	Pl(?)	27.75	July 18, 1952	J, E	7	D	
24	do	Pl(?)	33.40	do	Cy, H		D	
30	do	Pl(?)	23.87	do	J, E	8	D	
24	do	Pl(?)	19.16	do	Bu		D	
24		Pl(?)	r33		J, E	6	D	
30	Gravel	Pl(?)	31.03	July 18, 1952	Bu		D	Temperature 58°F, July 18, 1952.
8	do	Pl(?)	35.36	do	J, E	5	D	
24	do	Pl(?)	14.33	do	J, E	6	D	
8		Pl(?)	13.38	do			U	
24	Sand	Pl(?)	r5		S, E	4	D	
8	do	Pl(?)	13.06	July 18, 1952	S, E	6	D	
24	do	Pl(?)	22.78	do	J, E	8	D	
30	Gravel	Pl(?)	33.06	do	Cy, E	6	D	
24		Pl(?)	10.60	do	S, E	5	D	Specific capacity in table 6.
8		Pl(?)	12.20	do	Bu		D	
8		Al	8.20	do	Bu		D	
8	Gravel	Al	6.11	do	Bu		D	
30		Pl(?)	r37		Bu		D	
8		Pl(?)	22.72	July 18, 1952	J, E	6	D	
8	Gravel	Pl(?)	14.90	do	Bu		D	
6		Pl(?)	18.99	do	Bu		D	
24	Sand	Pl(?)	27.84	do	J, E	5	D	
24	do	Pl(?)	27.24	do	Bu		D	
24		Al	15.25	July 21, 1952	S, E	4	D	
8		Al	r15		Bu		D	
8	Gravel	Al	12.00	July 21, 1952	Bu		D	
24		Al	7.58	do	S, H		D	
24	Sand	Al	8.08	do	S, E	6	D	
24	do	Al	8.76	do	S, E	5	D	
8		Al	7.76	do	S, E	6	D	
8		Al	6.28	do	S, E	4	D	
24	Sand	Al	r20		J, E	5	D	
8		Al	7.70	July 21, 1952	S, E	5	D	
8		Al	7.26	do	Bu		D	

TABLE 16.—*Records of wells and test holes*

Well no.	Location	Owner or name	Driller	Date completed	Type of well	Depth of well (ft)
8840-3705-197	Cecil	J. C. Jones			Du	22
198	do	Phylis Bennett			Du	19
199	do	Noah Woods			Bo	21
200	do	Jennie Lefyous			Du	18
201	do	J. T. Boyd		1932	Du	13
202	do	John McCutchen			Du	26
203	do	O. J. Thomasson			Du	23
204	do	H W. Holland			Du	16
205	do	A. F. Griffin			Du	31
206	do	Mrs. W. M. Mitchell.			Du	9
207	do	W. P. Logsdon			Bo	26
208	do	E. L. Campbell			Du	r10
209	¼ mile west of Cecil	R. A. Hines			Du	24
210	do	Marion S. Hines			Bo	r22
211	do	Kentucky Foods Corp.			Dr	r200
212	½ mile west of Cecil	Mary Johnson			Bo	31
213	do	Herbert Grief			Bo	r28
214	do	Harry Davis			Bo	33
215	¾ mile southwest of Cecil	Dexter Howell (Trailer City).	Henry Harper	1950	Du	50
216	do	do	do	1951	Du	45
217	1 mile southwest of Cecil	George Backus			Du	27
218	do	Sadie Herbst			Bo	26
219	do	George Backus			Bo	26
220	do	Owen Martin			Du	26
221	do	Pete Ivitts			Du	35
222	1½ miles southwest of Cecil	Fred Dean			Du	28
223	do	Mrs. H. J. Colman			Bo	17
224	do	do			Du	22
225	do	do			Du	31
226	2 miles east of West Paducah	Max Hester			Du	19
227	4½ miles north of West Paducah.	Illinois Central Railroad.		1915	Dr	75
228	4¼ miles north of West Paducah.	do		1915	Dr	100
229	do	do		1915	Dr	82
230	do	do		1916	Dr	74
231	4 miles north of West Paducah.	do		1915	Dr	60
232	do	do		1915	Dr	53
233	3¾ miles north of West Paducah.	do		1915	Dr	83
234	½ mile northeast of West Paducah.	McCracken County Board of Education.	R. B Elrod	1953	Dr	r353

in the Paducah area, Kentucky—Continued

Diameter of well (in.)	Principal water-bearing bed		Water level		Lift	Estimated capacity of pump (gpm)	Use	Remarks
	Character of material	Geologic horizon	Below land surface (ft)	Date of measurement				
24	-----------	Al	7.19	July 21, 1952	S, E	6	D	
30	-----------	Pl(?)	r12.13	-----do-----	Bu	------	D	
8	-----------	Pl(?)	9.71	-----do-----	Bu	------	D	
30	-----------	Pl(?)	7.09	-----do-----	Bu	------	D	Temperature 63°F, July 21, 1952.
30	Gravel-----	Pl(?)	7.30	-----do-----	Bu	------	D	Temperature 64°F, July 21, 1952.
30	-----------	Pl(?)	16.69	-----do-----	J, E	6	D	
24	-----------	Pl(?)	21.05	-----do-----	J, E	7	D	
24	-----------	Pl(?)	11.24	-----do-----	S, E	6	D	
24	Sand-----	Pl(?)	12.53	-----do-----	Bu	------	D	Temperature 62°F, July 21, 1952.
30	-----do-----	Pl(?)	4.63	-----do-----	Bu	------	D	
8	-----do-----	Pl(?)	6.37	-----do-----	Bu	------	D	
24	-----------	Pl(?)	r6	-----------	S, E	5	D	
24	-----------	Pl(?)	13.48	July 21, 1952	S, E	6	D	Temperature 58°F, July 21, 1952.
8	-----------	Pl(?)	r10	-----------	J, E	6	D	
6	Sand-----	Ri	15.47	July 21, 1952	J, E	10	C	
8	-----------	Pl(?)	11.44	-----do-----	Bu	------	D	
8	Gravel-----	Pl(?)	r14	-----------	S, E	6	D	Temperature 58°F, July 21, 1952.
8	-----do-----	Pl(?)	18.09	July 21, 1952	Bu	------	D	
24	-----do-----	Pl(?)	38.31	-----do-----	J, E	12	C	
24	-----do-----	Pl(?)	40.20	-----do-----	J, E	16	C	Chemical analysis in table 7.
18	-----------	Pl(?)	23.21	-----do-----	Bu	------	D	
10	-----------	Pl(?)	17.27	July 22, 1952	Cy, E	6	D	
8	Sand-----	Pl(?)	20.63	-----do-----	Bu	------	D	
24	-----------	Pl(?)	20.88	-----do-----	Bu	------	D	Temperature 58°F, July 22, 1952.
24	-----------	Pl(?)	22.88	-----do-----	Bu	------	D	Do.
24	Sand and gravel.	Pl(?)	14.61	-----do-----	S, E	4	D	
8	-----------	Pl(?)	8.96	-----do-----	Bu	------	D	
24	-----------	Pl(?)	12.92	-----do-----	------	------	U	
30	-----------	Pl(?)	15.79	-----do-----	J, E	10	D	
24	Gravel-----	Pl(?)	11.94	Apr. 21, 1953	------	------	O	Water-level measurements in table 18.
---------	-----------	Al	----------	----------	------	------	Tc	Log on p. 208.
---------	-----------	Al	----------	----------	------	------	Tc	Log on p. 209.
---------	-----------	Al	----------	----------	------	------	Tc	Do.
---------	-----------	Al	----------	----------	------	------	Tc	Do.
---------	-----------	Al	----------	----------	------	------	Tc	Do.
---------	-----------	Al	----------	----------	------	------	Tc	Log on p. 210.
---------	-----------	Al	----------	----------	------	------	Tc	Do.
6 to 4	Sand-----	Ri	17.36	Jan. 5, 1954	J, E	10	C	Specific capacity in table 6. Chemical analysis in table 7. Log on p. 210.

TABLE 17.—*Records of springs in the Paducah area, Kentucky*

[Use: D, domestic; Ir, irrigation; S, stock; U, unused. All springs in this area are classified as seepage springs. A seepage spring is one in which water percolates from numerous small openings in permeable material]

No.	Location	Owner or name	Topographic situation	Water-bearing material		Improvements	Measured yield (gpm)	Date of measurement	Use	Temperature (°F)	Date	Remarks
				Character of material	Geologic horizon							
8830-3650-18	2¾ miles south of Symsonia.	Ellis Burkhart.	Flood plain.	Sand and gravel.	Gravel of Pliocene(?) age.	2-ft section of 18-in. diameter tile.			D	62	Oct. 30, 1950	Water level, 0.60 ft below land surface, Oct. 30, 1950.
8830-3655-13	1¼ miles northwest of Symsonia.	J. C. Carter	Edge of flood plain.	do	do	2- by 4-ft concrete cribbing and spring house.			D	62	do	Water flows to four houses. Chemical analysis in table 7.
246	2¾ miles southeast of Reidland.	Ewel Downs	In hollow near edge of flood plain.	do	do				S			
8830-3700-302	1 mile southeast of Reidland.	F. L. Babb	In hollow	do	do	2-ft section of 24-in. diameter tile. Electric suction pump.	9	Mar. 9, 1953	D	54	Mar. 9, 1953	
303	do	do	do	do	do		6	do		54	do	
8835-3700-160	1¼ miles north of Lone Oak.	G. R. Noble	Bottom of hill.	Sand	Holly Springs sand.	Dammed-up pool 12 ft in diameter and 3 ft deep. 10 gpm electric suction pump.			Ir			
225	¾ mile southeast of Lone Oak.	Harry Ross	In hollow	do	do	3-ft section of 36-in. diameter tile.	2.5	May 1, 1953	S	57	Oct. 20, 1952	
270	3 miles southeast of Lone Oak.	William Sawyer.	Toe of hill	do	do	3-ft section of 18-in. tile.	.33 .4	Oct. 30, 1952 May 1, 1953	D	57 57	Oct. 30, 1952 May 1, 1953	
8840-3700-19	2 miles east of Massac.	H. M. Reber	In hollow	do	do	5-ft concrete box cribbing and well house. 10 gpm electric suction pump.			D			
111	1¼ miles northeast of Lone Oak.	Della Sisk	Edge of flood plain.	Sand and gravel.	Gravel of Pliocene(?) age.				D			

249	2 miles southeast of West Paducah.	Andy Hoffman.	Flood plain.	do	do				D		
298	1¼ miles north of Lone Oak.	H. E. Weil	Toe of hill	do	do	3-ft section of 36-in. diameter tile. 5 gpm electric suction pump.			D	57	Nov. 6, 1952
8840-3705-31	1 mile north of West Paducah.	State of Kentucky.	do	do	do				U	58	July 1, 1952

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*

[All water levels given in feet below land-surface datum. For description of wells, see table 1. Water levels are tape measurements except for daily readings from recorder graphs]

Well 8330-3650-55. Owner: Artell Holshouser

[Noon daily water level from recorder graph]

Date	Water level	Date	Water level	Date	Water level
Nov. 1, 1950	[a] 30.71	Mar. 25, 1952	[a] 29.59	Dec. 3, 1952	31.02
7	[a] 30.79	Apr. 21	[a] 29.85	4	30.95
22	[a] 30.16	May 16	[a] 30.01	5	30.91
Dec. 4	[a] 30.18	June 12	[a] 30.17	6	30.88
20	[a] 30.31	July 11	[a] 30.70	7	30.87
Jan. 3, 1951	[a] 30.10	Aug. 12	[a] 30.95	8	30.85
30	[a] 30.16	Sept. 9	[a] 30.99	9	30.84
Feb. 12	[a] 29.90	Oct. 7	[a] 31.03	10	30.83
26	[a] 29.71	Nov. 5	[a] 30.95	11	30.81
Mar. 12	[a] 29.84	12	31.10	12	30.82
26	[a] 29.74	13	31.10	13	30.82
Apr. 9	[a] 29.57	14	31.06	14	30.84
23	[a] 29.74	15	31.09	15	30.85
May 14	[a] 30.20	16	31.12	16	30.86
June 4	[a] 30.44	17	31.11	17	30.85
26	[a] 30.22	18	31.09	18	30.87
July 10	[a] 30.13	19	31.06	19	30.86
24	[a] 30.36	20	31.03	20	30.86
Aug. 7	[a] 30.56	21	31.05	21	30.88
21	[a] 30.77	22	31.03	22	30.84
Sept. 4	[a] 30.82	23	31.07	23	30.89
18	[a] 30.83	24	31.08	24	30.93
Oct. 2	[a] 30.80	25	31.03	25	30.95
16	[a] 30.94	26	31.02	26	30.95
30	[a] 30.89	27	31.10	27	30.95
Nov. 13	[a] 30.70	28	31.12	28	30.97
Dec. 11	[a] 30.04	29	31.09	29	30.94
Jan. 1, 1952	[a] 30.07	30	31.09	30	30.92
30	[a] 30.07	Dec. 1	31.08	31	30.91
Feb. 26	[a] 29.73	2	31.03		

[a] Tape measurement.

[Noon daily water level from recorder graph, 1953]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.94	30.44	30.46	30.12	30.14	30.31	30.82	31.10	31.26	31.42	31.43	31.35
2	30.78	30.41	30.45	30.16	30.27	30.34	30.81	31.11	31.25	31.43	31.43	31.33
3	30.82	30.42	30.15	30.16	30.31	30.36	30.87	31.12	31.25	31.44	31.42	31.28
4	30.82	30.46	30.22	30.20	30.28	30.38	30.83	31.13	31.28	31.44	31.42	31.29
5	30.83	30.40	30.21	30.19	30.28	30.41	30.83	31.14	31.29	31.42	31.44	31.30
6	30.80	30.44	30.21	30.13	30.23	30.44	30.85	31.15	31.29	31.43	31.44	31.26
7	30.80	30.47	30.19	30.19	30.23	30.42	30.86	31.16	31.30	-------	31.43	31.29
8	30.74	30.51	30.22	30.17	30.26	30.43	30.88	31.16	31.32	-------	31.43	31.25
9	30.68	30.58	30.22	30.17	30.28	30.48	30.89	31.17	31.32	-------	31.44	31.22
10	30.65	30.55	30.20	30.26	30.29	30.50	30.91	31.17	31.32	-------	31.44	31.26
11	30.72	30.43	30.22	30.26	30.31	30.52	30.92	31.16	31.29	-------	31.41	31.27
12	30.68	30.40	30.22	30.25	30.32	30.52	30.92	31.15	31.32	-------	31.44	31.26
13	30.67	30.40	30.26	30.31	30.37	30.53	30.92	31.15	31.34	-------	31.44	31.22
14	30.66	30.39	30.16	30.30	30.29	30.51	30.91	31.16	31.29	31.44	31.43	31.21
15	30.67	30.39	30.17	30.22	30.22	30.50	30.93	31.16	31.34	31.44	31.41	31.29
16	30.69	30.39	30.16	30.33	30.07	30.52	30.94	31.18	31.34	31.43	31.40	31.33
17	30.57	30.47	30.11	30.28	30.02	30.57	30.93	31.18	31.35	31.44	31.42	31.35
18	30.51	30.44	30.05	30.34	29.89	30.58	30.91	31.19	31.35	31.44	31.42	31.35
19	30.47	30.43	30.06	30.27	29.90	30.60	30.93	31.19	31.35	31.44	31.40	31.34
20	30.47	30.39	30.01	30.27	29.90	30.61	30.93	31.20	31.36	31.45	31.38	31.29
21	30.50	30.48	30.03	30.23	29.90	30.66	30.92	31.21	31.39	31.44	31.40	31.24
22	30.49	30.42	29.98	30.20	29.92	30.67	30.93	31.21	31.40	31.44	31.36	31.27
23	30.40	30.42	29.98	30.24	29.99	30.69	30.96	31.21	31.39	31.42	[b] 31.33	31.33
24	30.40	30.39	29.96	30.19	30.01	30.70	30.97	31.21	31.37	31.42	31.29	31.33
25	30.40	30.39	30.03	-------	30.04	30.73	30.98	31.23	31.37	31.43	31.30	31.28
26	30.40	30.39	30.04	-------	30.08	30.76	30.99	31.22	31.36	31.41	31.34	31.28
27	30.39	30.41	30.04	-------	30.16	30.76	30.99	31.23	31.36	31.40	31.35	31.27
28	30.40	30.48	30.04	-------	30.19	30.79	-------	31.23	31.38	31.41	31.40	31.26
29	30.40	-------	30.08	30.23	30.17	30.81	-------	31.24	31.40	31.42	31.37	31.24
30	30.37	-------	30.06	30.16	30.20	30.81	31.09	31.25	31.42	31.43	31.36	31.28
31	30.38	-------	30.03	-------	30.26	-------	31.09	31.25	-------	31.43	-------	31.30

[b] Estimated.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830-3650-129. Owner: Burt Ray

Date	Water level	Date	Water level	Date	Water level
Oct. 31, 1950	44.16	July 14, 1953	44.66	Dec. 1, 1953	47.35
Nov. 7	44.15	Aug. 11	45.40	29	° 46.32
May 28, 1953	43.22	Sept. 8	46.53		
June 17	43.20	Oct. 7	47.28		

Well 8830-3655-37. Owner: Claude Carter

Nov. 1, 1950	34.15	July 14, 1953	33.90	Nov. 3, 1953	34.33
7	34.15	Aug. 11	34.10	Dec. 1	34.43
May 28, 1953	33.59	Sept. 8	34.19	31	° 34.51
June 16	33.73	Oct. 6	34.26		

Well 8830-3655-129. Owner: Jack Reid

Oct. 2, 1950	23.40	Oct. 30, 1951	27.02	June 23, 1953	25.11
10	24.22	Nov. 13	26.76	30	25.65
23	24.76	Dec. 11	18.84	July 7	25.78
Nov. 7	25.02	Jan. 1, 1952	15.71	14	26.22
22	21.21	30	16.66	21	26.45
Dec. 4	21.25	Feb. 26	16.95	28	26.77
20	17.12	Mar. 25	11.80	Aug. 4	27.13
Jan. 3, 1951	21.59	Apr. 21	16.85	11	27.29
15	14.87	May 19	20.26	18	27.63
30	16.00	June 12	22.75	25	27.80
Feb. 12	14.16	July 11	25.20	Sept. 1	28.07
26	12.55	Aug. 12	26.60	8	28.32
Mar. 12	13.23	Sept. 9	27.45	15	28.50
26	14.18	Oct. 7	27.98	21	28.72
Apr. 9	13.21	Nov. 5	28.26	29	28.81
23	13.90	Dec. 2	28.25	Oct. 6	29.10
May 14	18.00	Jan. 2, 1953	27.76	13	29.25
June 4	22.21	30	25.04	27	29.35
26	23.17	Feb. 25	23.83	Nov. 3	29.45
July 10	20.99	Mar. 26	21.29	10	29.48
24	21.01	Apr. 21	22.47	17	29.40
Aug. 7	23.61	28	22.66	24	29.16
21	25.36	May 5	22.16	Dec. 1	29.35
Sept. 4	25.74	12	22.79	8	29.09
18	26.01	19	19.27	15	29.07
Oct. 2	26.36	26	19.35	22	29.15
16	26.93	June 2	21.30	29	29.21

Well 8830-3655-249. Owner: J. T. Strong

Aug. 10, 1950	11.33	Oct. 23, 1950	12.10	Jan. 3, 1951	7.82
28	11.12	Nov. 6	12.31	15	2.60
Sept. 11	8.61	21	7.53	30	° 6.02
25	10.43	Dec. 4	7.16		
Oct. 10	11.68	20	7.21		

Well 8830-3700-31. Owner: R. J. Dees

Aug. 30, 1950	44.65	June 23, 1953	44.79	Oct. 6, 1953	45.05
Sept. 25	44.65	30	44.90	13	45.07
Oct. 10	44.55	July 7	44.88	20	45.10
23	44.58	14	44.89	27	45.50
Nov. 6	44.61	21	44.89	Nov. 3	45.13
21	44.61	28	44.99	10	45.13
Dec. 4	44.63	Aug. 4	45.00	17	45.05
20	44.68	11	45.05	24	45.33
Jan. 3, 1951	44.50	18	45.03	Dec. 1	45.10
15	44.39	25	45.03	8	45.07
30	44.63	Sept. 1	45.10	15	45.11
Feb. 12	44.56	8	45.04	22	45.10
May 28, 1953	44.92	15	45.10	29	° 45.05
June 9	44.87	21	45.05		
16	44.83	29	45.31		

° Measurement discontinued.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830–3700–87. Owner: Ashland Oil and Refining Co.
[Noon daily water level from recorder graph, 1951]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						75.30	73.36	71.06	75.98	76.59	76 40	72.70
2						74.87	72.90	71.85	75.96	76.40	76 42	72.56
3						74.85	72.53	72.85	76.09	76.47	76 50	72.50
4						74.60	72.11	74.13	76.27	76.51	76 46	72.18
5						75.32	71.82	74.72	76.17	76.58	76 45	71.70
6						75.62	71.49	74.62	76.06	76.60	76 55	71.46
7						74.93	71.20	74.77	76.10	76.53	76 60	71.16
8						74.95	71.07	74.81	76.13	76.51	76 69	70.95
9						75.03	71.02	75.01	76.30	76.57	76.53	69.65
10						75.20	70.84	75.20	76.25	76.59	76.55	68.85
11						75.22	70.70	75.27	76.30	76.54	76.57	68.18
12						75.33	70.70	75.35	76.45	76.51	76.55	67.48
13						75.33	70.73	75.35	76.20	76.65	76.46	66.87
14						75.30	70.78	75.40	76.25	76.53	76.40	66.39
15						75.25	70.71	75.52	76.25	76.55	76.42	65.82
16						75.13	70.57	75.66	76.30	76.58	76.53	65.29
17						75.05	70.42	75.57	76.48	76.60	76.93	64.84
18						74.98	70.29	75.63	76.32	76.55	76.43	64.54
19						74.98	70.13	75.75	76.26	76.61	76.25	64.42
20							70.03	75.78	76.44	76.63	75.02	64.15
21							70.00	75.78	76.37	76.55	74.73	64.00
22							70.01	75.87	76.30	76.50	74.72	63.88
23					71.22		70.00	75.88	76.49	76.43	74.80	63.75
24					71.90		70.04	75.97	76.58	76.58	74.85	63.62
25					72.65		70.00	75.94	76.33	76.55	74.56	63.50
26					73.25	74.15	69.85	75.97	76.26	76.60	74.10	63.37
27					73.73	74.47	69.76	75.90	76.31	76.59	73.55	63.25
28					74.15	74.60	69.69	75.96	76.55	76.46	73.05	62.85
29					74.58	74.27	69.83	76.02	76.37	76.37	72.86	62.43
30					75.02	73.80	70.16	75.88	76.57	76.52	72.84	62.20
31					75.35		70.52	76.12		76.59		62.15

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830-3700-87—Continued

[Noon daily water level from recorder graph, 1952]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	62.05	60.97	67.73	57.84	65.17	71.51	75.99	76.23	76.60	76.84	76 97	76.92
2	62.00	60.43	69.41	57.95	65.03	71.69	75.80	76.25	76.54	76.84	77.01	76.88
3	62.46	59.96	70.10	58.10	64.86	71.77	75.77	76.29	76.62	76.87	77.06	76.97
4	62.86	59.53	70.10	58.25	64.71	71.93	75.72	76.35	76.70	76.88	77.04	76.68
5	63.15	59.07	-------	58.61	64.65	72.07	75.65	76.34	76.68	76.75	77.00	76.67
6	63.23	58.65	-------	69.25	64.67	72.27	75.68	76.35	76.72	76.72	76.98	76.65
7	63.11	58.28	-------	60.00	64.91	72.55	75.67	76.42	76.72	76.83	77.02	76.72
8	62.83	57.92	-------	60.75	65.25	73.05	75.75	76.39	-------	76.79	77.02	76.63
9	62.60	57.86	-------	61.45	66.00	74.10	75.78	76.38	-------	76.79	77.01	76.80
10	62.46	57.80	68.97	62.02	66.65	75.07	75.75	76.35	76.68	76.77	77.00	76.77
11	62.26	57.75	68.92	62.55	67.62	74.11	75.77	76.36	76.82	76.75	76.94	76.70
12	61.65	57.73	66.75	63.08	68.60	74.30	75.82	76.27	76.80	76.83	76.98	76.63
13	61.11	57.84	64.90	63.45	69.46	74.43	75.83	76.26	76.87	76.77	77.00	77.43
14	60.81	57.84	63.30	63.73	70.27	74.52	75.78	76.30	76.84	76.69	76.99	77.57
15	60.75	57.95	62.27	63.93	70.88	74.65	75.80	76.34	76.74	76.75	76.90	77.74
16	61.33	58.28	61.85	64.17	71.42	74.55	75.90	76.32	76.65	76.80	76.98	77.83
17	61.85	58.68	61.37	64.28	71.96	74.95	75.85	76.42	76.75	76.87	75.96	77.84
18	62.75	59.25	61.17	64.33	72.29	75.05	75.93	76.38	76.73	76.86	76.90	77.80
19	63.70	59.90	61.33	64.45	72.28	75.04	75.94	76.41	76.73	76.84	76.82	77.63
20	64.76	60.72	61.31	64.67	72.23	75.15	75.95	76.42	76.74	76.89	76.80	77.50
21	65.70	61.45	61.39	64.83	72.33	75.09	76.03	76.39	76.72	76.95	76.86	77.70
22	66.32	62.20	60.88	64.87	72.44	75.17	76.05	76.48	76.80	76.93	76.88	77.36
23	66.27	63.25	60.06	64.79	72.55	75.21	76.08	76.48	76.74	76.93	76.90	77.26
24	65.63	63.15	59.13	64.62	72.57	76.22	76.10	76.50	76.82	76.83	76.91	77.29
25	64.70	65.00	-------	64.56	72.55	75.93	76.10	76.48	76.83	76.95	76.83	77.29
26	64.10	65.75	-------	64.59	72.44	75.77	76.15	76.58	76.84	76.95	77.15	77.29
27	63.65	66.52	-------	64.75	72.16	76.12	76.17	76.53	76.84	76.93	76.87	77.25
28	63.12	67.22	-------	64.93	71.90	75.92	76.18	76.62	76.82	76.93	77.15	77.17
29	62.62	67.91	-------	65.08	71.65	75.90	76.15	76.65	76.90	76.83	77.04	77.26
30	62.04	-------	-------	65.18	71.50	76.15	76.22	76.55	76.83	76.93	76.95	77.21
31	61.48	-------	57.83	-------	71.43	-------	76.25	76.60	-------	76.90	-------	76.97

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830-3700-87—Continued

[Noon daily water level from recorder graph, 1953]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	76.98	-------	-------	70.08	71.39	[b]70.20	76.20	76.74	77.06	77.26	77.31	77.19
2	76.92	-------	-------	70.04	71.00	[b]70.64	76.15	76.70	77.09	77.35	77.34	77.20
3	76.93	-------	-------	69.88	70.95	71.43	76.23	76.78	77.07	77.40	77.28	77.15
4	76.92	72.85	-------	69.80	71.15	72.20	76.45	76.74	77.00	77.37	77.28	77.12
5	76.97	73.02	-------	69.80	71.31	72.92	76.43	76.76	76.97	77.35	77.27	77.18
6	76.95	73.22	-------	69.87	71.25	73.51	76.31	76.72	76.90	77.23	77.27	77.09
7	76.86	73.22	-------	69.95	71.24	74.04	76.48	76.74	76.94	77.25	77.26	77.19
8	76.76	73.41	-------	70.10	71.85	74.52	76.50	76.78	77.02	77.25	77.25	77.28
9	77.61	73.70	-------	70.33	72.19	74.72	76.50	76.73	77.04	77.23	77.28	77.14
10	77.73	74.00	66.81	70.60	72.65	74.88	76.42	76.66	77.06	77.15	77.27	77.11
11	77.43	74.77	66.98	70.90	72.75	75.00	76.51	76.81	77.07	77.18	77.22	77.15
12	76.58	74.37	67.22	71.23	-------	75.09	76.51	76.78	77.04	77.30	77.23	77.35
13	75.52	73.51	67.50	71.57	-------	75.33	76.44	76.86	77.00	77.26	77.25	77.28
14	74.88	-------	67.95	71.66	-------	75.69	76.65	76.81	77.01	77.20	77.27	77.18
15	73.99	-------	68.22	71.64	-------	75.78	76.64	76.80	77.05	77.08	77.26	77.12
16	73.93	-------	68.52	71.75	-------	75.51	76.62	76.79	77.06	77.24	77.36	77.34
17	73.93	-------	68.82	71.80	-------	75.48	76.65	76.78	77.08	77.15	77.34	77.42
18	73.99	-------	69.01	71.83	-------	75.75	76.58	76.92	77.12	77.22	77.33	77.29
19	74.29	-------	68.89	71.73	69.12	75.70	76.52	76.92	77.08	77.32	77.30	77.33
20	74.11	-------	-------	71.66	68.06	75.68	76.51	76.91	77.10	77.27	77.24	77.32
21	74.01	-------	-------	71.64	67.66	75.82	76.58	76.99	77.16	77.26	77.26	77.19
22	73.76	-------	-------	71.57	67.59	75.98	76.47	76.90	77.19	77.33	77.16	77.30
23	73.48	-------	-------	71.53	67.70	76.14	76.55	76.85	77.20	77.35	77.10	77.46
24	73.12	-------	68.55	71.55	68.06	76.06	76.55	77.02	77.20	77.37	77.15	77.46
25	73.02	-------	68.30	71.49	68.58	76.08	76.62	76.98	77.21	77.42	77.16	77.48
26	-------	-------	68.40	71.45	68.77	76.10	76.63	77.03	77.15	77.49	77.19	77.29
27	-------	-------	68.72	71.53	68.78	76.18	76.71	77.02	77.18	77.35	77.26	77.35
28	-------	-------	69.15	71.71	68.75	76.15	76.59	77.03	77.19	77.33	77.27	77.40
29	-------	-------	69.56	72.02	68.83	76.16	76.67	77.07	77.15	77.33	77.18	77.42
30	-------	-------	69.87	72.13	69.22	76.10	76.67	77.04	77.18	77.33	77.27	77.29
31	-------	-------	70.02	-------	[b]69.65	-------	76.75	77.05	-------	77.32	-------	77.35

[b] Estimated.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830-3700-112. Owner: T. C. Brokaw

Date	Water level	Date	Water level	Date	Water level
July 10, 1950	14.74	Sept. 25, 1950	15.07	Dec. 20, 1950	10.57
17	15.11	Oct. 10	14.45	Jan. 3, 1951	10.52
31	15.25	23	14.42	15	3.97
Aug. 14	15.07	Nov. 6	15.18	30	[c] 8.59
28	15.52	21	8.00		
Sept. 11	7.61	Dec. 4	9.13		

[c] Measurement discontinued.

Well 8830-3700-135. Owner: Mrs. J. C. Morgan

July 26, 1950	8.67	Oct. 2, 1951	9.70	June 9, 1953	8.25
31	8.96	16	10.70	16	8.48
Aug. 14	8.52	30	10.83	23	9.66
28	8.99	Nov. 13	9.50	30	10.27
Sept. 11	4.66	Dec. 11	3.89	July 7	10.92
25	7.04	Jan. 1, 1952	4.85	14	11.49
Oct. 10	7.91	30	5.09	21	11.80
23	8.09	Feb. 26	4.67	28	12.16
Nov. 6	8.33	Mar. 25	4.02	Aug. 4	12.62
21	3.74	Apr. 21	5.11	11	12.78
Dec. 4	4.30	May 16	6.97	18	13.13
20	5.43	June 12	8.14	25	13.41
Jan. 3, 1951	4.22	July 11	10.68	Sept. 1	13.69
15	2.56	Aug. 12	12.22	8	13.90
30	5.18	Sept. 9	12.99	15	13.59
Feb. 12	4.53	Oct. 7	13.53	21	14.34
26	4.13	Nov. 5	13.60	29	14.31
Mar. 12	3.92	Dec. 2	13.70	Oct. 6	14.51
26	4.57	Jan. 2, 1953	13.17	13	14.61
Apr. 9	4.22	30	8.50	20	14.72
23	4.21	Feb. 25	6.47	27	14.74
May 14	6.89	Mar. 26	4.63	Nov. 3	14.80
June 4	6.13	Apr. 21	6.55	10	14.83
26	5.76	28	6.78	17	14.84
July 10	4.91	May 5	6.39	24	14.79
24	7.41	12	6.64	Dec. 1	14.88
Aug. 7	8.90	19	2.88	8	14.84
21	10.15	26	5.15	15	14.86
Sept. 4	10.08	28	5.87	22	14.84
18	9.62	June 2	7.14	29	14.87

Well 8830-3700-144. Owner: L. B. Stinson

[Noon daily water level from recorder graph]

Oct. 16, 1950	[a] 85.95	Dec. 16, 1950	78.80	Dec. 25, 1950	80.69
23	[a] 85.99	17	78.52	26	81.40
Nov. 6	[a] 86.61	18	78 29	27	82.05
21	[a] 86.08	19	78.10	28	82.54
Dec. 4	[a] 83.84	20	78.09	29	82.98
12	80.08	21	78.26	30	83.37
13	79.73	22	78.62	31	83.83
14	79.35	23	79.24		
15	79.06	24	79.98		

[a] Tape measurement.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8830-3700-144—Continued

[Noon daily water level from recorder graph, 1951]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	84.15	77.12	72.26	72.55	75.55							
2	84.40	77.01	72.30	72.35	74.95							
3	84.49	76.59	72.25	72.23	76.31							
4	84.26	76.40	72.30	72.12	76.62							
5	83.62	76.28	72.33	72.25	76.97							
6	82.93	76.04	72.34	72.50	77.21							
7	82.30	75.73	72.45	72.90	77.40							
8	81.76	75.38	72.56	73.08	77.50							
9	81.38	75.02	72.76	73.18	77.55							
10	81.09	74.67	72.84	73.27	77.54							
11		74.35	72.92	73.31	77.67							
12		74.37	73.03	73.36	77.94							
13		74.60	73.21	73.48	78.28							
14		74.92	73.37	73.59	78.55							
15		74.90	73.46	73.74	78.78							
16		74.78	73.57	73.83	79.00							
17	77.10	74.68	73.82	73.94	79.20							
18	76.90	74.80	73.87	73.93	79.40							
19	76.72	74.82	73.80	73.99	79.65							
20	76.66	74.37	73.72	74.08	79.90							
21	76.79	73.96	73.57	74.01	80.16							
22	76.72	73.50	73.50	73.89	80.50							
23	76.66	73.11	73.68	73.67	[c] 80.92							
24	76.60	72.86	73.87	73.50								
25	76.54	72.54	73.91	73.52								
26	76.50	72.30	74.02	73.58								
27	76.46	72.26	74.02	73.77								
28	76.59	72.14	73.95	74.18								
29	76.84		73.35	74.57								
30	76.88		73.19	75.01								
31	77.00		72.97									

Well 8835-3650-6. Owner: Forrest Rhew

Date	Water level	Date	Water level	Date	Water level
Oct. 11, 1950	40.82	Aug. 21, 1951	40.46	Nov. 5, 1952	40.18
Nov. 7	40.99	Sept. 4	40.41	Dec. 2	40.28
22	40.84	18	40.47	Jan. 2, 1953	40.11
Dec. 4	40.66	Oct. 2	40.46	30	40.13
20	40.94	16	40.61	Feb. 25	40.27
Jan. 3, 1951	40.19	30	40.43	Mar. 26	39.87
30	40.77	Nov. 13	40.37	Apr. 25	39.85
Feb. 12	40.54	Dec. 11	40.27	May 21	39.52
26	40.29	Jan. 1, 1952	40.06	28	39.92
Mar. 12	40.55	30	40.17	June 16	39.83
26	40.48	Feb. 26	40.07	July 14	39.89
Apr. 9	40.05	Mar. 25	39.65	Aug. 11	40.00
23	40.38	Apr. 21	39.94	Sept. 8	40.20
May 14	40.46	May 16	39.79	Oct. 6	40.29
June 4	40.28	June 12	39.82	Nov. 3	30.45
26	40.43	July 11	39.92	Dec. 1	40.56
July 10	40.39	Aug. 12	39.75	29	[c] 40.48
24	40.42	Sept. 9	40.12		
Aug. 7	40.42	Oct. 7	40.10		

Well 8835-3655-39. Owner: Solon Smith

Oct. 18, 1950	28.18	July 14, 1953	27.04	Nov. 3, 1953	29.22
Nov. 7	28.29	Aug. 11	27.69	Dec. 1	28.67
May 28, 1953	21.57	Sept. 8	28.02	29	[c] 28.59
June 16	25.48	Oct. 6	28.19		

[c] Measurement discontinued.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835-3655-76. Owner: C. H. Powell

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1950	43.33	Dec. 4, 1950	43.30	Oct. 6, 1953	42.47
10	43.32	20	43.39	Nov. 3	42.55
23	43.42	July 14, 1953	42.45	Dec. 1	42.51
Nov. 7	43.30	Aug. 11	42.45	29	•42.49
22	43.13	Sept. 8	42.46		

• Measurement discontinued.

Well 8835-3655-121. Owner: James E. Brooks

Oct. 16, 1950	61.06	Nov. 22, 1950	60.40	Dec. 20, 1950	61.04
Nov. 7	60.89	Dec. 4	60.87		

[Noon daily water level from recorder graph, 1951]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				60.25	60.27	60.22	60.15	60.08	60.00	59.99	60.18	59.96
2				60.32	60.31	60.14	60.18	60.06	60.13	59.83	60.22	59.91
3	•59.09			60.60	60.05	60.09		60.02	60.22	59.86	59.98	59.30
4				60.58	59.92	60.26	60.03	60.19	60.23	60.00	60.29	59.44
5				60.62	60.14	60.11	60.29	60.18	60.07	60.19	60.34	59.48
6				60.27	60.31	59.93	60.25	60.03	60.08	60.14	59.68	59.68
7				60.09		59.86	60.11	59.90	60.24	60.28		60.23
8				60.01	60.35	59.98	59.98	59.88	60.16	60.34	60.30	60.20
9				60.37	60.22	60.10	60.02	60.06	59.96	60.20	60.23	
10				60.29	60.01	60.04	60.13	60.16	59.93	60.18	60.18	
11				59.92	60.22	60.09	60.14	60.17	60.17	60.14	60.14	59.55
12		•60.29	•60.48	60.04	60.41	60.02	60.13	60.20	60.07	60.24	59.81	59.62
13				60.17	60.46	60.21	60.14	60.16	60.14	60.23	59.59	60.20
14				60.16	60.46	60.23	60.15	60.10	60.25	60.21	60.07	59.15
15				60.44	60.45	60.09	60.12	60.13	60.22	60.12	60.10	60.60
16				60.56	60.21	59.99	60.10	60.05	60.23	60.08	60.39	60.45
17				60.55	60.07	60.06	60.08	60.05	60.14	60.16	60.56	59.85
18				60.14	60.10	60.13	60.07	60.08	60.08	60.15	60.38	59.82
19				60.27	60.08		60.02	60.11	60.12	60.27	60.34	59.81
20				60.49	60.01		60.07	60.05	60.11	59.98	60.29	59.25
21				60.20	60.07		60.08	60.07	60.13	59.98	60.12	59.90
22				60.42	60.01		60.14	60.17	60.02	60.12	60.08	60.11
23				60.60	60.22		60.13	60.21	60.22	59.99	60.00	60.13
24				60.18	60.14		60.07	60.11	60.09	60.31		60.25
25				60.20	60.11		60.08	60.05	60.07	60.22		58.25
26		•60.37	60.37	60.34	59.96	60.06	60.11	60.00	59.91	60.09		60.24
27			60.15	60.31	60.10	60.07	60.02	59.93	60.19	59.96	59.99	60.45
28			59.87		60.13	60.09	59.99	60.07	60.42	59.97	59.92	59.60
29			59.88		60.23	60.10	60.04	60.07	60.22	60.02	60.08	59.35
30	•61.05		60.24	60.12	60.28	59.99	60.10	60.03	60.07	60.01	60.05	59.50
31			60.29		60.28		60.02	59.99		60.22		59.68

• Tape measurement.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835-3655-121—Continued

[Noon daily water level from recorder graph, 1952]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	60.23	59.85	60.16	59.64	59.73	59.78	59.65	59.75				
2	57.70	59.62	59.78	59.90	59.65	59.70	59.75	59.55				
3	59.58	59.10	59.46	59.87	59.73	59.55	59.75	59.57				
4	57.10	59.42	60.30	59.30	59.84	59.65	59.75	59.60				
5	59.30	59.87	60.38	59.96	59.74	59.60	59.70	59.76				
6	59.87	60.10	60.30	60.13	59.66	59.72	59.67	59.76				
7	59.77	60.13	60.15	60.07	59.78	59.66	59.65					
8	59.22	59.68	59.70	59.84	59.63	59.60	59.58					
9	59.70	60.01	59.46	59.86	59.41	59.62	59.70					
10	60.44	59.62	56.35	60.05	59.74	59.60	59.67					
11	60.20	59.99	59.30	59.90	59.83		59.75					
12	59.90	59.85	59.12	59.47	59.95		59.82					
13	59.67	59.58	59.68	59.26	59.97	59.68	59.70	59.80	59.79			
14	59.60	60.07	59.91	59.73	59.65	59.72	59.60		59.79			
15	59.98	60.02	60.11	59.98	59.60	59.62	59.64		59.84			
16	59.87	59.80	60.04	60.15	59.68	59.52	59.67		59.72			
17	59.65	60.09	59.72	60.13	59.71	59.62	59.70		59.57			
18	60.12	60.00	59.15	59.94	59.72	59.64	59.75		59.60			
19	59.46	59.77	59.67	59.79	59.67	59.62	59.67		59.88			
20	60.17	59.97	59 70	59.80	59.62	59.52	59.57		59.97			
21	59.73	60.16	59.57	59.79	59.76	59.58	59.60		59.96			
22	59.72	59.96		59.75	59.74	59.66	59.65		59.84			
23	60.39	59.82		59.64	59.65	59.65	59.65		59.92			
24	60.29	59.83		59.69	59.58	59.55	59.72					
25	59.62	60.10		59.73	59.63	59.55	59.65					
26	59.55	59.93	60.04	59.70	59.76	59.62	59.71					
27	59.90	59.67	60.07	59.67	59.73	59.65	59.67					
28	59.97	59.39	60.00	59.67	59.76	59.64	59.55					
29	60.22	59.38	59.97	59.67	59.70	59.58	59.60					
30	60.25		59.93	59.73	59.55	59.54	59.69					
31	60.05		59.56		59.59		59.76					

Well 8835-3655-121—Continued

Date	Water level	Date	Water level	Date	Water level
June 12, 1953	59.96	Aug. 11, 1953	60.04	Oct. 29, 1953	60.29
16	59.89	Sept. 8	60.16	Dec. 1	60.27
July 14	59.88	Oct. 6	60.10	29	° 60.10

Well 8835-3700-135. Owner: Terrell Floral Co.

July 17, 1950	38.05	Oct. 10, 1950	37.30	Jan. 3, 1951	35.31
31	36.53	23	37.09	15	26.14
Aug. 14	35.98	Nov. 6	37.42	30	35.03
28	36.62	21	31.35	Feb. 12	° 33.54
Sept. 11	31.82	Dec. 4	34.37		
25	36.17	20	35.89		

° Measurement discontinued.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835-3700-165. Owner: W. C. Harton

Date	Water level	Date	Water level	Date	Water level
Nov. 5, 1952	29.81	June 16, 1953	29.89	Sept. 29, 1953	29.98
Dec. 2	29.98	23	29.82	Oct. 6	30.06
Jan. 2, 1953	29.84	30	29.87	13	30.12
30	30.07	July 7	29.82	20	30.17
Feb. 11	29.94	14	29.82	27	30.03
25	29.96	21	29.79	Nov. 3	30.19
Mar. 27	29.96	28	29.85	10	30.26
Apr. 21	29.92	Aug. 4	29.88	17	30.17
28	29.93	11	29.88	24	30.02
May 5	29.94	18	29.96	Dec. 1	30.20
12	29.82	25	29.99	8	30.19
19	29.80	Sept. 1	30.02	15	29.99
26	29.82	8	30.02	22	30.28
June 2	29.81	15	29.95	29	30.18
9	29.83	21	30.10		

Well 8835-3700-194. Owner: A. L. Rydzewski

Oct. 10, 1952	30.45	June 2, 1953	29.67	Sept. 21, 1953	30.69
Nov. 5	30.41	9	29.80	29	30.49
Dec. 2	30.59	16	29.73	Oct. 6	30.63
Jan. 2, 1953	30.17	23	29.92	13	30.71
30	30.23	30	30.02	20	30.69
Feb. 11	29.89	July 7	30.45	27	30.57
25	29.99	14	30.04	Nov. 3	30.80
Mar. 27	29.79	21	30.06	10	30.98
Apr. 7	30.09	28	30.17	17	30.74
14	29.90	Aug. 4	30.38	24	30.55
21	29.80	11	30.49	Dec. 1	30.85
28	29.66	18	30.54	8	30.85
May 5	29.93	25	30.10	15	30.50
12	29.90	Sept. 1	30.52	22	30.93
19	29.53	8	30.50	29	30.78
26	29.52	15	30.46		

Well 8835-3700-202. Owner: Mrs. Bessie Ross

Oct. 15, 1952	22.96	June 2, 1953	22.97	Sept. 21, 1953	23.34
Nov. 5	23.12	9	22.97	29	23.42
Dec. 2	23.34	16	22.89	Oct. 6	23.51
Jan. 2, 1953	23.28	23	22.98	13	23.63
30	23.48	30	23.03	20	23.65
Feb. 11	23.30	July 7	23.00	27	23.53
25	23.47	14	23.01	Nov. 3	23.67
Mar. 27	23.24	21	23.00	10	23.78
Apr. 7	23.12	28	23.09	17	23.74
14	23.23	Aug. 4	23.11	24	23.54
21	23.14	11	23.21	Dec. 1	23.76
28	23.05	18	23.25	8	23.81
May 5	23.13	25	23.32	15	23.90
12	23.03	Sept. 1	23.35	22	23.87
19	22.83	8	23.39	29	23.80
26	22.98	15	23.36		

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835-3700-203. Owner: Mrs. M. Yopp

[Noon daily water levels from recorder graph]

Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1952	[a] 6.74	Nov. 28, 1952	6.80	Dec. 15, 1952	6.13
Nov. 5	[a] 6.63	29	6.70	16	6.16
12	6.74	30	6.72	17	6.12
13	6.71	Dec. 1	6.66	18	6.11
14	6.64	2	6.48	19	6.16
15	6.66	3	6.53	20	6.02
16	6.69	4	6.17	21	6.08
17	6.69	5	6.12	22	6.02
18	6.66	6	6.16	23	5.98
19	6.52	7	6.18	24	6.17
20	6.52	8	6.17	25	6.18
21	6.58	9	6.14	26	6.16
22	6.56	10	5.91	27	6.14
23	6.66	11	6.03	28	6.16
24	6.67	12	6.03	29	6.06
25	6.46	13	6.10	30	5.99
26	6.50	14	6.10	31	5.93
27	6.75				

[Noon daily water level from recorder graph, 1953]

Day	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.02	4.87	4.99	4.85	------	5.45	6.10	6.80	7.17	------	------	6.83
2	5.72	4.86	2.10	4.97	4.30	5.55	6.03	6.88	7.16	------	------	6.76
3	5.82	4.89	1.82	4.97	4.60	5.55	6.10	6.91	7.14	------	7.02	6.59
4	5.85	5.06	2.56	5.06	4.73	5.55	6.16	6.91	7.13	------	7.02	6.61
5	5.82	5.01	3.40	5.04	4.54	5.59	6.21	6.81	[b] 7.18	------	7.15	6.70
6	5.90	4.28	4.14	4.91	4.46	5.64	6.21	6.82	------	------	7.10	6.45
7	5.97	4.35	4.42	4.71	4.28	5.64	6.26	6.83	------	------	7.03	6.66
8	.34	4.64	4.77	4.68	4.25	5.64	6.24	6.80	7.30	------	7.01	6.60
9	2.04	4.94	4.91	4.69	4.42	5.74	6.32	6.80	------	------	7.00	6.47
10	2.66	4.99	4.91	4.85	4.46	5.83	6.40	6.82	------	------	7.00	6.64
11	3.14	4.30	4.95	4.90	4.53	5.85	6.41	6.83	------	------	6 93	6.65
12	3.41	3.76	4.98	4.88	4.52	5.84	6.48	6.84	------	------	6 95	6.64
13	3.34	4.23	5.05	5.02	4.57	5.91	6.43	------	------	------	6.96	6.55
14	3.39	4.41	1.93	5.05	------	5.75	6.42	------	------	------	6.96	6.44
15	3.43	4.64	2.58	4.92	3.04	5.73	6.54	------	------	------	6 89	6.64
16	2.73	4.73	3.57	5.10	2.02	5.73	6.61	------	------	------	6.85	6.75
17	1.54	5.13	3.94	5.04	2.35	5.83	6.56	7.00	------	------	6.85	6.86
18	3.16	5.15	2.36	4.16	2.39	5.85	6.49	7.01	------	------	6.85	6.85
19	4.09	5.13	3.38	4.21	2.56	5.88	6.59	7.03	------	------	6.83	6.71
20	4.51	2.90	3.94	4.55	3.46	5.92	6.50	7.03	------	------	6.69	6.55
21	4.07	2.85	4.34	4.63	4.15	6.03	6.50	7.07	------	------	6 82	6.40
22	4.39	3.88	1.96	4.64	4.57	6.15	6.44	7.08	------	------	6.64	6.61
23	3.68	4.33	2.67	4.75	5.04	6.15	6.46	7.20	------	------	6.67	6.81
24	2.67	4.40	3.37	4.75	4.99	6.20	6.50	7.08	------	------	6.56	6.82
25	3.72	4.47	4.00	4.57	5.01	6.20	6.56	7 09	------	------	6.59	6.64
26	4.27	4.58	4.69	4.65	5.15	6.29	6.60	7.12	------	------	6.75	6.58
27	4.56	4.70	4.62	4.82	5.34	6.28	6.65	[b] 7.17	------	------	6.81	6.57
28	3.90	4.96	4.77	4.78	5.38	6.28	6.64	[b] 7.15	------	------	6.98	6.47
29	4.15	------	4.84	4.75	5.33	6.17	6.65	7.10	------	------	6.88	------
30	4.52	------	4.84	------	5.30	6.16	6.72	7.13	------	------	6.86	------
31	4.71	------	4.80	------	5.35	------	6.75	7.16	------	------	------	------

[a] Tape measurement
[b] Estimated.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835-3700-243. Owner: J. E. Hayes

[Noon daily water level from recorder graph]

Date	Water level	Date	Water level	Date	Water level
Nov. 11, 1952	38.19	Nov. 27, 1952	38.30	Dec. 13, 1952	38.23
12	38.20	28	38.32	14	38.24
13	38.20	29	38.31	15	38.25
14	38.20	30	38.34	16	38.27
15	38.22	Dec. 1	38.32	17	38.27
16	38.24	2	38.31	18	38.29
17	38.25	3	38.32	19	38.29
18	38.24	4	38.18	20	38.28
19	38.16	5	38.21	21	38.29
20	38.17	6	38.21	22	38.28
21	38.19	7	38.22	23	38.31
22	38.20	8	38.22	24	38.35
23	38.24	9	38.15	25	38.36
24	38.25	10	38.17	26	38.37
25	38.19	11	38.18	27	38.38
26	38.25	12	38.22	28	38.35

[Noon daily water level from recorder graph, 1953]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		38.46			38.02	38.06	38.19		39.00	39.36	39.55	[a] 39.70
2		38.46			38.07	38.07	38.20		39.00	39.37	39.56	
3		38.45			38.09	38.07	38.22		39.00	39.40	39.58	
4		38.47			39.09	38.07	38.22		39.01	39.40	39.59	
5		38.44			38.06	38.07	38.23		39.04	39.36		
6		38.44			38.07	38.08	38.24		39.05	39.36		
7		38.45			38.05	38.05	38.25		39.07	39.38		
8		38.50			38.05	38.05	38.25		39.10	39.38		
9		38.43			38.06	38.09	38.28			39.38		
10		38.45			38.06	38.10	38.30			39.38		
11		38.46	38.46		38.04	38.11	[b]38.31			39.38		
12		38.42	38.42		38.04	38.11	[b]38.33			39.41		
13					38.05	38.11	38.35			39.44		
14					37.99		38.36			39.46		
15				38.19	37.99		38.36		39.16	39.46		
16				38.22	37.92	38.09	38.37		39.16	39.47		
17		38.38		38.21	37.92	38.10	38.35		39.17	39.47		
18		38.31		38.13	37.91	38.11	38.35	38.80		39.50		
19				38.15	37.93	38.12	38.36			39.50		
20				38.17	37.93	38.13	38.38			39.50		
21				38.16	37.94	38.15	38.38			39.51		
22				38.13	37.94	38.17	38.36		39.30	39.51		
23				38.14	37.96	38.19	38.39		39.30	39.51		
24				38.10	37.97		38.41		39.30	39.51		
25			38.32	38.09	37.98		38.44	38.92	39.30	39.51		
26			38.34	38.10	38.01		38.46	38.92	39.29	39.51		
27			38.33	38.12	38.04		38.51	38.94	39.29	39.47		
28			38.32	38.10	38.05			38.94	39.31	39.49		
29			38.32	38.08	38.04			38.95	39.32	39.52		[a] [c] 39.72
30	38.43		38.31	37.99	38.03	38.20		38.97	39.34	39.54		
31	38.43				38.04			38.99				

[a] Tape measurement.
[b] Estimated.
[c] Measurement discontinued.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8835–3705–6. Owner: Mose McCrucher

Date	Water level	Date	Water level	Date	Water level
July 10, 1950	13.23	Mar. 12, 1951	9.30	Jan. 1, 1952	8.72
17	12.27	26	9.10	30	9.69
31	11.39	Apr. 9	9.09	Feb. 26	9.29
Aug. 14	11.12	23	8.46	Mar. 25	8.03
28	11.23	May 14	10.37	Apr. 21	9.28
Sept. 11	9.02	June 4	9.67	May 16	10.44
25	10.51	26	8.94	June 12	11.64
Oct. 10	11.09	July 10	9.19	July 11	13.75
23	11.31	24	10.74	Aug. 12	14.36
Nov. 6	11.27	Aug. 7	11.85	Sept. 9	13.17
21	8.24	21	12.83	Oct. 6	13.22
Dec. 4	8.79	Sept. 4	12.40	Nov. 5	12.85
20	9.58	18	11.55	Dec. 2	12.05
Jan. 3, 1951	8.66	Oct. 9	11.88	Jan. 2, 1953	10.80
15	5.37	16	12.13	30	6.37
30	9.82	30	11.94	Feb. 25	[c] 6.34
Feb. 12	9.33	Nov. 13	10.92		
26	8.68	Dec. 11	7.42		

[c] Measurement discontinued.

Well 8840–3700–8. Owner: McCracken County Board of Education, Lone Oak High School

[Noon daily water level from recorder graph]

Oct. 18, 1951	154.06	Nov. 12, 1951	154.15	Dec. 7, 1951	153.34
19	154.08	13	154.10	8	153.32
20	154.09	14	154.03	9	153.25
21	154.08	15	154.03	10	153.25
22	154.07	16	154.06	11	153.11
23	154.07	17	154.14	12	152.98
24	154.09	18	154.18	13	152.90
25	154.13	19	154.18	14	152.72
26	154.15	20	154.18	15	152.68
27	154.15	21	154.16	16	152.69
28	154.12	22	154.11	17	152.61
29	154.11	23	154.04	18	152.44
30	154.10	24	153.97	19	152.37
31	154.10	25	153.94	20	152.18
Nov. 1	154.10	26	153.90	21	152.02
2	154.11	27	153.84	22	152.04
3	154.13	28	153.82	23	152.04
4	154.13	29	153.77	24	152.05
5	154.17	30	153.74	25	151.95
6	154.16	Dec. 1	153.72	26	151.95
7	154.12	2	153.67	27	152.00
8	154.13	3	153.61	28	151.98
9	154.15	4	153.46	29	151.83
10	154.16	5	153.42	30	151.69
11	154.16	6	153.37	31	151.60

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8840–3700–8—Continued

[Noon daily water level from recorder graph, 1952]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	151.55	151.00	150.81	149.38	150.32	151.42	152.80	153.58	154.12	154.28	154.62	154.97
2	151.38	150.86	150.90	149.37	150.32	151.47	152.83	153.60	153.96	154.28	154.62	154.96
3	151.34	150.57	150.95	149.37	150.34	151.49	152.88	153.61	154.02	154.32	154.64	154.96
4	151.31	150.41	150.96	149.35	150.36	151.51	152.88	153.64	154.09	154.35	154.67	154.39
5	151.35	150.39	151.06	149.23	150.37	151.53	152.90	153.68	154.13	154.32	154.68	154.56
6	151.41	150.34	151.22	149.32	150.38	151.57	152.91	153.72	154.15	154.32	154.68	154.69
7	151.48	150.31	151.28	149.42	150.40	151.60	152.92	153.74	154.17	154.42	154.72	154.73
8	151.44	150.15	151.30	149.53	150.41	151.65	152.95	153.75	154.19	154.42	154.73	154.76
9	151.38	150.10	151.29	149.62	150.43	151.70	152.96	153.75	154.23	154.42	154.72	154.76
10	151.38	149.98	151.16	149.71	150.44	151.81	152.98	153.78	154.23	154.40	154.72	154.71
11	151.41	149.91	151.01	149.82	150.46	151.89	153.01	153.80	154.23	154.40	154.73	154.72
12	151.39	149.86	151.05	149.85	150.53	151.95	153.06	153.56	154.23	154.40	154.75	154.74
13	151.28	149.78	150.96	149.81	150.66	151.97	153.11	153.70	154.22	154.40	154.75	154.77
14	151.16	149.70	150.91	149.85	150.78	152.01	153.12	153.77	154.23	154.40	154.74	154.81
15	151.06	149.70	150.81	149.93	150.88	152.07	153.13	153.80	154.23	154.41	154.74	154.84
16	151.03	149.70	150.70	150.02	-------	152.11	153.15	153.81	154.22	154.44	154.75	154.88
17	150.98	149.70	150.61	150.12	151.03	152.16	153.17	153.85	154.19	154.44	154.77	154.88
18	151.00	149.72	150.41	150.16	151.10	152.23	153.19	153.90	154.15	154.45	154.77	154.88
19	151.04	149.77	150.26	150.21	151.10	152.27	153.21	153.93	154.12	154.47	154.61	154.88
20	151.10	149.82	150.19	150.25	151.13	152.31	153.24	153.96	154.13	154.50	154.64	154.83
21	151.21	149.95	150.18	150.27	151.19	152.34	153.27	153.98	154.16	154.56	154.68	154.83
22	151.19	150.11	150.03	150.28	151.24	152.38	153.30	154.02	154.20	154.59	154.71	154.82
23	151.31	150.19	150.02	150.28	151.28	152.44	153.32	154.05	154.22	154.59	154.76	154.81
24	151.43	150.29	149.97	150.23	151.29	152.49	153.35	154.07	154.23	154.59	154.82	154.83
25	151.41	150.40	149.87	150.22	151.29	152.54	153.38	154.09	154.26	154.53	154.81	154.87
26	151.32	150.57	149.79	150.23	151.30	152.57	153.41	154.11	154.26	154.59	154.75	154.91
27	151.28	150.66	149.71	150.23	151.35	152.63	153.44	154.11	154.26	154.53	154.83	154.92
28	151.23	150.67	149.61	150.24	151.40	152.68	153.46	154.11	154.26	154.57	154.91	154.94
29	151.21	149.70	149.55	150.27	151.41	152.72	153.49	154.12	154.27	154.62	154.94	154.94
30	151.20	-------	149.53	150.29	151.41	152.75	153.52	154.12	154.28	154.63	154.95	154.93
31	151.12	-------	149.46	-------	151.41	-------	153.55	154.12	-------	154.62	-------	154.86

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8840-3700-8—Continued

[Noon daily water level from recorder graph, 1953]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	154.86	154.33	153.94	153.10	153.09	153.01	154.37	155.00	155.51	-------	-------	156.00
2	154.85	154.32	153.77	153.12	153.10	153.07	154.37	155.01	155.54	-------	-------	156.00
3	154.82	154.29	153.35	153.14	153.15	153.13	154.38	155.02	155.54	-------	155.79	155.92
4	154.83	-------	153.42	153.14	153.19	153.17	154.41	155.06	155.54	-------	155.81	155.86
5	154.84	-------	153.56	153.15	153.21	153.23	154.43	155.08	155.57	-------	155.83	155.88
6	154.87	-------	153.61	153.13	-------	153.29	154.44	155.09	155.59	155.78	155.86	155.83
7	154.88	-------	153.64	153.04	-------	153.35	154.48	155.09	155.61	155.80	-------	155.87
8	154.67	-------	153.63	153.05	153.26	153.38	154.51	155.09	155.65	155.82	-------	155.88
9	154.72	154.30	153.59	153.05	153.28	153.44	154.56	155.08	155.67	155.82	-------	155.85
10	154.75	154.33	153.51	153.06	153.31	153.52	154.60	155.09	155.68	155.79	156.01	155.84
11	154.82	154.33	-------	153.09	153.32	153.59	154.62	155.12	155.68	155.77	-------	155.86
12	154.89	154.33	-------	153.09	153.34	153.64	154.63	155.14	155.66	155.78	-------	155.87
13	154.89	154.32	-------	153.14	-------	153.67	154.62	155.17	155.68	155.78	-------	155.87
14	154.84	154.30	-------	153.24	-------	153.69	154.61	155.18	155.68	155.81	-------	155.85
15	154.78	-------	-------	153.24	-------	153.70	154.63	155.18	155.68	155.83	-------	155.85
16	154.67	-------	-------	153.24	-------	153.71	154.68	155.18	155.67	155.83	-------	155.88
17	154.62	-------	-------	153.25	-------	153.73	154.72	155.19	155.67	155.84	155.95	155.98
18	154.58	-------	-------	153.21	-------	153.76	154.74	155.25	155.67	155.85	155.94	156.04
19	154.52	-------	153.12	153.21	153.02	153.80	154.76	155.29	155.67	155.87	155.94	156.04
20	154.51	-------	153.20	153.26	153.01	153.84	154.77	155.32	155.66	155.89	155.89	156.01
21	154.50	154.03	-------	153.32	152.93	153.90	154.78	155.35	155.67	155.89	155.88	155.93
22	154.50	154.13	153.23	153.31	152.88	153.99	154.77	155.37	155.75	155.89	155.86	155.89
23	154.42	154.19	153.09	153.30	-------	154.06	154.80	155.37	155.79	155.89	155.84	155.97
24	154.37	154.19	153.12	153.29	-------	154.09	154.83	155.37	155.79	155.88	155.89	156.04
25	154.37	154.13	153.13	153.29	-------	154.11	154.86	155.38	155.78	155.88	155.79	156.04
26	154.37	154.04	153.17	153.29	-------	154.16	154.88	155.41	155.75	155.87	155.82	156.01
27	154.36	153.97	153.14	153.28	-------	154.20	154.90	155.44	155.71	155.83	155.85	155.99
28	154.36	153.97	153.14	153.26	-------	154.24	154.90	155.45	155.70	155.82	155.95	-------
29	154.35	-------	153.14	153.24	153.02	154.29	154.92	155.45	155.69	155.83	155.99	-------
30	154.34	-------	153.14	153.09	153.00	154.34	154.95	155.45	155.78	-------	156.00	155.92
31	154.34	-------	153.14	-------	152.99	-------	154.99	155.46	-------	-------	-------	155.96

Well 8840-3700-37. Owner: R. N. Newton

Date	Water level	Date	Water level	Date	Water level
July 13, 1951	53.45	Aug. 11, 1953	54.87	Dec. 1, 1953	55.95
May 28, 1953	54.39	Sept. 8	55.12	29	[c] 55.98
June 16	54.25	Oct. 6	55.47		
July 14	54.57	Nov. 3	55.75		

[c] Measurement discontinued.

Well 8840-3700-265. Owner: J. Earl Ham

[Noon daily water level from recorder graph]

Aug. 1, 1952	[a] 81.88	Nov. 26, 1952	81.61	Dec. 15, 1952	81.47
Sept. 24	[a] 81.88	27	81.72	16	81.44
Oct. 7	[a] 81.97	28	81.68	17	81.37
Nov. 5	81.58	29	81.46	18	81.47
11	81.47	30	81.62	19	81.38
12	81.47	Dec. 1	81.32	20	81.35
13	81.39	2	81.40	21	81.46
14	81.29	3	81.42	22	81.21
15	81.42	4	81.30	23	81.50
16	81.50	5	81.41	24	81.61
17	81.42	6	81.36	25	81.60
18	81.37	7	81.36	26	81.52
19	81.37	8	81.29	27	81.51
20	81.39	9	81.24	28	81.49
21	81.46	10	81.47	29	81.28
22	81.40	11	81.39	30	81.25
23	81.63	12	81.55	31	81.46
24	81.48	13	81.48		
25	81.15	14	81.49		

[a] Tape measurement.

TABLE 18.—*Water levels in observation wells in the Paducah area, Kentucky*—Con.

Well 8840-3700-265—Continued

[Noon daily water level from recorder graph, 1953]

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	81.56	81.61	81.33	81.42	81.30	81.40	81.19	-------	81.25	81.42	81.42	81.38
2	81.11	81.38	81.34	81.55	81.60	81.39	81.16	-------	81.24	81.35	81.43	81.32
3	81.46	81.44	81.10	81.46	81.64	81.31	81.33	-------	81.19	81.37	81.38	81.07
4	81.38	81.52	81.56	81.51	81.53	81.26	81.33	81.19	81.32	81.31	81.42	81.33
5	81.55	81.29	81.65	81.43	81.55	81.28	81.30	-------	81.42	81.20	81.48	81.33
6	81.40	81.44	81.73	81.18	81.39	81.33	81.29	-------	81.34	81.34	81.44	81.35
7	81.25	81.51	81.59	81.37	81.37	81.33	81.31	-------	81.41	81.48	81.38	81.45
8	81.38	81.61	81.67	81.28	81.45	81.33	81.34	-------	81.42	81.35	81.40	81.36
9	81.31	81.71	81.53	81.26	81.47	81.45	81.43	-------	81.39	81.25	81.42	81.14
10	-------	81.50	81.48	81.50	81.38	81.43	81.45	-------	81.30	81.22	81.40	81.52
11	81.73	81.19	81.49	81.45	81.43	81.45	81.35	[b] 81.36	81.16	81.21	81.32	81.46
12	81.44	81.39	81.36	81.39	81.38	81.32	81.30	81.35	81.24	81.42	81.44	81.37
13	81.44	81.50	81.43	81.60	81.52	81.25	81.26	81.28	81.38	81.47	81.47	81.20
14	81.43	81.30	81.22	81.60	81.42	81.26	81.29	81.25	81.11	81.44	81.40	81.31
15	81.63	81.44	81.52	81.20	81.46	81.31	81.37	81.26	81.29	81.37	81.24	81.56
16	81.60	81.39	81.57	81.59	81.22	81.29	81.32	81.23	81.27	81.33	81.29	81.75
17	81.35	81.82	81.32	81.35	81.27	81.37	81.27	81.33	81.29	81.38	81.34	81.73
18	81.31	81.57	81.25	81.46	81.30	81.33	81.28	81.36	81.28	81.39	81.36	81.58
19	81.19	81.42	81.49	81.42	81.38	81.32	81.28	81.33	81.22	81.40	81.29	81.37
20	81.28	81.08	81.33	81.49	81.40	81.29	81.26	81.31	81.24	81.40	81.14	81.19
21	81.54	81.80	81.35	81.31	81.38	81.41	81.21	81.34	81.50	81.37	81.43	81.12
22	81.45	81.84	81.21	81.14	81.33	81.40	81.28	81.33	81.58	81.35	81.27	81.57
23	81.07	81.71	81.46	81.25	81.49	81.37	-------	81.29	81.38	81.25	81.24	81.76
24	81.47	81.41	81.42	81.19	81.39	81.28	-------	81.29	81.30	81.29	81.12	81.53
25	81.63	81.27	81.63	81.13	81.36	81.33	-------	81.34	81.24	81.31	81.29	81.27
26	81.38	81.26	81.68	81.28	81.42	81.51	-------	81.33	81.18	81.24	81.45	81.36
27	81.31	81.32	81.50	81.42	81.53	81.33	-------	81.31	81.20	81.22	81.59	81.25
28	81.58	81.49	81.39	81.34	81.46	81.41	81.26	81.26	81.29	81.30	81.64	81.26
29	81.55	-------	81.45	81.15	81.26	81.43	-------	81.23	81.30	81.48	81.35	81.34
30	81.45	-------	81.34	81.16	81.19	81.33	-------	81.32	81.43	81.46	81.38	-------
31	81.44	-------	81.19	-------	81.27	-------	-------	81.33	-------	81.40	-------	-------

[b] Estimated.

Well 8840-3705-226. Owner: Max Hester

Date	Water level	Date	Water level	Date	Water level
Apr. 21, 1953	11.94	Aug. 11, 1953	13.56	Nov. 3, 1953	14.40
June 16	12.13	Sept. 8	14.07	Dec. 1	[c] 14.56
July 14	12.95	Oct. 6	14.17		

[c] Measurement discontinued.

TABLE 19.—*Water levels in observation wells with short or interrupted records in the Paducah area, Kentucky*

[All water levels given in feet below land-surface datum. For description of wells, see table 1. Water levels are tape measurements]

Well 8830-3650-4. Owner: Bob Styres

Date	Water level	Date	Water level
Oct. 30, 1950	37.18	Nov. 7, 1950	[c]37.16

Well 8830-3650-37. Owner: Howard Kaler

Oct. 31, 1950	8.16	Nov. 7, 1950	[c]8.13

Well 8830-3650-90. Owner: Estil Wilkens

Oct. 26, 1950	14.92	Nov. 7, 1950	[c]14.98

Well 8830-3650-99. Owner: Ted Sawyer

Oct. 26, 1950	14.22	Nov. 7, 1950	[c]14.24

Well 8830-3650-110. Owner: William Davidson

Oct. 27, 1950	47.59	Nov. 7, 1950	[c]47.64

Well 8830-3650-111. Owner: Joe Davidson

Oct. 27, 1950	35.55	Nov. 7, 1950	[c]35.63

Well 8830-3650-120. Owner: L. Boaz

Oct. 27, 1950	10.97	Nov. 7, 1950	[c]10.78

Well 8830-3655-26. Owner: Ronnie Copeland

Oct. 31, 1950	33.64	Nov. 7, 1950	[c]33.73

Well 8830-3655-31. Owner: Meddie Copeland

Oct. 31, 1950	20.78	Nov. 6, 1950	[c]20.80

Well 8830-3655-86. Owner: Frank Waliace

Nov. 13, 1950	45.57	Jan. 30, 1951	45.43
22	45.41	Feb. 12	[c]45.23
Dec. 4	45.50		
20	45.55		
Jan. 3, 1951	45.33		

[c] Measurement discontinued.

TABLE 19.—*Water levels in observation wells with short or interrupted records in the Paducah area, Kentucky*—Continued

Well 8830-3655-120. Owner: Elmer Freels

Date	Water level	Date	Water level
Sept. 27, 1950	10. 25	Nov. 7, 1950	[c]11. 29

Well 8830-3655-185. Owner: Bob York

Sept. 26,1950	36. 74	Dec. 4, 1950	11. 73
Oct. 10	44. 68	20	[c]3. 95
23	50. 05		
Nov. 6	54. 79		
21	17. 45		

Well 8830-3655-235. Owner: E. B. McEntosh

Sept. 26, 1950	8. 74	Nov. 7, 1950	[c]8. 80

Well 8830-3700-116. Owner: Mrs. May Goodman

July 25, 1950	6. 71	Oct. 10, 1950	6. 43
31	6. 60	23	6. 96
Aug. 14	7. 08	Nov. 6	[c]7. 15
28	6. 94		
Sept. 11	5. 54		
25	6. 13		

Well 8830-3700-117. Owner: Henry Prince

July 25, 1950	6. 92	Oct. 10, 1950	6. 18
31	6. 57	23	6. 80
Aug. 14	6. 94	Nov. 6	[c]7. 07
28	6. 53		
Sept. 11	4. 11		
25	5. 44		

Well 8830-3700-122. Owner: Forrest E. Stringer

Aug. 24, 1950	6. 74	Oct. 23, 1950	5. 42
28	5. 80	Nov. 6	[c]5. 65
Sept. 11	1. 70		
25	3. 89		
Oct. 10	4. 73		

Well 8830-3700-136. Owner: T. M. Reed

Aug. 14, 1950	7. 95	Oct. 23, 1950	10. 44
28	8. 75	Nov. 6	[c]10. 61
Sept. 11	9. 45		
25	10. 13		
Oct. 10	10. 24		

[c] Measurement discontinued.

TABLE 19.—*Water levels in observation wells with short or interrupted records in the Paducah area, Kentucky*—Continued

Well 8830-3700-138. Owner: A. H. Melott

Date	Water level	Date	Water level
July 28, 1950	13. 62	Oct. 10, 1950	13. 31
Aug. 14	11. 77	23	13. 00
28	13. 66	Nov. 6	[a]13. 44
Sept. 11	7. 60		
25	13. 35		

Well 8830-3700-190. Owner: Harry Thompson

Aug. 7, 1950	4. 27	Oct. 10, 1950	6. 15
28	6. 56	23	6. 63
Sept. 11	5. 73	Nov. 6	[a] 6. 65
25	6. 02		

Well 8830-3700-196. Owner: C. M. Story

Aug. 7, 1950	9. 46	Oct. 10, 1950	9. 28
28	9. 47	23	9. 54
Sept. 11	8. 90	Nov. 6	[a] 9. 75
25	9. 26		

Well 8830-3700-201. Owner: Mrs. Pauline Lynn

Aug. 10, 1950	24. 66	Oct. 10, 1950	25. 09
28	24. 80	23	23. 81
Sept. 11	. 80	Nov. 6	[a] 25. 57
25	24. 75		

Well 8830-3700-267. Owner: F. L. Babb

Sept. 6, 1950	43. 18	Oct. 23, 1950	43. 24
25	43. 12	Nov. 6	[a] 43. 32
Oct. 10	43. 11		

Well 8835-3650-2. Owner: O. W. Barker

Oct. 11, 1950	26. 57	Nov. 7, 1950	[a] 26. 81

Well 8835-3655-29. Owner: Kinon Brookshire

Oct. 18, 1950	42. 00	Nov. 7, 1950	[a] 42. 03

Well 8835-3700-4. Owner: Frank Hovekamp

Aug. 9, 1950	8. 73	Oct. 10, 1950	8. 20
28	9. 07	23	9. 36
Sept. 11	8. 99	Nov. 6	[a] 9. 96
25	9. 25		

[a] Measurement discontinued.

TABLE 19.—*Water levels in observation wells with short or interrupted records in the Paducah area, Kentucky*—Continued

Well 8835-3700-7. Owner: R. C. Champion

Date	Water level	Date	Water level
Aug. 9, 1950	12. 35	Oct. 10, 1950	9. 83
28	10. 45	23	9. 90
Sept. 11	9. 50	Nov. 6	° 10. 40
25	10. 04		

Well 8835-3700-16. Owner: Richard Shoulta

Aug. 9, 1950	13. 84	Oct. 10, 1950	12. 11
28	12. 36	23	12. 14
Sept. 11	12. 04	Nov. 6	° 12. 27
25	12. 19		

Well 8835-3700-20. Owner: F. M. Weatherington

Aug. 11, 1950	15. 41	Oct. 10, 1950	14. 95
28	14. 94	23	15. 19
Sept. 11	14. 41	Nov. 6	° 15. 30
25	14. 81		

Well 8835-3700-76. Owner: Miss Molly Torian

July 19, 1950	8. 30	Sept. 25, 1950	7. 21
31	7. 45	Oct. 10	7. 43
Aug. 14	7. 21	23	7. 53
28	7. 37	Nov. 6	° 7. 65
Sept. 11	5. 36		

Well 8835-3700-80. Owner: R. A. Streit

July 24, 1950	7. 55	Sept. 25, 1950	6. 64
31	7. 61	Oct. 10	7. 46
Aug. 14	7. 06	23	7. 31
28	7. 45	Nov. 6	° 7. 43
Sept. 11	2. 56		

Well 8835-3700-87. Owner: J. D. Childers

Aug. 12, 1950	10. 91	Oct. 10, 1950	10. 06
28	10. 59	23	10. 43
Sept. 11	8. 98	Nov. 6	° 10. 36
25	9. 72		

Well 8835-3700-95. Owner: H. L. Travis

July 26, 1950	7. 69	Sept. 25, 1950	7. 09
31	7. 10	Oct. 10	7. 21
Aug. 14	8. 38	23	7. 79
28	7. 94	Nov. 6	° 7. 45
Sept. 11	6. 39		

° Measurement discontinued.

TABLE 19.—*Water levels in observation wells with short or interrupted records in the Paducah area, Kentucky*—Continued

Well 8835-3700-97. Owner: C. E. Steel

Date	Water level	Date	Water level
July 24, 1950	7. 83	Sept. 25, 1950	8. 25
31	7. 85	Oct. 10	8. 23
Aug. 14	8. 08	23	8. 49
28	8. 28	Nov. 6	[c] 8. 60
Sept. 11	8. 07		

Well 8835-3700-120. Owner: O. C. Owings

Sept. 12, 1950	23. 50	Oct. 23, 1950	24. 22
25	23. 54	Nov. 6	[c] 24. 59
Oct. 10	23. 73		

Well 8835-3700-127. Owner: Chris Burger

Sept. 12, 1950	30. 45	Oct. 23, 1950	31. 37
25	30. 42	Nov. 6	[c] 31. 73
Oct. 10	30. 66		

Well 8835-3700-136. Owner: H. F. Moody

July 7, 1950	18. 00	Sept. 11, 1950	16. 98
17	17. 78	25	17. 27
31	17. 57	Oct. 10	17. 09
Aug. 14	17. 77	23	17. 39
28	17. 49	Nov. 6	[c] 17. 65

Well 8835-3705-1. Owner: John Water

July 10, 1950	21. 62	Aug. 28, 1950	22. 86
17	22. 94	Sept. 11	20. 72
31	22. 89	25	21. 50
Aug. 14	23. 15	Oct. 10	[c] 22. 27

Well 8835-3705-8. Owner: Metzger Packing Co.

July 17, 1950	13. 37	Sept. 25, 1950	11. 34
31	12. 36	Oct. 10	12. 48
Aug. 14	8. 81	23	11. 98
28	12. 22	Nov. 6	[c] 12. 75
Sept. 11	8. 70		

[c] Measurement discontinued.

Logs of wells and test holes in the Paducah area, Kentucky

Well 8830-3655-177

Altitude of land surface: 327.1 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, sandy	7.0	7.0	
Clay, white	18.5	25.5	
Sand, fine, and blue clay	5.0	30.5	
Sand, light-brown, and gravel	10.0	40.5	
Clay, white	2.6	43.1	
Sand, light-brown, and gravel	5.6	48.7	
Sand, white, fine	1.8	50.5	
Sand, light-brown, and gravel	5.8	56.3	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, black	12.8	69.1	

Well 8830-3655-178

Altitude of land surface: 326.1 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, sandy	7.5	7.5	
Clay, white	18.8	26.3	
Sand, fine, and blue clay	11.2	37.5	
Sand, light-brown, and gravel	3.5	41.0	Complete record not given here. Total depth reported, 51 ft.

Well 8830-3655-179

Altitude of land surface: 335.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, white	31.5	31.5	
Clay, blue	8.1	39.6	
Sand, white, fine	7.6	47.2	
Sand, light-brown, and gravel	3.6	50.8	

Well 8830-3655-247

Altitude of land surface: 338.9 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, white	7.6	7.6	Water at 6 ft.
Clay, yellow	12.4	20.0	
Clay, white	12.5	32.5	
Clay, blue	2.5	35.0	
Clay, blue, and sand	3.4	38.4	
Sand, white, fine	11.6	50.0	
Clay, blue	10.0	60.0	
Sand and gravel	2.6	62.6	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3655-248

Altitude of land surface: 338.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, white	7.5	7.5	
Clay, yellow	13.8	21.3	
Clay, white	10.3	31.6	
Clay, blue	5.9	37.5	
Sand, white, fine	11.9	49.4	
Clay, blue	12.0	61.4	
Sand, white, fine	1.2	62.6	
Sand and gravel	.9	63.5	

Well 8830-3655-250

Altitude of land surface: 405 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

Quaternary system:			
Pleistocene series:			
Loess	10	10	
Loess, and sand and small chert gravel	5	15	
Tertiary system:			
Pliocene(?) series:			
Gravel, yellow-stained; small chert fragments and some sand and loess.	5	20	
Gravel, yellow; small chert fragments, and large amount of chert and quartz sand and small amount of loess.	5	25	
Gravel, brown to buff; fine to medium, angular, chert; rounded quartz sand, and loess.	10	35	
Gravel, brown, medium; angular, chert; rounded quartz sand and yellow silt.	5	40	
Silt, dark-brown; chert fragments	5	45	
Gravel, buff; angular chert fragments and small amount of sand and loess.	5	50	
Sand, yellow; yellow silt	10	60	
Sand, yellow; silt, chert fragments	5	65	
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, dark-gray, micaceous; small amount of angular chert pebbles and some sand.	5	70	
Clay, dark-gray, micaceous	5	75	
Clay, dark-gray, micaceous; fine to medium, angular quartz sand and some carbonaceous matter.	5	80	
Clay, dark-gray, silty, thinly laminated, micaceous.	5	85	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, brownish-gray, silty, micaceous; small amount of clay.	15	100	
Clay, brown, silty, micaceous	10	110	
Sand, brown, silty, clayey	10	120	
Clay, dark-gray, silty, thinly laminated, micaceous; some sand.	5	125	
Sand, brown, silty, clayey, micaceous	45	170	
Sand, brown, silty, clayey, micaceous; small amounts of carbonaceous matter.	15	185	
Sand, brown, silty, clayey, micaceous	15	200	
Sand, buff to light-gray, silty, clayey, micaceous; carbonaceous matter.	10	210	
Sand, buff to light-gray, fine to medium, silty, micaceous.	5	215	
Sand, brown, fine, very silty, clayey, micaceous.	10	225	
Silt, buff, clayey, micaceous	5	230	
Sand, light-gray, fine to medium, angular to rounded; few flakes of mica.	15	245	
Sand, white, medium, angular to rounded, micaceous.	5	250	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3655-254

Altitude of land surface: 335.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Top soil, sandy	13.5	13.5	
Sand and clay	4.0	17.5	
Sand, white	1.0	18.5	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Shale, blue, hard	46.5	65.0	

Well 8830-3700-94

Altitude of land surface: 340 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium: Top soil and clay	27	27	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay:			
Shale	53	80	
Sand with mud	8	88	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Shale, blue, sandy	96	184	
Clay, black, little sand	30	214	
Water sand	12	226	

Well 8830-3700-144

Altitude of land surface: 397.50 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess: Top soil and clay	12	12	
Tertiary system:			
Pliocene(?) series: Gravel	41	53	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, blue, sandy	22	75	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay, light-gray, sandy	10	85	
Clay, yellow, sandy	10	95	
Shale, blue, sandy	69	164	
Sand, yellow, silty	12	176	
Shale, blue, sandy	69	245	
Sand, silty	21	266	Complete record not given here. Total depth, 277 ft.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-288

Altitude of land surface: 342 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Gravel, coarse; sand and clay	4.0	4.0	
Sand, yellow, fine, compact, with yellow clay.	10.0	14.0	
Sand, white, fine	7.0	21.0	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, blue	40.0	61.0	
Clay, blue, and fine sand	5.0	66.0	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, yellow	2.0	68.0	
Clay, white, with fine sand	13.0	81.0	
Sand, white, fine	19.0	100.0	

Well 8830-3700-289

Altitude of land surface: 310.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, blue and yellow	26.0	26.0	
Clay, blue, and fine sand	4.0	30.0	
Sand, white	1.0	31.0	
Clay, blue, and fine sand	9.0	40.0	
Sand, yellow, and white clay	2.0	42.0	
Clay, white	4.0	46.0	
Clay, sandy, white	11.0	57.0	
Clay, blue	15.0	72.0	
Sand, fine, white, with bits of yellow clay	3.5	75.5	
Sand, fine, sharp, white	21.5	97.0	Contains artesian water.
Sand, with increasing amounts of white clay	13.0	110.0	

Well 8830-3700-290

Altitude of land surface: 266.0 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene series:			
Alluvium:			
Gravel	1.0	1.0	
Clay, white, sandy	8.0	9.0	
Clay, white	9.0	18.0	
Clay, blue, compact	57.5	75.5	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation: Sand, fine, compact; blue clay	24.5	100.0	Contains artesian water.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-291

Altitude of land surface: 276.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Gravel	5.3	5.3	
Sand, fine, white, and white clay	18.7	24.0	
Gravel	1.0	25.0	
Clay, hard, blue	12.5	37.5	
Sand, fine, white, and blue clay	14.5	52.0	Contains artesian water.
Sand, sharp, loose, gray	12.0	64.0	Do.
Clay, hard, blue, carrying small amount of very fine sand in small seams.	36.0	100.0	

Well 8830-3700-292

Altitude of land surface: 316.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	19.0	19.0	
Clay, sandy, yellow	3.0	22.0	
Mud, gray	13.0	35.0	
Sand, coarse, and fine gravel	23.0	58.0	
Sand, fine, compact, gray	22.0	80.0	
Clay, black, and fine sand	4.0	84.0	
Clay, black, and small amount of fine gray sand.	12.5	96.5	
Clay, gummy, black	3.5	100.0	

Well 8830-3700-293

Altitude of land surface: 321.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system.			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	26.0	26.0	
Clay, sandy, blue	6.0	32.0	
Sand, fine, gray	2.0	34.0	
Gravel, fine, grading to coarse sand	16.0	50.0	

Well 8830-3700-294

Altitude of land surface: 321.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	23.0	23.0	
Clay, sandy, blue	4.5	27.5	
Sand, fine, gray	1.5	29.0	
Gravel, fine, and coarse sand	21.0	50.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-295

Altitude of land surface: 318.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	27.5	27.5	
Sand, fine, gray	2.5	30.0	
Gravel, fine	14.0	44.0	
Sand, fine, compact, gray	6.0	50.0	

Well 8830-3700-296

Altitude of land surface: 321.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	25.0	25.0	
Sand, yellow	2.0	27.0	
Sand, yellow, and clay	3.0	30.0	
Sand, gray, and blue clay	2.0	32.0	
Gravel, fine	7.5	39.5	
Sand, coarse, gray	1.5	41.0	
Gravel, fine	1.5	42.5	
Sand, fine, compact, gray	7.5	50.0	

Well 8830-3700-297

Altitude of land surface: 323.8 feet above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	22.5	22.5	
Sand, yellow	5.0	27.5	
Sand, fine, gray	4.5	32.0	
Clay, hard, blue	6.0	38.0	
Sand, fine, compact, gray	12.0	50.0	

Well 8830-3700-298

Altitude of land surface: 322.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	21.0	21.0	
Sand, fine, yellow	5.0	26.0	
Sand, red	5.0	31.0	
Gravel and blue clay	.5	31.5	
Clay, blue	15.5	47.0	
Clay, blue, and sand	3.0	50.0	

Well 8830-3700-299

Altitude of land surface: 321.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	19.5	19.5	
Sand, loose, yellow	7.5	27.0	
Sand, gray	6.0	33.0	
Clay, blue	17.0	50.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-300

Altitude of land surface: 319.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	18.0	18.0	
Clay, white, and sand	3.0	21.0	
Sand, gray	5.0	26.0	
Sand, fine, compact, gray	24.0	50.0	

Well 8830-3700-301

Altitude of land surface: 321.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	11.0	11.0	
Sand, yellow	3.0	14.0	
Sand, reddish	2.0	16.0	
Sand, fine, yellow	14.0	30.0	
Sand, fine, gray	20.0	50.0	

Well 8830-3700-312

Altitude of land surface: 395 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	10	10	
Tertiary system:			
Pliocene(?) series:			
Sand, red	10	20	
Sand, white, and gravel	14	34	
Sand, black, and gravel	4	38	Iron coated but not cemented.
Clay and fine red sand	8	46	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, black	19	65	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, yellow, medium, micaceous, changing to clay.	4	69	
Sand, white, fine, micaceous	1	70	

Well 8830-3700-320

Altitude of land surface: 315.7 feet above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and clay	23	23	
Sand and silt	8	31	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-321

Altitude of land surface: 344.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Debris	4.5	4.5	
Clay and silt	7.5	12.0	
Silt and sand	7.0	19.0	

Well 8830-3700-322

Altitude of land surface: 320.1 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay	21.0	21.0	
Clay and silt	3.0	24.0	
Silt	9.0	33.0	

Well 8830-3700-323

Altitude of land surface: 345.7 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, loam, and silt	6.1	6.1	
Clay and silt	2.0	8.1	

Well 8830-3700-324

Altitude of land surface: 326.9 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and loam	5.0	5.0	
Clay and silt	19.0	24.0	
Snad and silt	1.0	25.0	

Well 8830-3700-325

Altitude of land surface: 330.0 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and silt	12.0	12.0	
Silty mud	10.0	22.0	

Well 8830-3700-326

Altitude of land surface: 342.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay	6.0	6.0	
Silt	5.0	11.0	

Logs of well sand test holes in the Paducah area, Kentucky—Continued

Well 8830-3700-327

Altitude of land surface: 341.2 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay	6.0	6.0	
Silt	6.0	12.0	

Well 8830-3700-328

Altitude of land surface: 339.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay	7.0	7.0	
Silt	6.0	13.0	

Well 8835-3655-34

Altitude of land surface: 435 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Top soil and clay	6	6	
Tertiary system:			
Pliocene(?) series: Gravel, red	6	12	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay, white	30	42	
Gravel, white	10	52	
Sand, white	37	89	

Well 8835-3655-133

Altitude of land surface: 425 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

No record	20	20	
Tertiary system:			
Pliocene series:			
Gravel, brown, rounded (some broken), mostly chert, some quartzite; brown silt, cherty sand, and few mica flakes.	25	45	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, buff, fine to medium, subangular to subrounded, quartz; fine brown silt and few chert grains.	5	50	
Sand, buff, medium, subangular to subrounded, quartz; many clear grains.	5	55	
Sand, very pale buff, medium, angular to well-rounded quartz; rounded grains frosted; many clear grains.	5	60	
Sand, same as above; large amount of silt	5	65	
Sand, brown, medium to fairly coarse, angular to rounded; very few flakes of white mica.	5	70	
Sand, light-gray, mostly fine, subrounded to rounded; grains well coated with light-gray clay; few iron-stained grains.	5	75	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-70

Altitude of land surface: 341 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by H. L. Pree, Jr.).

Formation	Thickness (feet)	Depth (feet)	Remarks
No record	2	2	
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam:			
Loess, light-tan, small amount of sand	4	6	
Loess, light-tan; small amounts of sand and mica.	11	17	
Sand, light-tan, fine; some mica and small amount of clay.	5	22	
Tertiary system:			
Pliocene(?) series:			
Gravel, red to brown, coarse, subangular to angular, chert; small amount of sand.	4	26	
Sand, buff, fine; gray clay	2	28	
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, gray, slightly sandy, micaceous	2	30	
Clay, gray, sandy, micaceous	5	35	
Clay, gray, slightly sandy, micaceous	5	40	
Clay, gray, micaceous	45	85	
Clay, dark-gray, micaceous	20	105	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, gray, fine, quartz, micaceous, glauconitic; small amount of carbonaceous material.	5	110	Tooth (shark?) at 107 ft.
Sand, gray, fine to coarse, quartz, clayey, micaceous.	5	115	
Sand, dark-gray, fine to coarse, quartz, micaceous; small amount of glauconite.	5	120	
Clay, dark-gray, sandy, micaceous	15	135	
Clay, dark-gray, micaceous	30	165	Pyrite at 150 ft.
Clay, dark-gray, slightly sandy, micaceous	10	175	
Clay, dark-gray, sandy, micaceous	5	180	
Sand, light-gray, fine, angular, quartz; small amounts of mica and clay.	5	185	
No record	2	187	
Sand, dark-gray, fine, angular, quartz; small amounts of mica and clay.	18	205	
Clay, dark-gray, sandy, micaceous; small amount marcasite.	5	210	
Clay, dark-gray, sandy, micaceous	20	230	
Clay, light-gray, micaceous	10	240	
Sand, light-gray, fine, angular to subangular quartz, micaceons; small amounts of clay and carbonaceous material.	10	250	
Sand, dark-gray, fine, angular to subangular, quartz; small amounts of mica and carbonaceous material and scattered pieces of pyrite.	10	260	
Clay, dark-gray, micaceous; some carbonaceous material.	5	265	
Sand, dark-gray, very fine, angular to subangular, quartz, clayey, micaceous.	15	280	
Sand, dark-gray, very fine, angular to subangular, quartz, micaceous; small amount of clay.	5	285	
Sand, gray, very fine, angular to subangular, quartz, micaceous; scattered large pieces of pyrite.	10	295	
Sand, gray, very fine, angular to subangular, quartz, micaceous.	10	305	
Sand, light-gray, very fine, angular to subangular, quartz, micaceous; carbonaceous material.	10	315	
Sand, light-brown, very fine, angular to subangular, quartz, micaceous; carbonaceous material.	5	320	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-70—Continued

Formation	Thickness (feet)	Depth (feet)	Remarks
Mississippian system:			
Undifferentiated:			
Gravel, white, iron-stained, angular, chert; some quartz sand.	5	325	
Gravel, gray, coarse to fine, angular, chert; some sand.	5	330	
Gravel, gray to white, angular to subangular, chert.	8	338	

Well 8835-3700-152

Altitude of land surface: 340 ft above mean sea level.
Type of record: Sample log (authority: R. H. Loughridge).

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Loam, brown, micaceous	40	40	
Gravel, rounded, chert and quartz	20	60	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, black; sand	90	150	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay and sand, micaceous, interlaminated	114	264	
Chert, quartz, and pyrite debris	71	335	
Mississippian system:			
Chester group, undifferentiated:			
Limestone, shaly, white, fossiliferous	90	425	Complete record not given here. Total depth reported, 1,250 ft.

Well 8835-3700-163

Altitude of land surface: 435 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series: Loess and loam	20	20	
Tertiary system:			
Pliocene(?) series: Gravel and clay	20	40	
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, blue	40	80	
Sand and gravel	10	90	
Clay, blue	90	180	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay, blue, sandy	10	190	
Sand, white	10	200	

Well 8835-3700-164

Altitude of land surface: 465 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series: Topsoil	10	10	
Tertiary system:			
Pliocene(?) series: Gravel	6	16	
Eocene series:			
Claiborne group:			
Holly Springs sand: Sand, red	64	80	Water at 80 ft.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-167

Altitude of land surface: 450 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	1.0	1.0	
Tertiary system:			
Pliocene(?) series:			
Soil and gravel	1.5	2.5	
Gravel, coarse	6.0	8.5	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, red, medium	8.5	17.0	Static water level, 16.92 ft below land surface.
Sand, light-brown, clayey, medium	1.0	18.0	
Sand, red, medium, loose	5.0	23.0	

Well 8835-3700-168

Altitude of land surface: 439 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	9.5	9.5	
Tertiary system:			
Pliocene(?) series: Sand, reddish-brown	1.5	11.0	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, brown, fine	9.0	20.0	Water at 14.0 ft.
Sand, brown, fine, clayey	3.0	23.0	
Sand, light-brown, fine	6.0	29.0	

Well 8835-3700-169

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	7.0	7.0	
Tertiary system:			
Pliocene(?) series:			
Gravel, brown, clayey	5.5	12.5	
Clay, light-gray	1.5	14.0	
Clay, gray, hard with red streaks	.5	14.5	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, red, fine	4.0	18.5	
Sand, tan, fine	.5	19.0	
Sand, brown, fine	14.0	33.0	Sand moist at 33.0 ft.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-170

Altitude of land surface: 444 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	10.5	10.5	
Tertiary system:			
Pliocene(?) series: Clay, brown, gravelly	3.0	13.5	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay, light-gray	9.5	23.0	Thin, cemented fine tan sand at 23.0 ft; water.
Sand	4.0	27.0	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, dark-gray	4.0	31.0	

Well 8835-3700-171

Altitude of land surface: 460 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	7.7	7.7	
Tertiary system:			
Pliocene(?) series:			
Clay, gravelly	3.2	10.9	
Gravel, sand, and clay	4.8	15.7	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, gray, fine	4.4	20.1	
Sand, fine, cemented	.3	20.4	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, dark-gray	21.6	42.0	

Well 8835-3700-172

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	10.0	10.0	
Tertiary system:			
Pliocene(?) series: Sand, red, clayey	2.0	12.0	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, red, fine	12.0	24.0	
Sand, red, coarse	2.3	26.3	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-243

Altitude of land surface: 370 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	7	7	
Tertiary system:			
Pliocene(?) series: Gravel	12	12	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, dark	101	120	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay and sand in 1-ft layers	30	150	
Sand, gray	11	161	

Well 8835-3700-297

Altitude of land surface: 365 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Clay	10	10	
Tertiary system:			
Pliocene(?) series:			
Gravel, small	10	20	
Gravel, small to eggsized	10	30	Static water level, 25 ft below land surface.
Paleocene series:			
Midway group:			
Porters Creek clay:			
Shale, slightly sandy	10	40	
Shale	10	50	

Well 8835-3700-300

Altitude of land surface: 440 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Soil	8	8	
Tertiary system:			
Pliocene(?) series: Gravel, red	8	16	
Eocene series:			
Claiborne group:			
Holly Springs sand: Sand, red	22	38	

Well 8835-3700-304

Altitude of land surface: 400 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Clay, yellow	15	15	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Clay	24	39	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-305

Altitude of land surface: 364 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	35	35	
Tertiary system:			
Pliocene(?) series: Gravel	5	40	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay	45	85	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay and sand lenses	15	100	
Clay	128	228	
Sand	12	240	

Well 8835-3700-306

Altitude of land surface: 465 ft above mean sea level.
Type of record: Driller's log of water well.

No record	18	18	
Tertiary system:			
Eocene series:			
Claiborne group:			
Holly Springs sand: Clay, dark	90	108	Black water sand at 108 ft.
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, black	192	300	Distinct break at 300 ft between Porters Creek clay and Ripley formation.
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay, micaceous, silty	90	390	
Sand	17	407	

Well 8835-3700-307

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	9.4	9.4	
Tertiary system:			
Pliocene(?) series:			
Gravel and sand	12	21.4	
Gravel, sandy	2.4	23.8	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay	3.0	26.8	
Sand	3.5	30.3	Water at 30 ft.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-308

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	9.6	9.6	
Tertiary system:			
Pliocene(?) series:			
Gravel and sand	4.0	13.6	
Sand	2.6	16.2	
Gravel, clayey	2.3	18.5	
Sand, clayey	1.0	19.5	
Gravel, sandy	15.3	34.8	
Eocene series:			
Claiborne group:			
Holly Springs sand: Sand	.2	35.0	Hole damp at bottom.

Well 8835-3700-309

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	7	7	
Tertiary system:			
Pliocene(?) series:			
Gravel and sand	1	8	Damp.
Gravel and clay	6	14	Tight.
Gravel and sand	10.8	24.8	Dry
Sand rock	.2	25.0	

Well 8835-3700-310

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam:			
Topsoil and clay	6	6	
Clay	2.5	8.5	
Tertiary system:			
Pliocene(?) series:			
Sand, clayey	3.5	12.0	
Gravel and sand	8	20.0	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand	4	24.0	
Sandstone	.5	24.5	

Well 8835-3700-311

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	8	8	
Tertiary system:			
Pliocene(?) series:			
Sand and gravel	12	20	Dry.
Sand and gravel	6.5	26.5	Wet.
Eocene series:			
Claiborne group:			
Holly Springs sand: Sand	7.5	34.0	Water.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-312

Altitude of land surface: 420 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	25	25	
Tertiary system:			
Pliocene(?) series: Gravel	3	28	
Eocene series:			
Claiborne group:			
Holly Springs sand: Clay, white	7	35	
Paleocene series:			
Midway group:			
Porters Creek clay: Clay	161	196	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, silty	252	448	Water at 371 ft. Static water level, 100 ft below land surface.
Sand, brown, silty, coarse	8.7	456.7	
Mississippian system, undifferentiated		456.7	

Well 8835-3700-316

Altitude of land surface: 335.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand, silt, and clay	4.0	4.0	
Sand, gravel, and clay	9.5	13.5	
Sand, silt, and clay	9.5	23.0	

Well 8835-3700-317

Altitude of land surface: 343.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Cinders and clay	2.0	2.0	
Clay	12.0	14.0	
Silt	5.0	19.0	
Silt and clay	8.0	27.0	

Well 8835-3700-318

Altitude of land surface: 343.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Debris and boulders	14.0	14.0	
Silt and clay	22.0	36.0	
Silt	16.0	52.0	
Sand and silt	3.0	55.0	
Silt	8.0	63.0	
Silt, sand, and gravel	4.0	67.0	
Sand and gravel	4.0	71.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3700-319

Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and loam	4	4	
Clay	10	14	
Clay and silt	4	18	

Well 8835-3700-320

Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium: Clay	24	24	

Well 8835-3700-321

Altitude of land surface: 324.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and loam	3.0	3.0	
Clay and silt	6.0	9.0	
Silt and decayed vegetation	6.0	15.0	
Clay, gravel, and sand	3.0	18.0	
Clay and gravel	2.0	20.0	
Silt	4.0	24.0	
Clay and silt	3.0	27.0	

Well 8835-3700-322

Altitude of land surface: 337.9 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay	8.0	8.0	
Clay and silt	8.0	16.0	

Well 8835-3700-323

Altitude of land surface: 341.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and loam	1.0	1.0	
Silt, sand, and gravel	6.0	7.0	
Gravel	2.0	9.0	

Well 8835-3705-10

Altitude of land surface: 282.9 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	14	14	
Sand	11.5	25.5	
Clay, blue	12.5	38.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-11

Altitude of land surface: 276.7 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	24	24	
Clay, blue	10	34	
Sand, white	4	38	

Well 8835-3705-12

Altitude of land surface: 281.2 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and small gravel	10	10	
Mud	2	12	
Sand and gravel	7.5	19.5	
Clay, blue	3	22.5	
Clay, yellow	13.5	36.0	

Well 8835-3705-13

Altitude of land surface: 277.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	21	21	
Clay, blue	16	37	

Well 8835-3705-14

Altitude of land surface: 274.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium: Sand and large gravel	17.5	17.5	

Well 8835-3705-15

Altitude of land surface: 278.8 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	20	20	
Sand, white	10	30	

Well 8835-3705-16

Altitude of land surface: 288.0 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt	2	2	
Clay, blue	21	23	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-17

Altitude of land surface: 277.2 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	5	5	
Sand	15	20	
Clay, yellow	10	30	
Clay, blue	5	35	
Sand	8	43	
Clay, blue	8	51	
Clay, tough, blue	10	61	
Sand, fine	7	68	

Well 8835-3705-18

Altitude of land surface: 275.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand, gray	15	15	
Gravel and sand	13	28	
Clay, blue and sand	12	40	
Sand, packed	16	56	
Clay, blue, tough	4	60	
Sand, white, fine	6	66	
Sandstone	2	68	

Well 8835-3705-19

Altitude of land surface: 287.0 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand, brown	3	3	
Sand, gray, and round gravel	14	17	
Sand, dark-gray, and fine gravel	2	19	
Gravel, round, 1½ in	8	27	
Clay, yellow	1	28	
Mud, gray	7	35	
Sand, fine, and interlaminated mud	14	49	
Quicksand and fine white sand	10	59	
Silt and quicksand	7	66	
Sand, white, fine	9	75	

Well 8835-3705-20

Altitude of land surface: 317.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand	20	20	
Sand, blue, and mud	10	30	
Sand, fine	2	32	
Gravel, fine, and gray and brown coarse sand.	33	65	
Mud, blue	16	81	
Clay, pale-yellow, sandy	4	85	
Mud, blue	17	102	
Sand, fine, packed	4	106	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-25

Altitude of land surface: 340 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	10	10	
Tertiary system:			
Pliocene(?) series:			
Clay, red, sandy	8	18	
Gravel, clayey, brown	4	22	Water at 22 ft.
Gravel, brown, coarse	4	26	

Well 8835-3705-103

Altitude of land surface: 370.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay, yellow	18.0	18.0	
Sand and gravel	20.0	38.0	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, gray	3.0	41.0	

Well 8835-3705-104

Altitude of land surface: 357.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Topsoil	3.0	3.0	
Gravel, fine, hard	13.0	16.0	
Sand and fine gravel	7.0	23.0	
Sand, yellow	5.0	28.0	
Gravel, fine	3.0	31.0	
Gravel, white	2.0	33.0	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, blue, very hard	13.3	46.3	Complete record not given here. Total depth, 56 ft.

Well 8835-3705-105

Altitude of land surface: 340.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and clay	5.0	5.0	
Sand and gravel	2.8	7.8	
Silt and sand	5.2	13.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-106

Altitude of land surface: 331.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and clay	4.0	4.0	
Silt	6.8	10.8	
Silt and sand	4.2	15.0	
Gravel	1.5	16.5	

Well 8835-3705-107

Altitude of land surface: 312.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and clay	7.0	7.0	
Sand and gravel	7.0	14.0	

Well 8835-3705-108

Altitude of land surface: 336.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and silt	3.5	3.5	
Sand and gravel	13.5	17.0	

Well 8835-3705-109

Altitude of land surface: 329.7 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt	13.0	13.0	
Sand	3.0	16.0	
Sand and gravel	4.0	20.0	
Sand and silt	5.0	25.0	
Sand	1.0	26.0	

Well 8835-3705-110

Altitude of land surface: 321.3 feet above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and silt	3.0	3.0	
Silt and gravel	3.0	6.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-111

Altitude of land surface: 334.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and silt	8.0	8.0	
Silt	6.0	14.0	
Sand and gravel	3.0	17.0	

Well 8835-3705-112

Altitude of land surface: 335.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Silt and sand	1.5	1.5	
Silt	4.0	5.5	
Sand and gravel	1.5	7.0	
Sand	1.5	8.5	
Sand and gravel	9.3	17.8	

Well 8835-3705-113

Altitude of land surface: 320.1 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and silt	17.0	17.0	
Silt and sand	6.0	23.0	

Well 8835-3705-114

Altitude of land surface: 319.1 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and silt	4.0	4.0	
Silt	9.0	13.0	

Well 8835-3705-115

Altitude of land surface: 322.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and silt	8.5	8.5	
Sand, silt, and gravel	11.5	20.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8835-3705-116

Altitude of land surface: 335.7 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand	3.0	3.0	
Debris	3.0	6.0	
Clay	2.0	8.0	
Gravel	10.0	18.0	

Well 8835-3705-117

Altitude of land surface: 326.5 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand	3.0	3.0	
Sand and silt	3.0	6.0	
Sand	5.0	11.0	
Debris	3.5	14.5	
Sand and silt	11.0	25.5	

Well 8835-3705-118

Altitude of land surface: 334.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Debris, sand, and gravel	23.0	23.0	
Silt, sand, and clay	9.0	32.0	

Well 8835-3705-119

Altitude of land surface: 337.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Debris and gravel	2.0	2.0	
Debris	11.0	13.0	
Sand, silt, and clay	11.0	24.0	

Well 8835-3705-120

Altitude of land surface: 335.2 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Debris	13.5	13.5	
Sand and gravel	1.5	15.0	
Debris	7.0	22.0	
Sand and silt	3.0	25.0	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3700-3

Altitude of land surface: 465 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	10	10	
Tertiary system:			
Pliocene(?) series: Gravel	8	18	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay	4	22	
Sand, coarse	16	38	
Clay, pink to white	68	106	
Rock or hard pan	.5	106.5	
Water sand	10	116.5	

Well 8840-3700-7

Altitude of land surface: 370 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

Quaternary system:			
Pleistocene and Recent series:			
Loess, light-brown to buff; angular quartz sand and several large angular chert fragments.	15	15	
Loess, light- to dark-brown; quartz sand and angular chert fragments.	5	20	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay (reworked):			
Clay, medium-gray and yellow stained in part; silt and angular quartz sand and chert fragments.	15	35	
Porters Creek clay:			
Clay, medium-gray; few mica flakes	40	75	
Clay, medium-gray; few mica flakes and some silt.	25	100	
Clay, dark-gray, silty, micaceous, glauconitic, sparingly fossiliferous.	5	105	
Clay, gray to brown, silty, micaceous; grains of glauconite and some pyrite.	25	130	
Clay, brown to brownish-gray, silty, sandy, micaceous; varying amounts of carbonaceous matter.	60	190	
Silt, brownish-gray, clayey, micaceous; fine sand.	30	220	
Sand, brownish-gray, clayey, silty, micaceous.	20	240	
Clay, light-brownish-gray, silty; little sand and mica.	20	260	
Silt, brownish-gray, clayey, sandy, micaceous; small amount of glauconite, some carbonaceous matter, and pyrite.	20	280	
Sand, brownish-gray, clayey, silty, micaceous; some pyrite and carbonaceous matter.	15	295	
Silt, light-gray to brown, clayey, sandy, micaceous; some pyrite and carbonaceous matter.	25	320	
Sand, light-gray, silty, micaceous; some clay and carbonaceous matter.	10	330	
Silt, light-brown to dark-gray, clayey, slightly sandy, micaceous; some carbonaceous matter.	45	375	
Sand, white to gray, fine to medium, quartz, micaceous; angular fragments of white and gray fossiliferous chert and few pieces of pyrite.	10	385	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3700-54

Altitude of land surface: 440 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam:			
Loess, light-brown; scattered sand grains	5	5	
Tertiary system:			
Pliocene(?) series:			
Gravel, brown, fine, subangular chert; silt, rounded grains of quartz sand, and few flakes of mica.	15	20	
Gravel, brown, broken, chert; medium-brown sand and silt.	5	25	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, buff, fine to medium, subrounded to rounded; some silt.	15	40	
Sand, buff, medium, subrounded to rounded; free of silt and clay.	5	45	
Sand, very pale yellow, medium to fairly coarse, angular to well-rounded.	5	50	Complete record not given here. Total depth reported, 71 ft.

Well 8840-3700-262

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	9	9	
Tertiary system:			
Pliocene(?) series: Gravel	18	27	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, red	38	65	
Sand, white, coarse to medium	20	85	Hit water at 70 ft. Complete record not given here. Total depth reported, 95 ft.

Well 8840-3700-265

Altitude of land surface: 475 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	12	12	
Tertiary system:			
Pliocene(?) series: Sand and gravel, red	15	27	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay, yellow and pink in streaks	9	36	
Sand, white, fine	52	88	Static water level, 85 ft below land surface.

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3700-275

Altitude of land surface: 460 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	6	6	
Tertiary system:			
Pliocene(?) series: Gravel, brown	3	9	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay, yellow	2	11	
Clay, black	74	85	
Sand	2	87	3 in. of rock on top of sand.

Well 8840-3700-303

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	5	5	
Tertiary system:			
Pliocene(?) series:			
Gravel, clayey	3	8	
Gravel	16	24	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, red	5	29	
Sand, clayey	32	61	
Sand, white	2	63	Water at 63 ft.

Well 8840-3700-304

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	12	12	
Tertiary system:			
Pliocene(?) series: Gravel	12	24	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay	1	25	
Sand, yellow	9	34	
Sand, red, and coarse gravel; 1-ft layer of sandstone.	4	38	

Well 8840-3700-305

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	8	8	
Tertiary system:			
Pliocene(?) series: Gravel and sand	16	24	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay	3	27	
Clay, sandy	3	30	
Sand, red	2	32	

Logs of wells and tests holes in the Paducah area, Kentucky—Continued

Well 8840-3700-306

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	20	20	
Tertiary system:			
Pliocene(?) series: Gravel	5	25	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, yellow	9	34	
Sand, red	4	38	
Sand, white	23	61	Water at 61 ft.

Well 8840-3700-315

Altitude of land surface: 405 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	20	20	
Tertiary system:			
Pliocene(?) series: Gravel, fine	10	30	
Paleocene series:			
Midway group:			
Porters Creek clay:			
Shale with streak of sand at bottom	30	60	
Shale	10	70	
Shale, sandy	10	80	
Shale	100	180	
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, white	10	190	Water at 180 ft.
Sand	10	200	
Sand and clay	10	210	
Sand	10	220	
Clay, red	10	230	

Well 8840-3700-318

Altitude of land surface: 470 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	3	3	
Tertiary system:			
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Clay, red	25	28	
Clay, black	10	38	
Peat	3	41	
Clay	12	53	
Clay, black	12	65	
Clay, red, with some white clay	35	100	
Sand	5	105	

Logs of wells and tests holes in the Paducah area, Kentucky—Continued

Well 8840-3700-319

Altitude of land surface: 460 ft above mean sea level.
Type of record: Driller's log of water well.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil and clay	10	10	
Tertiary system:			
Pliocene(?) series: Sand and gravel, cemented	8	18	
Eocene series:			
Claiborne group:			
Holly Springs sand: Sand, yellow and white	19	37	
Paleocene series:			
Midway group:			
Porters Creek clay: Soapstone	14	51	No water.

Well 8840-3700-320

Altitude of land surface: 430 ft above mean sea level.
Type of record: Driller's log of water well.

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam: Topsoil	14	14	
Tertiary system:			
Pliocene(?) series: Gravel	12	26	
Eocene series:			
Claiborne group:			
Holly Springs sand:			
Sand, white, fine	5	31	
Sand, brown, medium	5	36	

Well 8840-3700-325

Altitude of land surface: 390 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

No record	25	25	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, light-gray, yellow-stained; some mica and few grains of sand.	10	35	
Clay, light-gray, yellow-stained; some mica and some coaly matter.	10	45	
Clay, light-gray, yellow-stained; few fragments of broken chert (probably a contaminant).	5	5	
No record	30	80	
Clay, light-gray; scattered flakes of mica	5	85	
No record	5	90	
Clay, light-gray; small amount of mica, few grains of quartz sand, and few chert fragments.	20	110	
Clay, light-gray; small amount of mica and few grains of quartz sand.	5	115	
No record	5	120	
Clay, light-gray, iron-stained; small amount of mica and few grains of quartz sand.	10	130	
Clay, grayish-brown, silty, sandy, carbonaceous, glauconitic.	5	135	
Clay, brown, silty, sandy, glauconitic, sparingly micaceous.	10	145	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3700-325—Continued

Formation	Thickness (feet)	Depth (feet)	Remarks
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Clay, light-brown, very silty and sandy, sparingly micaceous; few grains of glauconite.	5	150	
Clay, very silty; very fine micaceous sand and small amount of carbonaceous matter.	10	160	
Clay, very silty, micaceous; few grains of quartz and quartzite sand and small amount of carbonaceous matter.	10	170	
Sand, brown, fine, clayey, micaceous, slightly carbonaceous.	5	175	
Sand, brown, fine, very silty, micaceous; and some clay.	10	185	
Sand, light-gray to white, fine to medium, predominantly angular, quartz, micaceous; few grains of glauconite.	5	190	Water.

Well 8840-3700-327

Altitude of land surface: 348.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Topsoil	1.5	1.5	
Clay	6.5	8.0	
Sand and gravel	12.6	20.6	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay: Clay, blue	24.0	44.6	

Well 8840-3705-227

Altitude of land surface: 310.7 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Mud	3	3	
Clay	4	7	
Sand	3	10	
Clay	8	18	
Clay and gravel	3	21	
Gravel	5	26	
Clay and gravel	7	33	
Clay	10	43	
Clay, blue	6	49	
Clay and gravel	4	53	
Clay and sand	7	60	
Clay	11	71	
Sand	4	75	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3705-228

Altitude of land surface: 292.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Mud, soft	18	18	
Gravel	3	21	
Clay and gravel	7	28	
Gravel	3	31	
Clay	7	38	
Clay and sand	4	42	
Clay	12	54	
Clay and gravel	12	66	
Clay and sand	23	89	
Clay and gravel	3	92	
Clay, sand, and gravel	8	100	

Well 8840-3705-229

Altitude of land surface: 279.0 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Mud	3	3	
Sand and gravel	19	22	
Clay and sand	2	24	
Sand and gravel	21	45	
Clay and sand	5	50	
Sand and gravel	5	55	
Clay, blue, hard	7	62	
Clay, blue, and sand	12	74	
Sand, white, fine	8	82	

Well 8840-3705-230

Altitude of land surface: 268.4 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand and gravel	6	6	
Sand	13	19	
Clay and sand	26	45	
Sand and gravel	14	59	
Clay, blue, and sand	10	69	
Sand	5	74	

Well 8840-3705-231

Altitude of land surface: 258 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Clay and sand pockets	34	34	
Sand, fine	26	60	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3705-232

Altitude of land surface: 262.3 ft above mean sea level.
Type of record: Driller's log of test hole.

Formation	Thickness (feet)	Depth (feet)	Remarks
Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand	21	21	
Clay and sand	4	25	
Clay, blue	3	28	
Clay and sand	4	32	
Sand, fine	21	53	

Well 8840-3705-233

Altitude of land surface: 303.6 ft above mean sea level.
Type of record: Driller's log of test hole.

Quaternary system:			
Pleistocene and Recent series:			
Alluvium:			
Sand	7	7	
Gravel	4	11	
Clay	9	20	
Sand	14	34	
Sand and clay	4	38	
Clay	38	76	
Clay and sand	7	83	

Well 8840-3705-234

Altitude of land surface: 330 ft above mean sea level.
Type of record: Sample log of water well (collected by driller; examined by L. M. MacCary).

Quaternary system:			
Pleistocene and Recent series:			
Loess and loam:			
Loess and topsoil	5	5	
Loess	15	20	
Loess and a small amount of sand	5	25	
Tertiary system:			
Paleocene series:			
Midway group:			
Porters Creek clay:			
Clay, light-gray, mica-bearing; few grains of rounded chert.	5	30	
Clay, light-gray, mica-bearing; few quartz grains.	5	35	
Clay, light-gray; small amount of mica	5	40	
Clay, light-gray, mica-bearing; small amount of glauconite.	5	45	
Clay, light-gray, micaceous	40	85	
Clay, light-gray, micaceous, glauconitic	5	90	
Clay, light brownish-gray, silty, sandy, glauconitic.	5	95	
Clay, dark-gray, micaceous	5	100	
Clay, dark-gray, micaceous; some glauconite.	5	105	

Logs of wells and test holes in the Paducah area, Kentucky—Continued

Well 8840-3705-234—Continued

Formation	Thickness (feet)	Depth (feet)	Remarks
Cretaceous system:			
Upper Cretaceous series:			
Ripley formation:			
Sand, brown, very fine, silty, clayey, glauconitic.	5	110	
Sand, brown, fine, silty, clayey	5	115	
Sand, brown, silty, dark-gray micaceous clay	5	120	
Sand, brown, fine to medium, angular, quartz; dark-gray micaceous clay and some carbonaceous matter.	5	125	
Sand, brown; dark-gray micaceous, glauconitic clay.	5	130	
Sand, brown, silty, clayey, micaceous	10	140	
Clay, brown, silty, sandy, micaceous	10	150	
Sand, light-brown, fine to medium; dark-gray clay and large fragments of clay-iron stone.	5	155	
Sand, brown, silty, clayey, micaceous	5	160	
Sand, light-brown; laminated gray clay	5	165	
Sand, brown, silty, clayey, micaceous	15	180	
Clay, brown, silty, sandy, micaceous	45	225	
Clay, brown, laminated; thin seams of fine gray sand.	10	235	
Clay, brown, silty, sandy, micaceous	10	245	
Sand, brown, silty, clayey; micaceous and carbonaceous matter.	5	250	
Sand, brown, silty, micaceous	5	255	
Clay, brown, silty; mica and some sand	35	290	
Clay, brown, silty; small amount of pyrite	5	295	
Sand, brown, fine, silty, clayey; some mica	5	300	
Clay, brown, silty, sandy, micaceous	15	315	
Sand, brown, fine, silty, very clayey, micaceous.	5	320	
Sand, brown, fine to medium, silty, clayey; micaceous and carbonaceous matter.	10	330	
Sand, gray, fine, angular, quartz; carbonaceous matter, pyrite grains, and mica flakes.	10	340	
Sand, gray, fine, angular, quartz; carbonaceous matter, pyrite grains, mica flakes, and pebble-sized fragments of gray chert.	5	345	
Record missing	6	351	
Mississippian system, undifferentiated	2	353	

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