STATE GEOLOGICAL SURVEY OF KANSAS

BULLETIN 87

OIL AND GAS DEVELOPMENTS IN KANSAS DURING 1949

By

W. A. VER WIEBE, J. M. JEWETT, E. K. NIXON,
R. K. SMITH, and A. L. HORNBAKER

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ABSTRACT

Kansas oil production in 1949 totaled 100,164,092 barrels, which was 7 percent less than in 1948.

In value the 1949 output of crude decreased to $257,214,716 from $279,928,450 in the preceding year.

Natural gas production in Kansas reached an all-time high of 294 billion cubic feet (14.65 psia); the Hugoton field produced 245 billion cubic feet or 80 percent of this amount.

In 1948, 3,835 wells of record were drilled in the State in connection with petroleum production. These were located in 72 counties. Of the recorded completions, 1,703 were oil wells, 425 were gas wells, 1,260 were dry holes, and 447 service wells (399 drilled in connection with water-flooding, and 48 salt water disposal wells). Of the dry holes, 245 were wildcats. Considering numerous shallow wells drilled in eastern counties which did not get into the records, probably 5,700 wells were drilled in the State during the year. The number of gas wells drilled in 1949 was 15 percent greater than in 1948.

As in 1949, Barton, with a production of 18.5 million barrels, was the largest oil producer among the counties. Russell County ranked second with a production of 13.1 million barrels. Again, the Trapp pool of Barton and Russell Counties was the top-ranking pool of the State with a production of 8.6 million barrels of oil in 1949. The Kraft-Prusa, Bemis-Shutts, and Hall-Gurney pools were second, third, and fourth, respectively.

The discovery of the Davis Ranch pool in Wabaunsee County east of the "granite ridge" is considered the outstanding development within the industry during 1949.

Secondary oil recovery is increasing rapidly in Kansas. At the end of 1949 there were 150 such operations including 4,537 producing wells.

INTRODUCTION

There was a substantial increase (about 22 percent) in gas production during 1949 and a modest increase in exploratory activity as gauged by the number of new wells drilled, but oil production decreased slightly.

A new peak was attained in 1949 for the number of new oil and gas pool discoveries. Ninety-six new pools—92 oil and 4 gas—were recorded for the year.

The dollar value of oil, gas, and products dropped off slightly although there was little change in prices of the several items.

The year's outstanding development of the Kansas industry was the discovery of the Davis Ranch pool by The Carter Oil Company in Wabaunsee County, east of "the granite ridge." Located in a broad syncline east of the Nemaha uplift (commonly called "the granite ridge") the area had not been regarded with favor by oil men until April 1949, when The Carter Oil Company brought in their pool opener with an initial production of 2,580 barrels per day in the Viola. That started a furor of investigation and drilling in Wabaunsee and neighboring counties resulting in the drilling of probably 50 new wells. Some of those drilled in the Davis Ranch pool were reported as capable of producing about 15,000 barrels per day initially. The Davis Ranch pool, at first regarded as probably being a stratigraphic trap with broad implications for lateral extension of analogous geological conditions, is now believed to be a reservoir caused by structural effects—folding, faulting, or both. The discovery is described in some detail in the chapter on Wabaunsee County.

Petroleum activity in eastern Kansas, except the Wabaunsee County play, consisted rather largely of operations incidental to secondary oil recovery, the trend of which is distinctly on the increase. A special chapter on secondary oil recovery is included in this bulletin.

No oil developments in western Kansas during the year compared in interest with the Wabaunsee County discovery. Two important extensions of the Hugoton gas field were made during 1949. One in Morton County in the southwest corner of the Kansas part of the field was created by the drilling of two gas wells in T. 34 S., R. 41 W. rated respectively at 8 and 9 million cubic feet daily. This moved the field boundary westward about 6 or 7 miles and probably added about 40,000 acres to the field area. On the east edge of the field, near the Oklahoma line, the field boundary was extended several miles to the southeast until now all of Stevens County lies within the Hugoton field area. Approximately 50,000 acres was added to the field area by this extension.

Figure 1 is an index map of the State showing in a very general way the areas within which there is production of oil or gas or both. Obviously the boundaries are not precise. Only a small fraction of the oil and gas territory is actually in production or includ-

ed within pools because there are broad areas of barren country between the pools. However, the map is useful in showing county relations and also to convey to the reader both the location of the oil country and also an idea of how large a percentage of the State may be considered "oil and gas territory."

It has seemed desirable as an important part of this bulletin to include a table of condensed petroleum data which at a glance will show two things: (1) the trend of the Kansas industry in its various phases and (2) a comparison between individual trends in Kansas and corresponding trends in the United States as a whole. The question of whether or not Kansas is holding its own in respect to the petroleum industry can be answered readily by comparing figures in the two righthand columns in Table 1.

Production and value.—The production of crude oil in Kansas during 1949 declined nearly 8 million barrels, corresponding to 7.3 per cent (refer to item 1 Table 1), and the value of crude oil produced was down nearly $20 million. However, the production of natural gas in the State increased from 240 and 295 billion cubic feet (calculated to 14.65 psia), or 22.7 percent over the 1948 figure.

There has been some mistreatment of statistics on the value of Kansas natural gas production in recent years. The U. S. Bureau of Mines has been supplying the State Geological Survey of Kansas with figures which, from the turn of the century up to 1947, have reflected the value of natural gas at the consumer's meter. However, in 1947 the U.S. Bureau of Mines decided to value natural gas at the wellhead everywhere in the United States. By applying the figure of 8 cents per thousand cubic feet, the State Geological Survey obtained a total value of $21,058,080 for 1949 production. This is an increase of 64 percent over the value of gas produced in 1948. The use of 8 cents per thousand cubic feet of gas is based on the ruling of the State Corporation Commission, which took effect March 1, 1949. The ruling applies only to gas produced in the Hugoton field in southwestern Kansas, but it is doubtful if any considerable quantity of gas produced elsewhere in the State has a lesser value at the wellhead than the 8 cents. The Kansas Corporation Commission ruling on the minimum price at the wellhead in the Hugoton field was upheld in the District Court of Finney County and will be ruled on by the Kansas Supreme Court during the summer of 1950. The fact that the

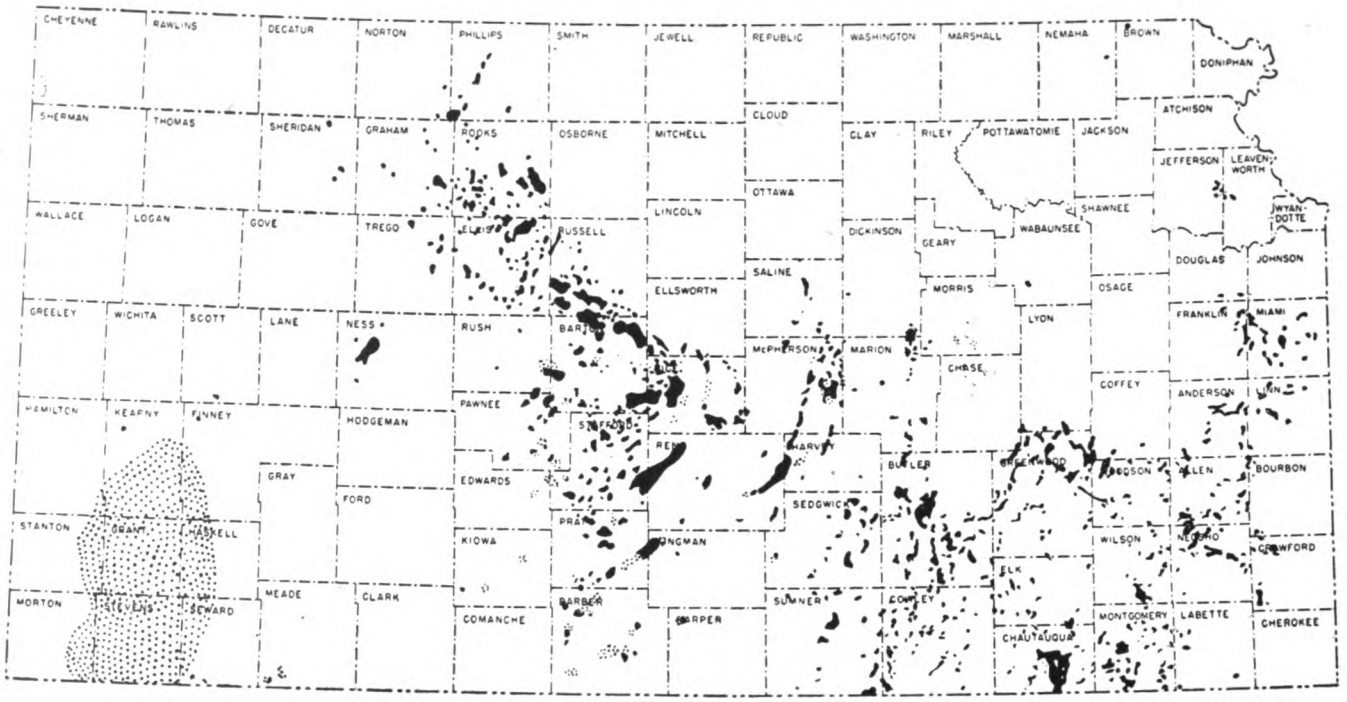

FIG. 1.—Index map of Kansas showing oil and gas producing areas.

TABLE 1.—*Petroleum data table showing percentage changes for Kansas and for the U. S., 1948-1949*

Kansas figures	1948	1949	Kansas percentage change	United States percentage change
1. Crude oil production (barrels)	108,080,654	100,164,092[1]	-7.3	-8.7[2]
2. Value of crude oil produced	$279,928,450	$257,421,716[1]	-7.3	
3. Kansas crude production as percentage of total U.S.	5.4	5.4	0.0	
4. Average price of Kansas crude during year	$2.59	$2.57	0.0	-1.2[3]
5. Rank of Kansas among oil producing states of U.S.	5th	5th	0.0	
6. Proven reserves of liquid hydrocarbons (at year end), barrels	776,739,000	844,795,000[4]	+8.8	+5.8[4]
7. Ratio of proven liquid hydrocarbon reserves to current annual prod'ct	7.2:1	8.4:1	+11.0	(13.8:1) +1.7[5]
8. Oil producing area of "western Kansas" counties (acres)	463,920	490,220	+5.7	
9. Natural gas production (M cu.ft.)	240,195,558	294,683,000[1]	+22.7	+12[3]
10. Value of natural gas produced	$12,840,000	$23,574,640[6]	+83.6	
11. Natural gasoline and liquefied petroleum gases production (gals.)	101,645,000	113,806,854[1]	+12.0	+7.1[6]
12. Value of natural gasoline and LPG	$ 9,466,275	$6,714,600[7]	-29.1	-16.6[7]
13. Proven reserves of natural gas (millions of cubic feet)	14,407,832	14,492,832[8]	+0.6	+1.7[8]
14. Ratio of proven natural gas reserves to current annual production	60.1:1	49.2:1	-18.1	(29:1) 0.0[4]
15. Gas producing area in "western Kansas counties" (acres)	1,965,150	2,059,788	+4.8	
16. New oil and gas pools discovered	72	96	+33.3	
17. Well completions in "western Kansas" counties:				
Oil	1,235	1,271	+2.9	-3.8[3]
Gas	349	421	+20.6	+0.6[3]
Dry	910	925	+1.5	+10.6[3]
Salt water disposal	34	34	0.0	-3.3[3]
Total new wells	2,528	2,651	+4.9	-2.5[3]
Rank wildcats plus discovery wells (included in above total)	265	252	-4.9	+9.5[9]
Total footage drilled	10,634,000	10,715,000[10]	+0.8	+0.7[3]
18. Secondary oil recovery projects active	166	150[11]		

[1] Kansas Corporation Commission figures.
[2] "Crude Production Off 468,000 Bbls. Daily from 1948 High" by John C. Casper, Oil and Gas Journal, vol. 48, no. 38, pp. 188-189.
[3] "The Changing Panorama" by Warren L. Baker, World Oil, vol. 130, no. 3, pp. 25-27.
[4] Proved Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas, A.P.I. and A.G.A., vol. 4, pp. 1-20.
[5] The 1949 gas production is valued at 8 cents per M cu. ft., the figure set as minimum wellhead value by the State Corporation Commission.
[6] "Light-Hydrocarbon Production Sets Another All-Time Record" by John C. Casper, Oil and Gas Journal, vol. 48, no. 38, p. 202-203.
[7] Value per gallon of natural gasoline and LPG as 5.9 cents taken from "Natural Gasoline Output Rises 50 Percent in Five Years" World Oil, vol. 130, no. 3, pp. 132-133. Production figures taken from State Corporation Commission.
[8] We have used net change in gas reserves shown in "Proven Reserves of Both Gas and Liquid Show Good Gain" by Charles J. Deegan, Oil and Gas Journal, vol. 48, no. 38, pp. 190-192, adding that change to former total used in Bulletin 78.
[9] Figure calculated from table referred to in footnote 3.
[10] "New All-Time Record Set in Footage Drilled During 1949" Oil and Gas Journal, vol. 48, no. 38, pp. 176-179.
[11] Only secondary recovery projects east of the 6th Principal Meridan (which passes through Wichita) are included. This division is arbitrary and excludes McPherson and other counties to the west.

TABLE 2.—*Largest oil producing counties in Kansas during 1949*

Rank	County	Producing acreage	Total production, barrels
1	Barton	85,490	18,500,807
2	Russell	74,230	13,125,372
3	Ellis	38,150	10,556,821
4	Rice	60,020	8,868,608
5	Butler	85,668	6,258,017

Oklahoma Supreme Court has twice affirmed the Oklahoma Corporation Commission's order fixing the price of gas in Oklahoma's part of the Hugoton field gives the Kansas order considerable support.

The decline of 7.3 percent in the production and value of Kansas crude oil corresponds to a decline of 8.7 percent for the United States as a whole. Exact figures for U. S. production of natural gas are very difficult to obtain, but on the basis of reasonable estimates an increased production of 12 percent for the entire United States during 1949 is noted. This figure may be compared with a corresponding increase of 22.7 percent for Kansas gas production during 1949.

The production of natural gasoline and LPG in Kansas during 1949 was up about 12 million gallons or 12 percent against a corresponding increase of only 7.1 percent for the entire country. Value of the Kansas production was down nearly 30 percent (29.1 percent) as against a corresponding decline of 16.6 percent for the United States. These figures on value are based on United States averages for natural gasoline and LPG which were 7.6 cents per gallon for 1948 and 5.9 cents per gallon for 1949 (World Oil, Feb. 15, 1950, pp. 132-133).

Again Barton County was the largest oil producer in the State. Table 2 shows that the five largest producing counties did not change in order. Although the first four declined in production,

TABLE 3.—*Largest oil producing pools in Kansas during 1949*

Rank	Pool	Age years	County	Total production, barrels
1	Trapp	14	Russell-Barton	8,567,308
2	Kraft-Prusa	13	Barton-Ellsworth	5,888,527
3	Bemis-Shutts	15	Ellis	4,550,355
4	Hall-Gurney	19	Russell	3,393,143
5	Silica	19	Barton-Rice	3,314,929

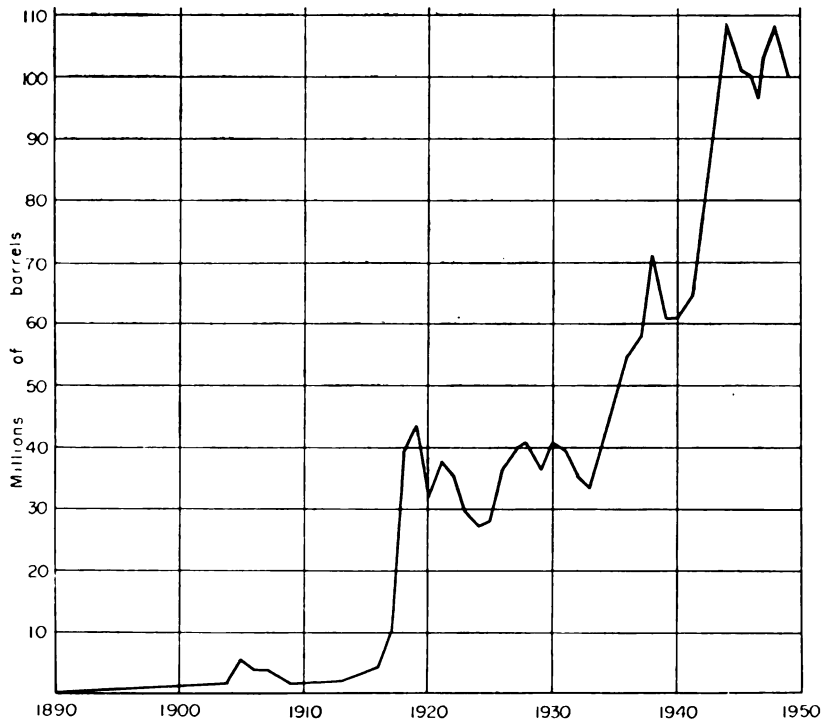

FIG. 2.—Annual oil production in Kansas from 1890 to 1949.

Butler County increased its output substantially. This increase is understood to be referable to secondary oil recovery operations.

Table 3 shows the three largest producing pools during 1949 in the same order as in 1948, namely the Trapp, the Kraft-Prusa, and the Bemis-Shutts. Each of these three, however, diminished considerably in production. The Hall-Gurney pool in Russell County, with almost no decline in production, passed the Silica and Burnett pools and now occupies fourth place.

A summary of oil produced, imported, used, and exported from the State is given in Table 4. Annual oil production in Kansas from 1890 to 1949 is shown graphically in Figure 2.

In regard to figures on the production of natural gas in Kansas, as used in this bulletin, it should be noted that in the data table (Table 44) and in the abstract the figures have been calculated to a pressure base of 14.65 pounds per square inch absolute to correspond with analogous figures published by the American Petro-

TABLE 4.—*Summary of oil produced, imported, used, and exported in 1949*
(From the Conservation Division, Kansas Corporation Commission)

	Barrels of oil
Produced	100,164,092
Imported	13,687,500
Total	113,851,592
Exported	55,452,500
Refined and used in Kansas	58,399,092

leum Institute, the American Gas Association, and the U. S. Bureau of Mines. This is a rather common pressure base on which natural gas is sold to the consumer. However, the Kansas Corporation Commission, dealing largely with the production of gas at the wellhead, uses a pressure base of 16.4 pounds per square inch absolute. Figures on gas production in Kansas are supplied to the State Geological Survey by the Conservation Division of the Kansas Corporation Commission and on a basis of 16.4 pounds per square inch absolute. In the general production table (Table 44), figures on gas production of the many pools are based on 16.4 pounds per square inch absolute.

Largely in order to save space, the county tables which show both current and cumulative oil and gas production, the producing areas, names of pools alphabetically arranged within the counties, and producing zones of the various pools, all have been combined into one general table (Table 44). All counties in the State that have oil or gas production are included in this table. Details of the Hugoton gas field are given in Table 44 at "H" following Hodgeman County.

The production of oil and gas together with the corresponding productive areas are totaled for each county so that comparisons can be made easily. Owing to the fact that the gravity of oil varies rather widely and from pool to pool, it is not practical at this time to assign valuations for the production from the respective counties.

The Hugoton gas field, which indeed is a major item in the Kansas petroleum industry, occupies all or parts of nine counties in southwestern Kansas and produces three-quarters of the natural gas output of the State. Unfortunately it is impossible at the present time to segregate the production of gas within the Hugoton field according to the nine counties which contribute.

Where oil pools extend across county boundaries every effort has been made to prorate accurately the respective productions on the basis of the output of the leases themselves. The figures shown, however, may be subject to modest errors in either direction.

Area of production.—The producing area of Kansas oil and gas pools or the producing oil and gas area (the two overlap in some cases) has been calculated and shown as accurately as reasonably possible. It should be especially noted, however, that the producing areas as shown by the maps and in the figures are those that would be arrived at if an oil production man rather than a geologist were drawing the field limits. Pool boundaries have been drawn but a short distance outside of the outermost producing wells. Where dry holes show the boundaries, the limits have been drawn between dry holes and the producing wells. Undoubtedly the drawing areas of the reservoirs in many cases extend considerable distances beyond the limits as indicated. However, for practical purposes the limits have been drawn and calculated on the basis of lines representing the pool boundaries, outside of which one would assume from inspection of the map that a test would result in a dry hole.

In the case of east Kansas counties, it has seemed desirable in the present bulletin to omit the boundaries of the old fields as they were drawn many years ago, since they contain very large areas of ground that is not producing at the present time. Only areas that were producing oil or gas or both during 1949 are shown on the map and assigned acre areas in the table. It is the custom of the State Geological Survey of Kansas to issue, about every 5 years, a bulletin on the oil developments in eastern Kansas. Bulletin 77 by John Mark Jewett, published in 1949, is the latest. In such bulletins the limits and significance of the boundaries of the old fields, most of the areas of which are now unproductive, are shown.

New pools.—During 1949, 92 new oil pools and 4 new gas pools were discovered in Kansas. One old oil pool was revived. Barton County had 14 new pool discoveries. Ellis, Russell, and Stafford Counties followed with 10 new pools each.

New pool discoveries in 1949 reached the highest number of record in any single year, the increase over 1948 being 33 per-

cent. One of the new oil pools was abandoned later in the year. New 1949 pool discoveries are listed in Table 5.

Abandoned pools.—It has been the custom of the Survey in recent years to omit from the county maps the outlines of abandoned pools. The plan is continued in the present bulletin. The Survey is preparing a map showing all oil and gas pools of record that have been abandoned up to this time.

Wells drilled during 1949.—County writeups show that 3,835 new wells were drilled in the State during 1949. It is certain that numerous shallow wells in several eastern Kansas counties did not get into the records and are not included in this figure. Of the tests reported 1,703 were oil wells, 425 were gas wells, 1,260 were dry and abandoned holes, 48 were salt water disposal wells, and 399 were service wells drilled in connection with water-flood activities. New pool discoveries accounted for 96 of the oil and gas wells; 245 of the dry holes were wildcat wells. It is probable that a total of approximately 5,700 new wells were drilled in the State in connection with the petroleum industry during 1949. The total number of new wells drilled in 1949 probably was slightly greater than for 1948.

As in 1948 Barton County led all others in the State in total recorded number of new wells drilled (395) and in number of dry holes (142). Russell County with 315 new wells was second, and Rooks County with 301 was third.

Test wells drilled within 2 miles of the outside boundaries of producing pools are called "extension wildcats" and are not shown on county maps in this bulletin. Test wells resulting in dry holes drilled outside this 2-mile zone are classed as "wildcat wells" and are shown by a symbol on the county maps of western Kansas counties. As pool boundaries are rarely exact, the classi-

TABLE 5.—*Oil and gas pools discovered in Kansas during 1949*

County, pool, and location of discovery well	Discovery well	Producing zone	Production depth, feet	Month of discovery	Initial production per day, bbls.
Barber County					
Rhodes 15-33-11W	Barbara Oil Co. No. 1 Page Estate	Mississippian	4,551-4,565	August	146
Barton County					
Axman 19-17-14W	Ben F. Brack Oil Co., Inc No. 1 Koch	Arbuckle	3,400-3,411	Sept.	36
Bryant Southeast 26-20-12W	W. H. Black No. 1 Galliart	Arbuckle	3,369-3,376	April	510

Buckbee 14-20-12W	Robert L. Williams No. 1 Buckbee	Arbuckle	3,352-3,360	Dec.	50
Cheyenne View 12-19-12W	Aladdin Petr. Corp. & Crowe Drlg. Co., Inc. No. 1 Kultgen	Arbuckle	3,390-3,407	Oct.	120
Cheyenne View Southwest 14-19-12W	Aladdin Petr. Corp. & Crowe Drlg. Co., Inc. No. 1 Schartz	K.C.-Lans.	3,141-3,155	Nov.	98
Fransen 6-20-12W	Mouser-Drilling Co. No. 1 Fransen	K.C.-Lans.	3,196-3,206	Jan.	Now dry
Hammer North 23-19-12W	Aladdin Petroleum Corp. No. 1 Brodie	Arbuckle	3,344-3,362	Feb.	511
McCauley 34-17-13W	Bay Petroleum Corp. No. 1 McCauley	K.C.-Lans.	3,276-3,280	Sept.	121
Meadowside 24-18-11W	The ElDorado Refining Co. No. 1 "B" Stumps	Arbuckle	3,284-3,299	July	3,000 (max.)
Merten Southeast 12-19-15W	B. & R. Drilling, Inc. No. 1 Kuhlman	Reagan	3,567-3,568	March	121
Rolling Green East 30-20-12W	Bay Petroleum Corp. No 1 Krone	Arbuckle	3,491-3,531	June	30
Rowland 32-17-13W	The Harwood Oil Co. & Stickle Drlg. Co. No. 1 Rowland	Arbuckle	3,323-3,347	Oct.	186
Sunflower 8-17-12W	Franco Central Oil Co. No. 1 Klug	Arbuckle	3,376-3,379	Dec.	132
Sunny Valley 7-20-12W	Bay Petroleum Corp. No. 1 Schartz	K.C.-Lans.	3,230-3,234	Jan.	302
Butler County					
Butwick 7-26-3E	J. P. Gaty No. 1 Demoss	Mississippian	2,860-2,866	April	3,000 (max.)
Butwick Northeast 7-26-3E	Penguin Petroleum, Inc. No 1 Holder	Mississippian	2,804-2,840	April	50
Hazlett North 30-23-5E	Rex & Morris Drlg. Co. No. 1 Ammeter	Mississippian	2,462-2,472	May	35
Long 15-26-7E	Dilworth S. Hager No. 1 Reiserer	Mississippian	2,770-2,887	August	25
Parsley 3-26-3E	Rex & Morris Drlg.Co. et al. No. 1 Parsley	Mississippian	2,695-2,706	Jan.	45
Rombold 4-26-3E	K. T. Wiedemann No. 1 Rombold	Mississippian	2,764-2,771	Sept.	30
Whitewater 32-25-4E	Rex & Morris Drlg. Co. & E. H. Adair Oil Co. No 1 McCullough	Viola	2,645-2,656	April	50
Cowley County					
Mansur 25-31-6E	G. T. Lackey No. 1 Mansur	"Layton" & K.C.	2,170-2,489	Sept.	1,180M cu.ft. gas
New Salem 21-31-5E	Earl F. Wakefield & Bridgeport Oil Co., Inc. No. 1 "B" Roberts	"Layton"	2,295-2,309	June	1,500M cu.ft. gas
Rahn Northeast 27-33-6E	Woods Drilling Co. No. 1 Fry	"Bartlesville"	2,902-2,934	May	120
Stayton 32-32-4E	K. T. Wiedemann No. 1 Stayton	"Bartlesville"	3,122-3,129	June	12
Ellis County					
Antonino Townsite 2-15-19W	Peel-Hardman No. 1 Haas	Arbuckle	3,697-3,703	Nov.	182
Catharine Townsite 9-13-17W	The Texas Company No. 1 Karlin	Arbuckle	3,585-3,603	Dec.	144
Chrisler 22-11-16W	J. M. Huber Corp. & Crowe Drlg. Co., Inc. No. 1 Chrisler	K.C.-Lans.	3,100-3,112	July	54
Christina 22-12-16W	Petroleum, Inc. No. 1 Froelich	K.C.-Lans.	3,272-3,284	Dec.	195
Dreiling 21-14-16W	Armer Drilling Co., Inc. No. 1 Dreiling	Arbuckle	3,367-3,383	Aug.	173
Emmeram Northeast 27-12-16W	E. H. Adair Oil Co. No. 1 Froelich	Arbuckle	3,541-3,543	Sept.	203

TABLE 5.—*Oil and gas pools discovered in Kansas during 1949, continued*

County, pool, and location of discovery well	Discovery well	Producing zone	Production depth, feet	Month of discovery	Initial production per day, bbls.
Meistrell 3-11-18W	The El Dorado Refg. Co. et al. No. 1 Meistrell	Arbuckle	3,532-3,536	March	190
Reed 5-13-17W	W. L. Hartman & J. B. Hinkle No. 1 Reed	K.C.-Lans.	3,424-3,436	Aug.	47
Warren 12-11-20W	The Derby Oil Co. & N. Appleman Co. No. 1 "A" Warren	K.C.-Lans.	3,458-3,465	Oct.	390
Wheatland 18-15-17W	Alpine Oil & Royalty Co., Inc. No. 1 Leiker	Arbuckle	3,571-3,585	Oct.	152
Ellsworth County					
Palacky 31-16-10W	J. D. Ferrell Drlg. Co., Inc. No. 1 Rous	Arbuckle	3,390-3,394	May	48
Graham County					
Morel East 13-9-21W	The Derby Oil Co. No. 1 Balthazor	Arbuckle	3,729-3,733		3,000 (max.)
Morel West 18-9-21W	Peel-Hardman No. 1 "B" Sutor	Arbuckle	3,824-3,840	Dec.	3,000 (max.)
Morlan 23-10-21W	The Derby Oil Co. & Glenn W. Peel Drlg. Co., Inc. No. 1 "A" Lewis	Arbuckle	3,778-3,782	Jan.	159
Mullenburg 1-10-21W	D. G. Hansen No. 1 Mullenburg	Arbuckle	3,839-3,841	Sept.	155
Teall 9-10-21W	Armer Drilling Co., Inc. No. 1 Teall	K.C.-Lans.	3,528-3,534	April	32
Greenwood County					
Burt 8-26-11E	Ward A. McGinnis No. 1 Eastman	Mississippian	1,865-1,878	June	30
Eureka West 33-25-10E	Penn-Farr No. 1 Hughes	Mississippian	1,979-1,995	Sept.	15
Harper County					
Grabs 13-31-9W	Drillers Gas Co. No. 1 Grabs	Mississippian	4,400-4,449	Oct.	32
Harvey County					
Jester Creek 3-24-1E	Springer & Harper Drlg. Co. No. 1 Leffelman	K.C.-Lans.	2,687-2,692		20
Jones 21-23-3W	B & R Drilling, Inc. No. 1 Jones	Mississippian	3,260-3,313	Jan.	2,800M cu.ft. gas
Jones Northeast 15-23-3W	Westgate-Greenland Oil Co. No. 1 Howard	Mississippian	3,280-3,284 3,315-3,326	Feb.	6,000M cu.ft. gas
McPherson County					
Bonaville 33-17-2W	Texas Pacific Coal & Oil Co. No. 1 Gabrielson	Simpson	3,557-3,570	July	108
Reuben 17-18-2W	Texas Pacific Coal & Oil Co. No. 1 Peterson	Simpson	3,675-3,691	Oct.	25
Morris County					
Burdick 15-17-5E	S. P. Loomis No. 1 Atkinson	Mississippian	2,232-2,277	Sept.	25
Pawnee County					
Larned 23-21-16W	Sunray Oil Corp. No. 1 Brown	Arbuckle	3,877-3,878	June	40& 4,500M cu.ft. gas
Pawnee Rock West 23-20-16W	Jayhawk Oil Co. & Vickers Petr. Co., Inc. No. 1 "A" Dirks	Arbuckle	3,760-3,775	Aug.	100

Phillips County					
Huffstutter 6-2-18W	B & R Drilling, Inc. No. 1 Huffstutter	K.C.-Lans.	3,444-3,480	Sept.	58
Pratt County					
Moore 1-26-14W	Deep Rock Oil Corp & R. W. Rine Drlg. Co. No. 1 Young	Simpson	4,348-4,370	Jan.	40
Rice County					
Engelland 34-20-7W	Skelly Oil Co. No. 1 Engelland	Conglom'ate	3,348-3,362	June	50
Odessa 32-18-6W	Atlantic Refining Co. No. 1 Hoffman	K.C.-Lans.	3,092-3,098	Sept.	338
Odessa South 9-19-6W	J. M. Huber Corp. No. 1 Sims	K.C.-Lans.	3,069-3,075	Oct.	40
Proffitt 13-20-10W	The Henderson Oil Co. No. 1 Proffitt	Arbuckle	3,340-3,345	May	62
Ringwald 32-18-10W	Anderson-Prichard Oil Corp. No. 1 Ringwald	K.C.-Lans. Pre-Camb'n	2,947-2,952 3,072-3,090	June	375
Rooks County					
Belmont 28-7-19W	Harry Gore No. 1 Cramm	K.C.-Lans.	3,337-3,346	June	66
Berland North 18-10-19W	Birmingham-Bartlett Drlg. Co. No. 1 Marcotte This pool is now part of the Berland pool.	Arbuckle	3,765-3,770	Jan.	3,000(max.)
Berland Northeast 17-10-19W	Heathman-Honaker Drlg. Co. & Sunray Oil Corp. No. 1 Richardson This pool is now part of the Berland pool.		3,768-3,772	July	267
Berland Southwest 26-10-20W	Nadel & Gussman Nc. 1 Sutor	Arbuckle	3,728-3,733	Dec.	505
Eagle Creek 2-10-20W	Francis Oil and Gas, Inc. No. 1 Wilson	Arbuckle	3,822-3,831	June	167
Hayden 31-8-19W	Heathman-Honaker Drlg. Co. No. 1 Hayden	Arbuckle	3,513-3,516	Jan.	122
Locust Grove 8-7-19W	Sam K. Pack No. 1 Griebel	Arbuckle	3,450-3,460	May	25
McHale South 17-9-18W	Petroleum, Inc. No. 1 Ruzicka	Arbuckle	3,615-3,619	Jan.	50
Palco Southeast 3-10-20W	Heathman Drlg. Co., Inc. No. 1 Nutsch	Arbuckle	3,827-3,832	Oct.	463
Yohe 4-9-18W	Continental Oil Co. No. 1 Yohe	K.C.-Lans.	3,266-3,290	April	892
Zurich Townsite South 34-9-19W	W. L. Hartman No. 1 Webster This pool was abandoned during 1949.	Arbuckle	3,640-3,647	Jan.	50
Russell County					
Claussen North 22-12-14W	Franco-Central Oil Co. No. 1 Wagner	K.C.-Lans.	2,956-2,966	Nov.	Now dry
Claussen West 29-12-14W	Crown Oil Co., Inc. No 1 Foster	K.C.-Lans.	2,841-2,854	Sept.	12
Ely 15-15-13W	The ElDorado Refining Co. No. 1 Ely	Shawnee	2,946-2,952	Aug.	89
Eulert 35-11-15W	Anschutz Drilling Co. No. 1 Eulert	Arbuckle	3,316-3,322	Sept.	3,000 (max.)
Homer 17-14-13W	John Lindas Oil, Inc. & Murfin Drlg. Co. No. 1 "B" Ehrlich	Tarkio	2,396-2,435	July	90
Homer Southeast 16-14-13W	John Lindas Oil, Inc. et al. No. 1 "A" Dumler	Tarkio	2,408-2,434	Aug.	4
Parker Northwest 7-15-12W	John Lindas Oil, Inc. No. 1 Parker This pool is now part of the Parker pool.	K.C.-Lans.	3,086-3,102	May	833

TABLE 5.—*Oil and gas pools discovered in Kansas during 1949, concluded*

County, pool, and location of discovery well	Discovery well	Producing zone	Production depth, feet	Month of discovery	Initial production per day, bbls.
Piester 24-15-13W	E. H. Adair Oil Co. No. 2 "A" Piester This pool is now part of the Trapp pool.	K.C.-Lans.	3,092-3,100	March	810
Russell East 2[illegible]-13-14W	Shields Oil Producers No. 1 Anschutz	Arbuckle	3,273-3,275 3,277-3,278 3,282-3,283	Aug.	107
Trapp East 14-15-13W	E. H. Adair Oil Co. No. 1 Sellens	Arbuckle	3,277-3,281	June	143
Sedgwick County					
Bartholomew North 30-27-4W	J. M. Huber Corp. & Pabco Drlg. Inc. No. 1 Berk This pool is now part of the Bartholomew pool.	Mississippian	3,723-3,748	March	677
Stafford County					
Black Cloud 3-21-12W	E. H. Adair Oil Co. No. 1 Wolf This pool is now part of the Bryant pool.	Arbuckle	3,415-3,428	Jan.	169
Gates South (Revived) 3-22-13W	Campbell & W. P. Faulkner No. 1 Gates	Arbuckle	3,748-3,756	Jan.	125
Grow 16-21-13W	Westgate-Greenland Oil Co. No. 1 Grow	Arbuckle	3,705-3,712	June	132
Hart 36-22-14W	Musgrove Petroleum Corp. No. 1 Hart	Arbuckle	3,830-3,832	Aug.	472
Hildebrand South 11-24-12W	Armer Drilling Co., Inc. No. 1 Hildebrand This pool is now part of the Hildebrand pool.	Viola	3,810-3,830	Feb.	96
Merle 32-23-13W	Crown Oil Co., Inc. & The Lotus Oil Co. No. 1 Williams	K.C.-Lans.	3,669-3,677	Jan.	779
Mueller West 24-21-13W	Midstates Oil Corp. No. 1 "B" McCrary	Arbuckle	3,658-3,669	June	26
Oscar 24-22-14W	Anschutz Drilling Co., Inc. No. 1 Smith	Arbuckle	3,798-3,805	Aug.	250
Prairie Home 2-21-13W	Armer Drilling Co., Inc. No. 1 Andress	Arbuckle	3,514-3,528	May	242
Silver Bell 10-22-13W	J. D. Ferrell Oil Co., Inc. No. 1 Hahn	Arbuckle	3,774-3,786	June	408
Sumner County					
Alton 10-35-2W	Champlin Refining Co. No. 1 Slentz	Simpson	4,711-4,719	Nov.	1,298
Trego County					
Wakeeney East 13-11-23W	B & R Drilling, Inc. No. 1 Carpenter	K.C.-Lans.	3,576-3,578	March	51
Wabaunsee County					
Davis Ranch 33-13-10E	The Carter Oil Co. No. 1 Davis	Viola	3,201-3,206	May	2,580
Woodson County					
Batesville Southwest 32-25-14E	C. W. Darling No. 1 Hare	K.C.-Lans.	677- 692	June	6
Zlab 9-24-14E	White & Ellis Drilling Co. No. 1 Zlab	Mississippian	1,655-1,656	June	5½

fication of wildcat wells becomes somewhat arbitrary. Hence, the total number of wildcat wells the reader may obtain from different sources is likely to vary somewhat.

For purposes of the tables, wells counted as 1949 completions are those which have been finished within the year and which have been drilled to completion in one operation. Old wells worked over, although they came in as producers, were not counted as 1949 completions. The 1949 wells abandoned as dry and then converted to salt water disposal use have sometimes been classed as dry holes, unless it was plain that they were drilled expressly for salt water disposal.

Exploration activities.—The number of core drill operations and geophysical parties active in the State during 1949 is shown in Table 6.

Secondary oil recovery.—Secondary oil recovery has become so important a method of oil production in Kansas that a special chapter on it has been written for this bulletin.

Geologic column.—A rather generalized and incomplete geologic column (Fig. 3) shows the sequence of rock units. The principal oil- and gas-producing zones in Kansas are indicated. Thicknesses are not given because the variation is so great. Zone names placed in quotation marks are used rather loosely and are not strictly defined. Some of the rock units shown are not present in western Kansas and others are absent in the eastern part of the State.

Well elevations.—Elevations of many wildcat tests and new discovery wells in the western counties of the State are given in tables or in the text. Well logs usually are obtainable at nominal

TABLE 6.—*Geophysical and core drilling activities, 1949*

Months	Seismograph parties	Gravity survey parties	Core drill operations
January	7	3	9
February	6	1	7
March	6	1	7
April	5	1	6
May	6	2	6
June	6	2	5
July	5	2	5
August	8	2	6
September	8	1	4
October	4	1	7
November	4	1	5
December	6	1	4

cost from the Kansas Well Log Bureau in Wichita. In the case of the eastern counties containing the older fields and in areas of large production, such as Russell, Barton, and Ellis Counties, elevations of wildcat wells have been omitted because in such areas of concentrated activity they should not be difficult to obtain. Publication of elevations of approximately 100 wildcat wells was made possible through the kind cooperation of Laughlin-Simmons and Company of Tulsa, Oklahoma.

The eastern Kansas counties.—The principal oil-producing counties of eastern Kansas are shown on one map, Plate 1. Areas of 1949 production, both primary and secondary, are indicated.

Production statistics and other data on eastern Kansas counties are shown in Table 44 in the same manner that data for western Kansas counties are given.

As the Davis Ranch pool discovery in Wabaunsee County was the outstanding development in the State during 1949 especial attention has been given to details of activities which followed the discovery. A separate map, Figure 31, covers this important development.

Previous publications.—For many years the State Geological Survey has published reviews of oil and gas developments and descriptions of the petroleum geology of Kansas. Oil and gas production statistics were included in a series on the "Mineral Resources of Kansas" published for the years 1897 to 1903 inclusive. The first comprehensive publication on oil and gas by the Kansas Survey was issued in 1908 as Volume 9. The development of shallow oil and gas in eastern Kansas was greatly facilitated by the publication of State Geological Survey of Kansas Bulletin 3 in 1917. This was followed by Bulletin 6, also on oil and gas resources of Kansas; five parts were published during the interval from 1920 to 1927.

More recently the Survey has published a more continuous series of reviews of oil and gas developments in the State. The first of these was prepared by Kesler and published in 1928 as Mineral Resources Circular 1. The second, covering 1928, 1929, and 1930, written by Folger and Hall, was issued in 1933 as Mineral Resources Circular 2. Koester is the author of Mineral Resources Circular 3 published in 1934. Since 1937, Ver Wiebe has prepared data annually for Survey publications on oil and gas developments in western Kansas counties.

Bulletin 57 by Jewett and Abernathy reviews oil and gas developments in eastern Kansas counties up to 1943. Bulletin 75

Geologic System	Some Subdivisions
Quaternary	Recent — Alluvium (Pleistocene) glacial sediments
Tertiary	(Pliocene) Ogallala
Cretaceous Jurassic?	
Permian	Stone Corral dolomite Herington limestone Winfield limestone Ft. Riley limestone Wreford limestone Indian Cave sandstone } Hugoton gas zones
Pennsylvanian	Tarkio limestone Topeka limestone Oread limestone Lansing-Kansas City sequence (limestones) "Wayside sand" "Peru sand" Ft Scott limestone "Squirrel sand" "Bartlesville sand" Sooy conglomerate Atokan rocks
Mississippian	"Chat" "Mississippi lime" Kinderhook (Chattanooga) "Misener sand"
Silurian and Devonian	"Hunton limestone"
Ordovician	Sylvan shale Viola limestone Simpson-St. Peter sandstone Arbuckle dolomite
Cambrian	Lamotte (Reagan) sandstone
Pre-Cambrian	Granite and quartzite

FIG. 3.—Generalized geologic column showing rock units commonly used by drillers and petroleum engineers.

treats oil and gas developments in the entire State during 1947. The Survey plans to continue publishing yearly bulletins on oil and gas developments in Kansas. Jewett prepared Bulletin 77, a report on oil and gas production developments in eastern Kansas during 1944, 1945, 1946, 1947, and 1948.

Reports on oil and gas geology of some eastern Kansas counties have been published by the Survey. Three parts of Bulletin 6 cover oil and gas reports on Allen and Neohso, Wilson and Montgomery, and Anderson Counties. Bulletin 5 on the Elk City gas field, Bulletin 7 on the geology of the El Dorado oil and gas field, and Bulletin 12 on the geology of Cowley County, with special reference to the occurrence of oil and gas, are important contributions and were especially comprehensive at the time of publication. A later series of county oil and gas reports with maps showing locations and stratigraphic depths of drill holes includes reports for Labette, Linn, and Montgomery Counties.

In 1935 the State Geological Survey published Bulletin 20, on subsurface studies in northeastern Kansas, which contains results of studies of samples and logs, and information on oil and gas possibilities in Atchison, Brown, Doniphan, Douglas, Jackson, Jefferson, Johnson, Leavenworth, Shawnee, Wabaunsee, and Wyandotte Counties.

Cooperative investigations of the State Geological Survey and the Mineral Fuels Division of the Federal Geological Survey under the supervision of Wallace Lee have yielded several very important contributions to the knowledge of oil and gas geology in Kansas. Of these, State Survey Bulletin 38, part 10 is a preliminary report on the McLouth oil and gas field, Jefferson and Leavenworth Counties. Bulletin 53 is a more extensive report on the same area. Bulletin 51 describes the stratigraphy and structural development of the Forest City basin and Bulletin 74 covers the Salina basin.

Recently six subsurface geologic cross sections showing stratigraphy and structural conditions in western Kansas have been prepared by the United States Geological Survey in cooperation with the State Geological Survey. The locations of oil and gas pools, pipe lines, refineries, and other installations are shown on a large map of the State published in 1948.

Special attention is called also to United States Geological Survey Oil and Gas Investigations preliminary map 48 which shows the geologic development of the Forest City basin chiefly

by means of maps indicating the thicknesses of various stratigraphic units.

Straggler wells.—After the statistical records have been finished for each year, late reports of completed wells continue to come in. These are referred to as stragglers, reported in the bulletin for the following year, but are credited to the year in which the wells were completed. Stragglers for 1948 are shown in Table 7.

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It would have been impossible to assign much of the oil produced in eastern Kansas to definite areas or even to counties without the cooperation of the several persons and organizations who are sending monthly oil purchase reports to the Survey and have helped in other ways. Thanks are expressed to: A. J. Becker; Marvin Boyer; The Carter Oil Company; Cities Service Oil Company; Continental Oil & Refining Company; Cooperative Refinery Association; The El Dorado Refining Company; Virgil Gamble; Joplin Refining Company; Kanotex Refining Company; Kansas City Testing Laboratory; K. B. Oil and Gas Company; Lynde, Walter, and Darby; M. F. A. Oil Company; Joe Maclaskey; W. L. Maclaskey; Sinclair Oil Marketing Division, Sinclair Oil and Refining Company; Sinclair Prairie Oil Company; Skelly Oil Company; Standard Oil Purchasing Company; Stekoll Petroleum Company; and White Eagle Oil Company.

Many people engaged in various phases of the petroleum industry in Kansas have been generous in giving us data that have been used in this report. Here should be listed: Neal J. Bingman, Gene Brinegar, Frank Brooks, H. W. Brown, B. F. Brundred, Robert Carmody, Virgil Cole, Mack C. Colt, John A. Edwards, H. A. Ford, Lee Garrett, Fred V. Kluck, Thomas W. Lee, Roy P. Lehman, Ward A. McGinnis, W. E. McHugh, Charles E. Miller, Carl L. Pate, Eugene P. Philbrick, C. D. Reasor, Harold O. Smedley, William L. Stryker, Charles W. Studt, Albert Sweeney of Interstate Oil Compact Commission, Harvel E. White, Earl A. Whitworth, Paul A. Witherspoon, and Tom Wright.

Thanks are given to numerous companies and individuals who have contributed information on water flooding and gas production.

TABLE 7.—*Wells completed in 1948 but reported in 1949*

County	Oil	Gas	Dry	SWD
Allen		2	1	
Barber		1	1	
Barton	4			
Butler	2		1	
Chautauqua	2			1
Cowley			2	
Dickinson			1	
Ellis	6		2	
Ellsworth	1		1	
Finney	1	1		
Graham	1			
Greenwood	2		1	5
Harvey	2		1	
Haskell		1		
Kearny		1		
Linn	1			2
Marion	1			
McPherson			1	
Neosho	2			4
Phillips	1			
Pratt	1			
Reno	2		1	
Rice	3		2	
Rooks	13		1	
Rush	2			
Russell	4		1	
Saline	1			
Seward		2		
Stafford	2		1	
Stanton		1		
Stevens		2		
Sumner	1			
Wilson		2	1	
Total	55	13	19	12

Especial thanks are due Laughlin-Simmons and Company of Tulsa for permission to publish certain well elevations, to C. Engstrand and his Kansas Sample Log Service for permission to use data on some rank wildcat tests drilled in counties which do not now produce oil and gas, and to the Independent Oil and Gas Service, various phases of whose scouting service have been helpful.

The Survey is pleased to acknowledge assistance from Vance E. Rowe in connection with his supplying crude oil production figures.

SECONDARY RECOVERY

Repressuring of oil-bearing rocks by water injection, a method of secondary recovery commonly called water flooding, has become important in eastern Kansas—especially in the Forest City and Cherokee basins. Of the total number of barrels of oil

produced in the State in 1949, about 7 million barrels (slightly less than 7 percent) was produced by this method in eastern counties. (For the purpose of this bulletin water flooding practiced under repressuring permits east of the sixth Principal Meridian is included; operations west of that line—an arbitrary division—are omitted from our tables and discussions as they consist largely of salt water disposal operations rather than true water floods. McPherson County and some others to the west—which do contain a few water floods—are, therefore, disregarded in this part of the bulletin.)

Repressuring by water consists of injecting fresh or salt water through input wells into oil-bearing formations under pressure sufficient to displace oil from pores in the rocks and to drive it into producing wells. The oil wells may be pumped or the developed water pressure may be sufficient to cause the oil to flow from the wells. About 900 pounds per square inch at the wellhead is the maximum pressure to which water is subjected. The arrangement of water-input and oil-producing wells varies from project to project but the "five spot" pattern is common. This consists of squares having a producing well at each corner and a water-input well in the center. A development of this kind consists of alternate rows of oil wells and water-injection wells, the number of each kind being about equal. Although this five-spot pattern is approximated in many Kansas projects, the natural outline of pools, many of which are "shoestrings," does not everywhere permit geometrically perfect spacing of wells.

Data on water-flooding projects that were operated in eastern Kansas in 1949 and reported to the State Geological Survey are listed in Table 9.

Growth of water flooding in Kansas.—From 1935, the year in which water-flooding was first permitted by law in Kansas, to the end of 1947, the Division of Conservation of the State Corporation Commission issued 304 permits to initiate repressuring projects. Forty-seven permits were issued in 1948, and 54 in 1949. Not all permits have been exercised and in the 1948 development report of the State Geological Survey 166 projects were listed. In 1949 there were 150 active projects (Table 9) in the area of the State covered. In several limestone and dolomite fields in western Kansas, produced brine is put back into oil-producing formations and some increase in oil production may result. However, as most of such projects are primarily for the purpose of salt water disposal, they are not included here as secondary recovery projects.

Water flooding, however, was practiced in Kansas many years before 1935. The first beneficial floods in the State were accidental as they had been earlier in some eastern states. It was noticed that when water leaked from old wells through corroded casings into oil sands, near-by wells sometimes showed a marked increase in production of oil. Water displaced oil from pores in the rocks, concentrating the oil ahead of the flood of water. This led to planned floods 30 or more years ago. One of the earliest Kansas projects was in the Stanton pool (within the Paola-Rantoul field), Miami County. The "Peru sand" is still being repressured there.

Water-flooding projects were organized in Greenwood, Chautauqua, and Linn Counties in 1935. It is probable that the first organized flood in the State was in Greenwood County, which now has the largest number of floods (35) of all Kansas counties. By 1937 interest had spread rapidly through the old stripper fields. During the next few years extensive studies of the engineering and geological problems involved in repressuring with water were made. Before the end of 1942 successful projects were in operation in 13 eastern Kansas counties. Some of the fields in which water was being injected had been drilled in the early 1900's and production of individual wells before repressuring had dwindled to a fraction of a barrel of oil per day. Most of the earliest organized projects are still active.

The effects of water flooding in Kansas are illustrated by the marked increase of oil production in the past few years in several eastern counties. In 1940 oil production in Franklin County was slightly more than 68,000 barrels; in 1948 it was 233,325 barrels, and in 1949 255,767 barrels. Oil production in Greenwood County had dropped to about 3,227,000 in 1940; but in 1948 it was up to 4,776,611 barrels, and in 1949 to 5,189,838 barrels. Montgomery County produced about 303,000 barrels of oil in 1940, 945,616 barrels in 1948, and 878,367 barrels in 1949. In 1940 fields in Woodson County yielded 253,263 barrels of oil, but 441,771 barrels in 1948, and 614,030 barrels in 1949.

Present status.—The data in Table 9 were obtained by the State Geological Survey in cooperation with the Division of Conservation of the State Corporation Commission, and the Interstate Oil Compact Commission's Secondary Recovery Division.

A total of 150 secondary recovery projects (146 water floods and 4 gas injection projects) were reported in 1949 in eastern counties in Kansas. The approximate total acreage under active development during the year was 19,437 acres. Oil produced in

the eastern counties by secondary recovery was approximately 7 million barrels.

The greatest number of water-flooding projects is in Pennsylvanian sandstone fields. The "Bartlesville sand" was repressured in 73 projects. Other Pennsylvanian sandstones in the Cherokee and Forest City basins were repressured in fewer fields.

Because of the importance of the "Bartlesville sand" in the Kansas secondary recovery program, Plate 3 was prepared. It is a map showing depths to the horizon of the "Bartlesville" in various parts of eastern Kansas and showing locations of areas that produced oil from the "Bartlesville" in 1949. The map does not show the many areas in southeastern Kansas where the "Bartlesville sand" is absent.

Reserves.—It is probably too early to attempt an estimate of the reserves of oil that can be recovered by secondary methods in western Kansas counties. Sweeney compiled data that show estimated total reserves as of January 1, 1948, in eastern counties, as 251,493,000 barrels of oil. It is judged that this is a conservative figure. At the present time, two years after Sweeney's estimate, the reserves of oil in eastern Kansas counties that can be recovered by water-flooding methods are believed to be at least 250,000,000 barrels.

Table 8 shows estimated reserves of oil in eastern Kansas counties that are believed to be recoverable by water flooding. The table is based primarily on Sweeney's estimates.

Water available for repressuring.—In the 17 eastern Kansas counties (Table 9), salt water was used for repressuring in 91

TABLE 8.—*Estimated water-flood oil reserves in eastern Kansas counties**

County	Million barrels of oil
Allen	9
Anderson	7
Bourbon	1
Butler	57
Chautauqua	2
Cowley	14
Crawford	1
Elk	2
Franklin	13
Greenwood	93
Linn	2
Lyon	4
Miami	19
Montgomery	14
Neosho	8
Wilson	1
Woodson	3

*Estimates made by A. E. Sweeney, Jr., Interstate Oil Compact Commission.

TABLE 9.—*Data on secondary recovery projects in Kansas, 1949*

County	Field	Producing zone	Developed acreage	No. wells	Date started	Injection medium
Allen	Bronson-Zenia	"Bartlesville"	5	10	1947	Fresh water
	Elsmore Shoestring	do	15	12	1948	do
	do	do	40	26	1941	do
	do	do	12	8	1943	do
	do	do	70	12	1944	Salt water
	Humboldt-Chanute	do	160	79	1941	do
	do	do	220	151	.....	Fresh water
	Secondary recovery production, 120,319 bbls.					
Anderson	Bush City Shoestring	"Squirrel"	323	159	1944	Salt water
	do	do	500	250	1939	do
	do	do	250	133	1941	do
	Centerville	"Bartlesville"	142	11	1948	do
	Garnett Shoestring	"Squirrel"	296	170	1936	Fresh water
	Kincaid	"Bartlesville"	256	42	1946	Salt water
	Secondary recovery production, 314,866 bbls.					
Bourbon	Hepler	do	2.5	1	1949	do
Butler	Augusta North	Kansas City	30	3	1949	do
	do	do	20	10	1949	do
	Blankenship	"Bartlesville"	28	8	1949	Salt & fresh water
	do	do	93	16	1949	Salt water
	El Dorado	Admire	100	13	1949	Fresh water
	do	Viola (abandoned during 1949)	.....	....	1947	Salt water
	do	Ordovician	680	51	1947	do
	do	"Simpson"	40	9	1948	Fresh & salt water
	do	Permian	110	24	1947	Salt water
	Fox-Bush	"Bartlesville"	160	6	1949	do
	do	do	10	2	1944	Fresh water
	do	do	120	12	1944	Fresh & Salt water
	do	do	200	11	1929	Residue gas
	do	do	30	10	1939	Salt water

	Kramer-Stern	"Leon lime"	50	4	1937	do
	Seward	Kansas City	40	3	1945	do
	Young	do	80	7	1946	do
	Secondary recovery production, 443,939 bbls.					
Chautauqua	Elgin	do	80	8	1932	do
	Peru-Sedan	"Peru" (abandoned during 1949)	.....	....	1937	do
	do	do	.....	....	.....	.....
	do	do	210	29	.....	Salt water
	do	do	30	15	1938	do
	do	do	25	6		do
	do	do	560	49	.....	do
	Secondary recovery production, 57,174 bbls.					
Cowley	Couch	"Bartlesville"	50	4	1948	do
	Eastman	do	120	19	1930	Residue gas
	Hittle	"Layton"	80	3	1945	Salt water
	Murphy	"Bartlesville"	260	5	1946	do
	Rainbow Bend	"Burbank"	1,172	59	1933	Gas
	Weathered	"Stalnaker"	40	3	1946	Salt water
	Winfield	"Bartlesville"	20	6	1948	do
	do	do	80	7	1948	do
	Secondary recovery production, 263,893 bbls.					
Crawford	McCune	do	80	79	1941	do
	Walnut-Southeast	do	150	37	1941	Fresh & salt water
	Secondary recovery production, 29,750 bbls.					
Elk	Longton	"Longton"	53	14	1947	Fresh water
	Secondary recovery production, 5,543 bbls.					
Franklin	Paola-Rantoul	"Squirrel"	25	7	1949	do
	do	do	100	43	1948	Salt water
	do	do	400	111	1943	Fresh & salt water
	do	do	62	25	1943	do
	do	do	59	22	1948	do
	Secondary recovery production, 163,753 bbls.					

TABLE 9.—*Data on secondary recovery projects in Kansas, 1949, continued*

County	Field	Producing zone	Developed acreage	No. wells	Date started	Injection medium
Greenwood	Browning	"Bartlesville"	50	8	1949	Salt water
	Burkett	do	665.25	88	1939	do
	Demalorie-Souder	do	100	9	1946	do
	do	do	80	55	1949	Salt water & gas
	do	do	25	3	1949	Salt water
	do	do	5	4	1949	do
	Fankhouser	do	30	6	1944	do
	do	do	165	24	1949	do
	Hamilton	do	60	6	1938	Fresh & salt water
	do	do	128	29	1946	do
	Lamont	do	143	54	1949	Salt water
	Madison	do	65	5	1949	do
	do	do	165	17	1948	do
	Pixlee	do	270	19	1947	do
	Polhamus	do	110	19	1949	do
	Sallyards	do	195	38	1946	do
	Scott	do	200	42	1945	do
	Seeley-Wick	do	551	61	1943	do
	do	do	20	5	1947	do
	do	do	72	22	1947	do
	do	do	50	5	1947	do
	do	do	167.5	25	1943	do
	do	do	190	25	1946	do
	do	do	23	1	1942	do
	Teeter	do	73	13	1944	do
	do	do	200	13	1947	do
	Thrall-Aagard	do	51	11	1948	do
	do	do	91	13	1944	do
	do	do	84	11	1944	do
	do	do	47.5	5	1943	do
	do	do	8	2	1937	do

	do	do	110	16	1942	do
	do	do	80	11	1945	do
	do	do	160	18	.....	Gas
	do	do	80	11	1949	Salt water
	Secondary recovery production, 3,433,317 bbls.					
Linn	Centerville	"Squirrel"	53.5	36	1948	Fresh water
	do	do	88.5	57	1936	do
	Goodrich-Parker	do	150	80	1944	Salt water
	LaCygne-Cadmus	"Prue"	22.5	47	1942	do
	Secondary recovery production, 39,475 bbls.					
Lyon	Atyeo	"Bartlesville"	181	29	1947	do
	do	do	70	6	1948	do
	Fankhouser	do	60	8	1943	do
	Secondary recovery production, 396,249 bbls.					
Miami	Big Lake (Paola-Rantoul)	"Big Lake"	110	50	1944	do
	Block	"Squirrel"	22	9	1947	do
	Paola-Rantoul	"Peru".	90	63	1941	Fresh water
	do	do	36	24	1947	Salt water
	do	do	24	16	1941	Fresh water
	do	do	566	171	1945	Salt water
	do	do	290	95	1944	do
	do	"Squirrel"	29.85	0	1949	do
	do	do	188	71	1947	do
	do	do	145	41	1943	Fresh & salt water
	Secondary recovery production, 262,891 bbls.					
Montgomery	Coffeyville-Cherryvale	"Peru"	70	22	1948	Salt water
	do	do	70	31	1946	Fresh water
	do	"Bartlesville"	65	17	1948	Salt water
	Jefferson-Sycamore	do	185	54	1948	do
	do	do	165	35	1945	Fresh water
	do	do	1,700	390	1944	Fresh & salt water
	do	do	335	35	1946	Salt water
	do	"Wayside"	60	22	1944	Fresh water

TABLE 9.—*Data on secondary recovery projects in Kansas, 1949, concluded*

County	Field	Producing zone	Developed acreage	No. wells	Date started	medium Injection
	Wayside-Havana	do	50	17	1945	Salt water
	do	do	105	38	1942	Salt & fresh water
	do	"Wayside" & "Wiser"	40	16	1945	do
	do	"Wayside"	42	20	1944	do
	do	do	40	23	1945	do
	do	do	56	29	1938	do
	do	do	80	?	1949	?
	Secondary recovery production, 578,676 bbls.					
Neosho	Humboldt-Chanute	"Bartlesville"	20	6	1941	Fresh water
	do	do	1,022	371	1937	Fresh water
	do	do	153	45	1938	Salt water
	do	do	250	90	1946	Salt & fresh water
	Urbana	do	40	11	1947	Fresh & salt water
	Secondary recovery production, 453,121 bbls.					
Allen & Neosho	Humboldt-Chanute	"Bartlesville"	20	11	1947	Salt water
	Secondary recovery production, 9,334 bbls.					
Sedgwick	Greenwich	.....	120	15	1937	do
	Robbins	"Miss. lime"	80	6	1945	Fresh water
	do	Miss. "chat"	130	11	1947	Fresh & salt water
	Secondary recovery production, 123,573 bbls.					
Sumner	Oxford	.....	40	3	1949	Salt water
	do	.....	120	6	1937	do
	Secondary recovery production, 25,859 bbls.					

projects; fresh water in 20; and combined fresh and salt water in 33. No information on the quality or source of water for 2 projects is at hand.

Sources of salt water include at least 11 subsurface zones. The three main ones are Douglas sand, 37 projects; Arbuckle dolomite, 24 projects; and "Bartlesville sand," 13 projects. Principal sources of fresh water are shallow ground-water reservoirs, lakes, streams, and municipal water supplies. Where combined fresh and salt water was used the brine was obtained commonly from the local oil-producing formation. Treatment of salt water includes aeration, addition of chemicals, settling, and filtration singly or in various combinations. However, in the majority of cases where salt water was used, no treatment was given the brine. Fresh water requires treatment more commonly than do the brines. Such treatment includes adding lime, chlorine, alum, and settling and filtering or some combination of these. Most users of combined fresh and salt water use treating methods.

In general ground water is the most satisfactory type for water flooding. The quality of river water varies greatly with the seasons; hence the treatment necessary varies from time to time. Ground water usually remains uniform in chemical composition for long periods; therefore any treatment required before injection need not be changed.

Practically unlimited amounts of salt water are available in oil-bearing and other deep formations in Kansas. Shallow, fresh, or slightly mineralized water is not so plentiful especially in most of eastern Kansas.

ALLEN COUNTY

Oil production totaled 278,368 barrels from 11 fields. There were 7 water-flooding projects operating in the county. About 398,501 thousand cubic feet of gas was produced.

Developments during 1949.—During 1949 Allen County produced 278,368 barrels of oil and approximately 398,501 thousand cubic feet of natural gas. As shown in Table 9, seven water flooding projects were operated in three fields. No pools were discovered in the county during the year. Drilling activities were principally in connection with water-flooding projects and expansion of the **Neosho Falls** field in the northwestern part of the county. About 400 wells were drilled in the county during the year.

Areas in which oil was produced by primary and secondary methods in Allen County during 1949 are shown on Plate 1. Oil production during the year and other data regarding oil fields are shown in Table 44. Table 9 contains data on water-flooding projects that were operated in the county.

Gas production principally was in the **Humboldt-Chanute** field.

ANDERSON COUNTY

Anderson County produced 402,420 barrels of oil in 1949. There were 7 active fields and 6 active water-flooding projects.

Developments during 1949.—During 1949, Anderson County produced 402,420 barrels of oil and approximately 17,598 thousand cubic feet of gas. Of the oil produced, 314,866 barrels was produced by water-flooding methods.

Oil production statistics and other data on Anderson County oil fields are listed in Table 44. Locations of areas of oil production by primary and secondary methods are shown on Plate 1. Data on water-flooding projects are listed in Table 9.

Water flooding.—More than 78 percent of the oil produced in Franklin County in 1949 was obtained by water-flooding methods in 6 projects. In three projects in the **Bush City** field, the "Squirrel" sand was repressured; the "Bartlesville" was repressured in the **Centerville** and **Kincaid** fields; and the "Squirrel" in the **Garnett Shoestring** area.

BARBER COUNTY

The 1949 production from 17 pools was 1,253,545 barrels of oil and 9,718,911 thousand cubic feet of gas. Wells drilled during 1949 include: oil 14, gas 1, dry 13, total 28 including 5 wildcats. One new pool was discovered; none was revived or abandoned.

Developments during 1949.—There was considerable interest in Barber County during 1949 as indicated by the drilling of 28 test wells. As a result of wildcat exploration one new oil pool, called the **Rhodes,** was found. The discovery well was drilled by the Barbara Oil Company on the Page farm in the SW¼ SW¼ SW¼ sec. 15, T. 33 S., R. 11 W., approximately 6 miles northwest of Hazelton. The oil is derived from a porous

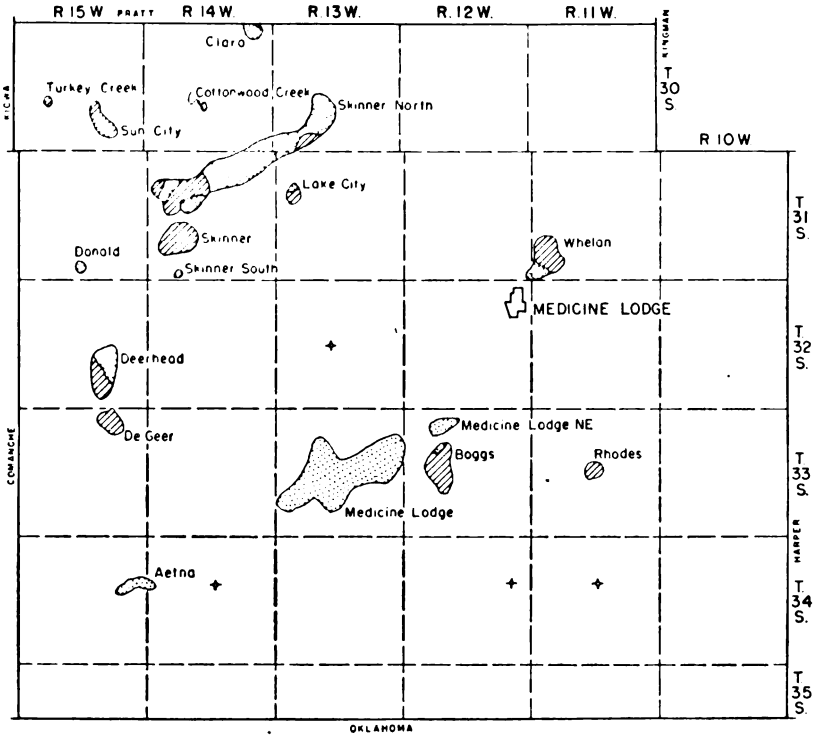

FIG. 4.—Map of Barber County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

zone near the top of the Mississippian strata between 4,551, and 4,565 feet. With a potential capacity of 146 barrels of oil per day, this well invited offset drilling. Three more oil wells were completed before the end of the year.

In the **Skinner North** pool four additional oil wells were completed in sec. 17, T. 31 S., R. 14 W. by J. M. Huber et al. In the **Medicine Lodge Northeast** pool one new gas well was completed in the Douglas and an old well was worked over for a gas producer in the deeper Simpson formation. In the **Boggs** pool the Continental Oil Company added two more oil wells, one of which is a flowing well and one dry hole. Skelly added one oil well. All produce from the Simpson formation. In the **DeGeer** pool, where oil occurs in the Viola dolomite, the Sinclair Prairie Oil Company brought in three large wells, all with maximum potentials of 3,000 barrels per day.

TABLE 10.—*Dry wildcat tests drilled in Barber County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
White Eagle Oil Co. No. 1 Newton	NW cor. NE¼ 21-32-13W	3,970	5,021	5,075
Woods Drilling Co. No. 1 Schupbach	Cen. N½ NW¼ NW¼ 15-34-11W	4,120	5,172	5,192
Flynn Oil Co. No. 1 Humphrey	NW cor. NW¼ 13-34-12W	3,917	5,300	5,337
Aladdin Petro. Corp. and Co-op. Ref. Assoc. No. 1 Kinkaid	SW¼ NE¼ NW¼ 15-34-14W	4,188	5,426	5,478

In the southern part of the county three rank wildcat tests were drilled. The Woods Drilling Company completed a dry hole 5 miles north of Kiowa in the center of T. 34 S., R. 11 W. on the Schupbach farm. Seven miles southeast of the Boggs pool, the Flynn Oil Company drilled a dry hole on the Humphrey farm in sec. 13, T. 34 S., R. 12 W. A good show of gas was found at 4,630 feet in the Mississippian. Salt water was found in the Arbuckle dolomite. Three miles east of the Aetna gas pool the Aladdin Petroleum Corporation and the Cooperative Refinery Asociation drilled a dry hole on the Kinkaid farm in sec. 15, T. 34 S., R. 14 W. Here also a good show of gas, probably a quarter of a million cubic feet per day, was found near the top of the Mississippian. The hole was completed at a total depth of 5,478 feet, about 50 feet below the top of the Arbuckle dolomite.

Table 10 shows the 1949 wildcat wells drilled in Barber County. Pertinent information on production, area, and producing zones is given in Table 44. Figure 4 shows the oil and gas pools of Barber County.

BARTON COUNTY

The 1949 production from 75 pools was 18,500,807 barrels of oil and 5,351,631 thousand cubic feet of gas. Wells drilled during 1949: oil 245, gas 1, dry 142, salt water disposal 6, total 395 including 30 wildcats. Fourteen new oil pools were discovered; 3 were combined; none was revived or abandoned.

Developments during 1949.—More wells were completed in Barton County during 1949 than in any other Kansas county.

Among the wildcat tests were 14 which discovered new oil pools. These are shown on Figure 5 and are named the Axman, Bryant Southeast, Buckbee, Cheyenne View, Cheyenne View Southwest, Fransen, Hammer North, McCauley, Meadowside, Merten Southeast, Rolling Green East, Rowland, Sunflower, and Sunny Valley.

The **Rowland** pool is located a mile southwest of the Klug pool in sec. 32, T. 17 S., R. 13 W. not far from Hoisington. It produces oil from the Arbuckle dolomite. The **McCauley** pool is located a mile southeast of the Klug pool in the same township. Here the Arbuckle was found to be dry, but the Kansas City-Lansing limestone contained enough oil to make a commercial well. Considerable water is produced with the oil. The **Axman** pool is located north of Olmitz a few miles west of the Carroll pool. Production comes from the Arbuckle dolomite. The **Meadowside** pool is located about 5 miles south of Claflin in sec. 24, T. 18 S., R. 11 W. The discovery well is rated at 3,000 barrels of oil per day from the Arbuckle dolomite. Later a second well found production in the Kansas City-Lansing limestone. Three of the new pools were found northwest of Ellinwood. They are the **Cheyenne View**, sec. 12, T. 19 S., R. 12 W. producing from the Arbuckle dolomite, the **Cheyenne View Southwest**, sec. 14, T. 19 S., R. 12 W. producing from the Kansas City-Lansing limestone, and the **Hammer North**, sec. 23, T. 19 S., R. 12 W., producing from the Arbuckle dolomite. In the western part of the county not far from the Otis-Albert pool, B & R Drilling, Inc., found production in the Reagan in sec. 12, T. 19 S., R. 15 W. This well opened the **Merten Southeast** pool.

The Franco Central Oil Company brought in a new pool called the **Sunflower** in sec. 8, T. 17 S., R. 12 W., a few miles southeast of the Trapp and Ainsworth South pools. The discovery well, the No. 1 Klug, was rated at 132 barrels of oil per day from the Arbuckle at 3,376 feet.

The remaining five pools are located not far west of the Silica pool in the southeastern corner of the county. The **Sunny Valley** pool was found by the Bay Petroleum Corporation No. 1 Schartz well in sec. 7, T. 20 S., R. 12 W. A porous zone in the Kansas City- Lansing limestone yields the oil. The **Bryant Southeast** pool was found by W. H. Black in sec. 26, T. 20 S., R. 12 W. Here production comes from the Arbuckle dolomite. The **Rolling**

Green East pool discovery was made by the Bay Petroleum Corporation with their No. 1 Krone well in sec. 30 of the same township. Here also oil comes from the Arbuckle dolomite.

The new **Buckbee** pool was opened by the Buckbee No. 1 Robert L. Williams well in sec. 14, T. 20 S., R. 12 W. The well is an Arbuckle producer between 3,352 and 3,360 feet and was rated at 50 barrels of oil per day.

The Mouser Drilling Company opened the **Fransen** pool with its No. 1 Fransen well in sec. 6, T. 20 S., R. 12 W. The well yielded 295 barrels of oil and some gas during tests of zones between the Kansas City-Lansing and the Arbuckle, but the well was finally abandoned as a commercial producer.

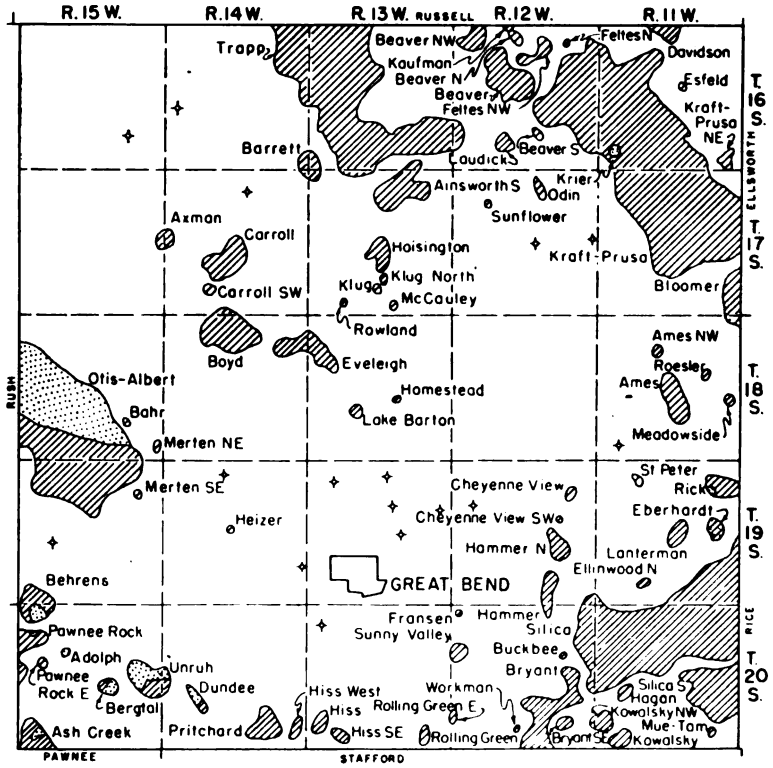

FIG. 5.—Map of Barton County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

TABLE 11.—*Dry wildcat tests drilled in Barton County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Anschutz Drilling Co., Inc. No. 1 Bitter	SW cor. NE¼ 19-16-14W	3,152	3,407	3,452
B & R Drilling, Inc. No. 1 Seidel	NW cor. SE¼ 26-16-15W	3,251	3,504	3,555
The Derby Oil Co. and Peel-Hardman No. 1 Beran	SE cor. SE¼ 13-17-12W	3,046	3,339	3,360
Transit Corp. & Welsh & Olson No. 1 Birzer	NE cor. NW¼ 22-17-12W	3,074	3,362	3,392
A-B-W Drilling Co., Inc. No. 1 Kingston	SE cor. SW¼ 3-17-14W	3,235	3,510	3,555
G. W. Keyes Drlg. Co. et al No. 1 Kimpler	SE cor. NE¼ 31-18-11W	3,120	3,424	3,441
Phillips & Hanson No. 1 Hammeka	SE cor. SE¼ 7-19-12W	3,167	3,431	3,470
H. B. Parker Syndicate No. 1 Soden	SW¼ NE¼ SW¼ 3-19-13W	3,194	3,438	3,481
Nadel & Gussman No. 1 White	SW cor. SW¼ 5-19-13W	3,228	3,462	3,493
Aladdin Petro. Corp. et al. No. 1 Massman	SW cor. SE¼ 10-19-13W	3,186	3,438	3,468
Lohmann Johnson Drlg. Co., Inc. No. 1 Button	NW cor. NE¼ 13-19-13W	3,215	3,478	3,511
Aledo Oil & Gas Co., Inc. No. 1 Wood	NE cor. NE¼ 22-19-13W	3,182	3,417	3,459
Finston & Co. No. 1 Essmiller	NW cor. SE¼ 4-19-14W	3,234	3,532	3,580
Phillips & Hanson No. 1 Koch	SE cor. NE¼ 25-19-14W	3,198	3,481	3,528
Lindas Oil, Inc. No. 1 Behrens	SE cor. NW¼ 20-19-15W	3,308	3,630	3,680
E. H. Adair Oil Co. No. 1 Heminger	SW cor. SE¼ 6-20-13W	3,210	3,488	3,507

At least six tests were drilled into the Pre-Cambrian quartzite and at least one into Pre-Cambrian granite. All these test wells are in the northeastern part of the county in T. 16 S., R. 11 W. and T. 16 S., R. 12 W. In one well 3 feet of Arbuckle overlies the quartzite but in the others no dolomite is left. In one of the wells some Reagan sandstone was found preserved above the quartzite. Very interesting was the finding of commercial quantities of oil in two of the wells. They are the Phillips & Hanson No. 4 Staudinger well in sec. 5, T. 16 S., R. 12 W. and the Phillips Petroleum Company No. 1 Hilgenberg in the same section.

Additions to the older pools include 40 new wells to the **Bryant,** 38 to the **Kraft-Prusa,** 21 to the **Hammer North,** 13 to the **Trapp,** 10 to the **Otis-Albert,** and 9 each to the **Silica** and **Silica South.** Several other pools received fewer new producing wells. No developments of especial significance were brought out by drilling in the older pools, much of which consisted of interior locations.

Table 11 shows the 1949 wildcat wells drilled in Barton County. Pertinent information on production, area, and producing zones is given in Table 44. The oil and gas pools and dry wildcat tests drilled during 1949 are shown on Figure 5.

BOURBON COUNTY

Bourbon County produced 15,374 barrels of oil and approximately 15,356 thousand cubic feet of gas in 1949. Oil production is limited to the western part of the county where there were 5 active fields.

Developments during 1949.—No important exploratory activities in Bourbon County during 1949 were reported. Oil produced was 15,374 barrels.

Reported gas production amounted to 15,356 thousand cubic feet.

Data on water-flood projects in Bourbon County are listed in Table 9. Oil production statistics and other data on oil fields in the county are listed in Table 44. Locations of areas of oil production in 1949 are shown on Plate 1.

A water-flooding project was initiated in the **Hepler** field late in the year.

BROWN COUNTY

Oil production totaled 5,540 barrels in the Livengood field. No gas was produced. No drilling was reported.

Developments during 1949.—No drilling activities in Brown County were reported during the year. The **Livengood** pool, sec. 3, T. 1 S., R. 15 E., which was discovered in 1944, yielded 5,540 barrels of oil during the year, bringing the cumulative production of the field to the end of 1949 to 61,689 barrels of oil.

No gas is produced in Brown County.

BUTLER COUNTY

In 1949, Butler County produced 6,258,017 barrels of oil. Of this amount 3,545,996 barrels came from the El Dorado and Augusta fields, and approximately 443,939 barrels was produced by water-flooding projects; there were 17 projects in operation. Seven oil pools were discovered. Reported drilling includes 173 oil wells, 97 dry holes, and 6 salt water disposal wells. No gas production was reported.

Developments during 1949.—Among the 276 wells drilled in Butler County in 1949, 16 were dry wildcats and 7 were pool discovery wells.

During 1949, Butler County produced 6,258,017 barrels of oil in 51 fields. Water flooding in 17 projects, principally in Pennsylvanian sandstone fields, accounted for approximately 443,939 barrels of oil. The **El Dorado** field, with cumulative production at the end of 1949 of 201,583,990 barrels is the most productive field in Kanas.

Oil production in the various fields in Butler County is shown in Table 44. Plate 1 shows the locations of areas in the county in which oil was produced by primary and secondary methods. Data on water-flooding projects are given in Table 9.

The **Butwick** pool was opened in February 1949 by the J. P. Gaty No. 1 Demoss well, NW¼ SW¼ SW¼ sec. 7, T. 26 S., R. 3 E., whose initial daily production was rated as 3,000 barrels of oil in Mississippian "chat" in a zone between 2,860 and 2,866 feet. One dry hole was drilled. During the remainder of the year 5,234 barrels of oil were marketed from the field.

In April 1949, the **Butwick Northeast** field was opened, when the Penguin Petroleum Inc. No. 1 Holder well, in the SW¼ NW¼ NE¼ sec. 7, T. 26 S., R. 3 E., found oil in Mississippian limestone from 2,804 to 2,840 feet. Initial daily production of 50 barrels of oil was reported. One dry hole was drilled in the field. During the remainder of the year the field produced 2,037 barrels of oil.

The Rex and Morris Drilling Company No. 1 Ammeter well, in the SW¼ SE¼ SW¼ sec. 30, T. 23 S., R. 5 E., was completed in May 1949 as the discovery well of the **Hazlett North** pool. Initial daily production of 35 barrels of oil per day was found in Mississippian limestone from 2,462 to 2,472 feet. During the remainder

TABLE 12.—*Data on pool wells drilled in Butler County during 1949*

Field	No. of oil wells	No. of dry holes
Augusta	23	9
Augusta North	4	
Bausinger		2
Benton		2
Brandt-Sensebaugh		2
Butwick	1	1
Butwick Northeast	3	1
Combs Northeast	1	3
Elbing	1	4
El Dorado*	64	9
Ferrell	2	
Fox-Bush	2	
Haverhill	1	
Hazlett North	11	2
Hickory Creek	6	2
Joseph		2
Kramer-Stern	4	3
Kramer-Stern South		1
Leon	2	1
Long	1	1
Lucas		1
McCaig		2
Parsley	1	3
Pettit	1	
Pierce	2	3
Pontiac		1
Potwin	6	9
Potwin South		1
Reynolds-Schaffer	1	
Robison	5	1
Rombold	1	1
Salter	10	2
Semisch	1	1
Smock-Sluss	1	
Snowden-McSweeney	1	
Stanhope	1	
Towanda**	7	5
Weaver	1	
Whitewater	6	4
Womack	1	2
Young	1	

*Also 5 salt water disposal wells.
**Also 1 salt water disposal well.

of the year 11 wells produced 32,577 barrels of oil. Two dry holes were drilled in the field.

The **Long** field was opened in August 1949 by the Dilworth S. Hager No. 1 Reiserer well in the SW¼ SW¼ NW¼ sec. 15, T. 26 S., R. 7 E. Initial daily production of oil from Mississippian limestone between 2,770 and 2,887 feet was reported as 25 barrels. During the remainder of the year the well produced 348 barrels of oil.

The Rex and Morris Drilling Company et al. No. 1 Parsley well, in the NW¼ SE¼ SE¼ sec. 3, T. 26 S., R. 3 E., is the discovery well of the **Parsley** field, which was opened in January 1949. Three dry holes were drilled in the field. The discovery well, which was rated as having an initial daily production of 45 barrels of oil, produced 15,340 barrels of oil during the remainder of the year.

The **Rombold** field was opened in September 1949 by the K. T. Weidemann No. 1 Rombold well, in the SW¼ SW¼ SW¼ sec. 4, T. 26 S., R. 3 E. Initial daily production, rated as 30 bar-

TABLE 13.—*Data on wildcat tests drilled in Butler County during 1949*

Company and farm	Location	Depth to top of Kansas City, feet	Depth to top of Mississippian, feet	Total depth, feet
E. H. Adair No. 1 Methodist Church	E½ NE¼ NE¼ 14-23-5E	1,870	absent	2,286
E. H. Adair et al. No. 1 Lilley	NE¼ NE¼ SW¼ 15-23-5E	1,865	absent	2,424
Franco-Central & Wixson No. 1 Harder	NE¼ SW¼ SE¼ 21-24-3E	?	2,786	2,870
A. D. Allison & Co. No. 1 Hawes	NW¼ NE¼ SW¼ 7-25-3E	2,360	2,815	2,820
H. & M. Drilling Co. No. 1 Bodecker	NE¼ NE¼ NE¼ 17-25-3E	?	2,769	2,852
H. & M. Drilling Co. No. 1 Truman	SW¼ SE¼ SE¼ 21-25-3E	?	2,781	2,825
H. & M. Drilling Co. No. 1 Bachelder	NE¼ NW¼ NE¼ 28-25-3E	2,333	2,763	3,153
Rex & Morris Drlg. Co. No. 1 Ohlsen	SE¼ SW¼ SE¼ 30-25-3E	2,080	2,805	2,861
Penguin Petro., Inc. et al. No. 1 Anderson	NW¼ NW¼ SW¼ 28-26-3E	2,320	2,776	2,860
El Dorado Refg. Co. No. 1 Waite	SW¼ SW¼ NW¼ 21-26-4E	2,100	2,594	2,612
D. R. Lauck No. 1 Rickard	NE¼ SW¼ SE¼ 8-27-3E	2,368	2,842	3,162
Inland Oil Co. No. 1 Manlove	NW¼ NW¼ NE¼ 9-27-3E	2,335	2,784	3,140
El Dorado Refg. Co. No. 1 Butts	SW¼ SW¼ SE¼ 25-27-7E	2,090	2,826	2,875
Ramsey Petro. Corp. No. 1 Showalter	SW¼ SW¼ SW¼ 4-28-3E	2,379	2,858	3,167
Ramsey Petro. Corp. No. 1 Delibuk	NW¼ NW¼ NE¼ 9-28-3E	?	2,858	3,163
Thrifty Drlg. Co. No. 1 Hines	NW¼ SW¼ SE¼ 7-29-3E	2,475	2,962	3,310

rels of oil per day, was from Mississippian limestone between 2,764 and 2,771 feet. One dry hole was drilled. The discovery well produced 2,249 barrels of oil during the remainder of the year.

The Rex and Morris Drilling Company and E. H. Adair Oil Company No. 1 McCullough well, in the SE¼ SE¼ NW¼ sec. 32, T. 25 S., R. 4 E., opened the **Whitewater** field in April 1949. Production is from the Viola limestone in a zone between 2,645 and 2,656 feet. Initial daily production of the discovery well was reported as 50 barrels of oil. At the end of the year the field had 6 oil wells and 4 dry holes. The year's production from the field was 28,678 barrels of oil.

The seven oil pools found in Butler County in 1949 include 1 Viola pool, 1 "chat" pool, and 5 Mississippian limestone pools. The newly discovered pools are in and on the flanks of the Nemaha anticline. The discovery of so much oil during the year in this area is signfiicant.

Within the year 276 wells were drilled in Butler County. Of these 173 are oil wells, 97 were dry holes, and 6 were drilled for salt water disposal. Sixteen dry wildcat wells are included in the dry hole total. Data on pool wells drilled in Butler County in 1949 are listed in Table 12. Data on dry wildcat test wells are listed in Table 13. Oil production in the various fields is listed in Table 44. The producing areas are shown on Plate 1.

CHASE COUNTY

Oil production totaled 36,918 barrels. Gas production was 59,776 thousand cubic feet. Two active oil fields extend into Chase County from adjoining counties. Four gas fields were active during the year. Nine dry holes were drilled in the county.

Developments during 1949.—Nine dry holes were drilled in Chase County in 1949. Data on these wells are listed in Table 14.

One dry hole was reported in the **Altemus** gas field, 1 dry hole in the **Atyeo** oil field, 3 dry holes in the **Elmdale** gas field, and 2 dry holes in the **Strong City** gas field.

Oil and gas production in the various fields in Chase County during 1949 is shown in Table 44. The total is 36,918 barrels. Locations of areas that produced oil in 1949 and locations of gas fields in Chase County are shown on Plate 1 and Figure 31.

TABLE 14.—*Dry holes drilled in Chase County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of Lansing, feet	Depth to top of Mississippian, feet	Depth to top of Viola, feet	Total depth, feet
Aladdin Petro. Co. No. 1 Altemus	SE¼ SE¼ NE¼ 26-18-8E	1,308	1,535	2,524	2,987	3,252
Amerada Petro. Corp. No. 1 Childs	NE¼ NW¼ NW¼ 24-19-7E	1,198	1,147	absent	absent	1,918
Amerada Petro. Corp. No. 1 Jensen	NE¼ NE¼ NE¼ 24-19-7E	1,192	1,191	absent	1,887	2,165
Amerada Petro. Corp. No. 1 Lostutter	NE¼ NE¼ NE¼ 1-20-7E	1,425	1,532	absent	2,282	2,825
Amerada Petro. Corp. No. 1 Starkey	SE¼ SE¼ SE¼ 14-20-7E	1,426	1,749	2,698	3,144	3,176
Amerada Petro. Corp. No. 1 Lostutter "A"	NW cor. Lot 7 6-20-8E	1,324	1,622	2,644	2,984	3,242
Aylward & Seibel No. 1 Hindren	S½ SW¼ SW¼ 15-21-6E	1,341	1,955	2,780		3,497
Amerada Petro. Corp. No. 1 Heter	NW¼ NW¼ NE¼ 4-21-7E	1,458	1,744	2,670		2,977
Ward McGinnis No. 1 Atyeo	S½ SE¼ SE¼ 36-21-9E		?	2,322		2,384

Gas production in Chase County in 1949 was as follows: 5 wells in the Elmdale field and 3 wells in the **Lipps** field produced 10,500 thousand cubic feet; 29 wells in the **Davis** field produced 49,276 thousand cubic feet. Gas from 2 wells in the **Hymer** field and 1 well in the Altemus field was used locally.

CHAUTAUQUA COUNTY

Oil production totaled 806,839 barrels. There were 16 active oil fields and 7 active water-flood projects.

Developments during 1949.—Data on most of the drilling that was done in Chautauqua County in 1949 are not available. One oil well and one salt water disposal well were reported drilled in the Chautauqua part of the **Peru-Sedan** field.

During the year Chautauqua County produced 806,839 barrels of oil. Of this amount approximately 57,174 barrels was produced by water flooding. There were six water-flood operations in the **Peru-Sedan** field, one of which was abandoned during the year, and one in the **Elgin** field.

Oil production statistics and other data on Chautauqua County fields are shown in Table 44. Locations of areas of oil

production by primary and secondary methods are shown on Plate 1. Additional data on water-flood projects are listed in Table 9. No gas production was reported.

CLAY COUNTY

Wildcat wells have been drilled in Clay County from time to time, but so far no producing pool has been discovered.

Exploration during 1949.—One dry wildcat test well was drilled in Clay County in 1949. It is the El Capitan Oil Company No. 1 Crawford well in the SE¼ SE¼ SW¼ sec. 1, T. 7 S., R. 5 E., which was completed in August. The total depth is 3,255 feet. The following tops were reported: Kansas City limestone, 1,691 feet; Mississippian limestone, 2,138 feet; "Hunton" limestone, 2,353 feet; Maqueketa shale, 2,785 feet; Viola limestone, 2,838 feet; Simpson formation, 3,079 feet; Arbuckle rocks, 3,114 feet; quartzite (Pre-Cambrian), 3,162 feet. The surface elevation of the well is 1,411 feet.

According to Geological Survey records only 14 test wells had been drilled previously in Clay County.

COFFEY COUNTY

Oil production totaled 85,551 barrels. Twenty-three wells were drilled, 11 are oil wells; 12 are dry holes. All reported drilling was within field boundaries.

Developments during 1949.—During 1949, one dry hole was drilled in the **Carter** field, NW¼ SE¼ SE¼ sec. 17, T. 22 S., R. 14 E.; 1 dry hole in the **Evans** field, SE¼ SE¼ SE¼ sec. 17, T. 23 S., R. 15 E.; and 3 dry holes in the **Hatch** field, sec. 35, T. 21 S., R. 13 E. and sec. 2, T. 22 S., R. 13 E. These fields have not been producing for several years. Two dry holes were drilled in the Coffey County part of the **Dunaway** field, four oil wells and one dry hole in the Coffey County part of the **Virgil North** field, and 2 oil wells and 2 dry holes in the Coffey County part of the **Winterscheid** field.

During 1949, Coffey County produced 85,551 barrels of oil. Production and other data are shown in Table 44; areas that produced oil in 1949 are shown on Plate 1.

COWLEY COUNTY

Oil production totaled 2,114,879 barrels. Two oil fields, 1 oil and gas field, and 1 gas field were opened in Cowley County in 1949. One dry wildcat well was reported. Of 59 wells reported 28 are oil wells; 27 dry holes; 3 are gas wells, and 1 is a salt water disposal well.

Developments during 1949.—The oil and gas pools that were discovered in Cowley County in 1949 are in Pennsylvanian rocks in the western part of the Cherokee basin. They are listed in Table 5.

The **Mansur** oil and gas field was opened in September when the G. T. Lackey No. 1 Mansur well, in the NW¼ NW¼ SE¼ sec. 25, T. 31 S., R. 6 E., found gas in the "Layton sand" at 2,170 feet and in Kansas City limestone at 2,470 feet. Initial daily production was reported as 1,180 thousand cubic feet. Two oil wells were drilled later. Oil production is from the "Layton sand" at 2,170 feet. In 1949, the field produced 1,496 barrels of oil.

The **New Salem** gas pool was discovered in June when the Earl F. Wakefield and Bridgeport Oil Company, Inc. No. 1 "B"

TABLE 15.—*Data on pool wells drilled in Cowley County during 1949*

Field	No. of oil wells	No. of dry holes
Baird East		1
Biddle		1
Box	1	1
Burden		3
Couch	1	
David	1	
Deichman	3	3
Eastman		2
Esch		1
Ferguson Northwest	1	
Frog Hollow	1	1
Graham	3	1
Mansur	2 (1 gas)	
New Salem	(2 gas)	1
Otto	1	1
Rahn Northeast	1	
Rainbow Bend	1	
Rainbow Bend West	1	1 (salt water disposal)
Rock	6	3
State	1	
Stayton	1	
Thurlow	3	
Tisdale gas area		2
Trees		1
Wilmot-Floral		3
Wilson		1

Roberts well, SE¼ SE¼ SE¼ sec. 21, T. 31 S., R. 5 E., found gas in the "Layton sand" between 2,295 and 2,309 feet. Initial daily production was reported as 1,500 thousand cubic feet. One additional gas well and 1 dry hole were drilled later in the year.

The K. T. Wiedemann No. 1 Stayton well in the SW¼ SW¼ NW¼ sec. 32, T. 32 S., R. 4 E., is the discovery well of the **Stayton** oil pool. Production is from the "Bartlesville sand" at 3,122 feet. The well, which was completed in June, produced 1,302 barrels of oil during the remainder of the year.

One dry wildcat test well, the H. D. Amos and Thrifty Drilling Co. No. 1 Wilson, NE¼ NE¼ NW¼ sec. 16, T. 30 S., R. 6 E., was drilled in 1949. The total depth is 2,926 feet. Depths to tops of formations were reported as follows: Kansas City group, 2,206 feet; Mississippian limestone, 2,906 feet.

The **Rahn Northeast** pool, in the "Bartlesville" in a zone from 2,902 to 2,934 feet, was discovered in May by the Woods Drilling Company No. 1 Fry well, in the SW¼ NW¼ SW¼ sec. 27, T. 33 S., R. 6 E. Initial daily potential was rated as 120 barrels of oil. During the remainder of the year the discovery well yielded 4,629 barrels of oil.

Oil production and other data concerning Cowley County oil fields are shown in Table 44. Locations of areas that produced oil in 1949 and locations of active water-flooding projects are shown on Plate 1. Data on pool wells drilled during 1949 are given in Table 15.

Eight water-flooding projects operating in 1949 produced 263,893 barrels of oil (Table 9).

CRAWFORD COUNTY

Crawford County produced 61,324 barrels of oil. There were 6 active oil fields and 2 water-flooding projects operating.

Developments during 1949.—During 1949 Crawford County produced 61,324 barrels of oil. As shown in Table 9, there was one water-flooding project in each of two fields. There were six active oil fields but the **McCune** field yielded more than 73 percent of the county's oil production.

About 100 wells of various kinds were drilled during the year. Most of the drilling activity was in the **Walnut** field. One new oil well was drilled in the **Chetopa** field.

Locations of areas that produced oil by primary and secondary methods in 1949 are shown on Plate 1. Data on Crawford County oil fields and their production are listed in Table 44. Water-flooding data are included in Table 9.

DECATUR COUNTY

Wildcat wells have been drilled in Decatur County from time to time, but so far no producing pool has been discovered.

Developments during 1949.—The one test well drilled in Decatur County during the year is the Glenn Nye et al. well on the Anderson farm in sec. 32, T. 4 S., R. 29 W. with a total depth of 4,115 feet. A small show of dead oil was found in a porous zone of the Kansas City-Lansing limestone when a drill stem test was made between 3,935 and 3,953 feet. The elevation of the well is 2,795 feet.

DICKINSON COUNTY

Oil production totaled 202,070 barrels. There were 4 active oil fields. Thirteen wells were reported drilled in Dickinson County in 1949.

Developments during 1949.—Oil is produced in Dickinson County in the **Lost Springs** area in the southeastern part from Mississippian "chat" and the upper few feet of Mississippian limestone; and in the **Bonaccord** field in the western central part of the county. The Bonaccord pool produces from the "Burgess sand."

Dickinson County produced 202,070 barrels of oil in 1949. Locations of areas in the county that produced oil last year are shown on Plate 1; and production and other data on the fields are listed in Table 44.

During the year 8 oil wells, 4 dry holes, and 1 salt water disposal well were drilled in the Dickinson County part of the Lost Springs field. One old well was worked over in the **Lost Springs Northeast** field.

DOUGLAS COUNTY

Oil production totaled approximately 4,000 barrels of oil in the Baldwin field in the southeastern part of the county. A small amount of gas was produced.

Developments during 1949.—One dry wildcat test well was drilled in Douglas County in 1949. It is the G. J. Neuner et al. No. 1 Emmitt, Cen. SE¼ NW¼ sec. 6, T. 14 S., R. 18 E. The total depth is 2,832 feet. Depths in feet to the tops of various formations are: Mississippian limestone, 1,638; Chattanooga shale, 1,888; Devonian, 1,959; Viola limestone, 2,050; St. Peter sandstone, 3,151; Arbuckle rocks, 2,225; Lamotte sandstone, 2,810; Pre-Cambrian granite, 2,825. The surface elevation of the well is 1,075 feet.

During the year a relatively small amount of gas was produced chiefly from the **Eudora** area. The **Baldwin** field produced approximately 4,000 barrels of oil. Production in the Baldwin field is from the "Squirrel sand."

EDWARDS COUNTY

The 1949 production of the two gas pools was 903,166 thousand cubic feet. No oil was produced. Wells drilled during 1949; oil none, gas 1, dry 2, total 3, including 1 wildcat. There were no new pool discoveries.

Developments during 1949.—Of the three test wells drilled in Edwards County during the past year one, a new gas well, was

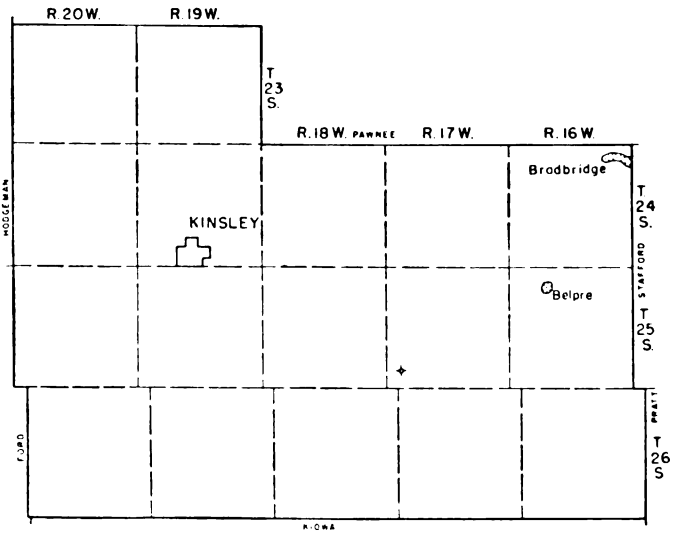

FIG. 6.—Map of Edwards County showing the gas pools and the dry wildcat test drilled during 1949.

completed in July on the Klein farm in sec. 2, T. 24 S., R. 16 W. The test was drilled from an elevation of 2,052 feet through the entire Pennsylvanian sequence into the Pre-Cambrian granite; it had a good show of gas between 3,618 and 3,672 feet where production was later obtained. The initial potential was 6 million cubic feet of gas per day.

Near the **Belpre** pool the B & R Drilling, Inc. completed a test on the Massey farm in sec. 9, T. 25 S., R. 16 W. which had a good show of gas between 3,774 and 3,782 feet and a small show of oil at 3,808 feet. However, the showing was not sufficient to make a commercial well and the test was abandoned at 3,841 feet near the base of the Kansas City-Lansing sequence. The elevation of the hole is 2,083 feet.

In the abandoned **McCarty** pool the Virginia Drilling Company, Inc. completed a test well on land owned by the Home State Bank. It found water in the Kinderhookian rocks which produced gas in the other wells of this pool. The well, starting at an elevation of 2,142 feet, topped the anhydrite at 1,220 feet, the Kansas City-Lansing at 4,042 feet, and the Mississippian at 4,570 feet. The test was abandoned at 4,617 feet.

Figure 6 shows the two gas pools in the county and Table 44 shows their productions and areas.

ELK COUNTY

Elk County produced 198,069 barrels of oil in 1949. About 529,781 thousand cubic feet of gas was produced. There were 18 active oil fields and 1 reported water-flooding project operating.

Developments during 1949.—No important developments during the year were reported from Elk County. Data on the number of wells drilled are not available. A water-flood project was operated in the **Gardner** field. Of the 198,069 barrels of oil produced in the county, approximately 5,543 barrels were produced by water flooding.

Oil production and other data regarding Elk County oil fields are listed in Table 44. Locations of areas of primary and secondary recovery are shown on Plate 1. Water-flooding data are listed in Table 9. The county produced approximately 529,781 thousand cubic feet of gas largely in the **Bush-Denton** and **Schrader** fields.

ELLIS COUNTY

The 1949 production from 49 pools was 10,556,821 barrels of oil and no gas. Wells drilled during 1949: oil 101, gas none, dry 87, salt water disposal 1, total 189 including 27 wildcats. Ten new oil pools were discovered. Four pools were combined, none was abandoned or revived.

Developments during 1949.—Although drilling activity was on a somewhat reduced scale during 1949, wildcat wells found 10 new oil pools. These are shown on Figure 7. In the northeastern township the J. M. Huber Corporation and Crowe Drilling Company, Inc. drilled a test well on the Chrisler farm in sec. 22, T. 11 S., R. 16 W. to the Arbuckle dolomite which was dry. The well was plugged back to a porous zone in the Kansas City-Lansing limestone at 3,100 to 3,112 feet where it was completed. Both oil and water came into the hole. The new pool was named the **Chrisler.** Fifteen miles farther west and very close to the Burnett Northwest pool the ElDorado Refining Company et al. drilled a successful test well into the Arbuckle dolomite on the Meistrell farm. The discovery well, rated at 190 barrels of oil per day, is in sec. 3, T. 11 S., R. 18 W. The pool was named the **Meistrell.** The new **Warren** pool is located in sec. 12, T. 11 S., R. 20 W. some distance from any other producing area. It was found in October by The Derby Oil Company and N. Appleman Company. The discovery well, the No. 1 "A" Warren, was drilled to the Arbuckle, then plugged back to a porous zone in the Kansas City-Lansing limestone. With a potential capacity of 390 barrels of oil per day the well yields about 16 percent water. The **Emmeram Northeast** pool was discovered by E. H. Adair Oil Company in sec. 27, T. 12 S., R. 16 W. with the Froelich No. 1 well. The Arbuckle dolomite produces the oil at the rate of 203 barrels per day from 3,541 feet.

Ten miles northeast of Hays two pools were found in T. 13 S., R. 17 W. The discovery well of one of these, the **Catharine Townsite** pool, is The Texas Company No. 1 Karlin well in sec. 9. This location is only about 1 mile southwest of the Catharine pool. The new **Reed** pool is located a very short distance west of the Catharine Northwest pool in sec. 5. Here oil was found in the Kansas City-Lansing limestone when W. L. Hartman and J. B. Hinkle completed their No. 1 Reed well.

A rank wildcat test drilled about 4 miles southeast of Victoria by Armer Drilling Company, Inc. in sec. 21, T. 14 S., R. 16 W.

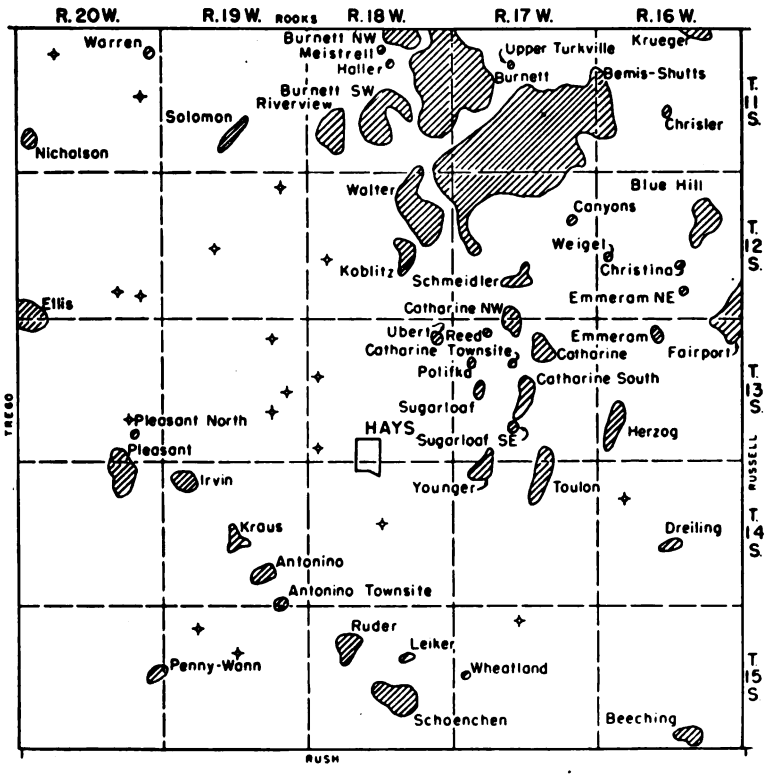

FIG. 7.—Map of Ellis County showing oil pools and dry wildcat tests drilled during 1949.

brought in the new **Dreiling** pool. Oil was found in the Arbuckle dolomite and the capacity of the new well is 173 barrels per day. In the southern part of the county, the Alpine Oil and Royalty Company, Inc. opened the new **Wheatland** pool with their Leiker No. 1 well in sec. 18, T. 15 S., R. 17 W. The Arbuckle dolomite is the producing zone. The new **Antonino Townsite** pool is located in T. 15 S., R. 19 W. The discovery, an Arbuckle well rated at 182 barrels of oil with 50 percent water, was found by Peel-Hardman in sec. 2 on the Haas farm.

The **Christina** pool is a Petroleum, Inc. discovery in sec. 22, T. 12 S., R. 16 W. The pool opener is the No. 1 Froelich well, with an initial potential of 195 barrels per day from the Kansas City-Lansing.

Among the new oil wells drilled in this county during the year are 10 in the **Krueger** pool and 11 in the **Bemis-Shutts**. Some of nine wells added to the **Burnett Southwest** pool produce from the Arbuckle, some from the Kansas City-Lansing, and one from the

TABLE 16.—*Dry wildcat tests drilled in Ellis County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Francis Oil & Gas, Inc. No. 1 Fisher	NW cor. NE¼ 8-11-20W	3,348	3,656	3,715
N. Appleman, Peel-Hardman No. 1 Baldwin	SW cor. SW¼ 13-11-20W	3,281	3,663	3,710
Anschutz Drlg. Co., Inc. No. 1 Furthmyer	NE cor. SE¼ 19-12-18W	3,453		3,924
Brunson Drlg. Co., Inc. No. 1 Weigel	NE cor. SE¼ 2-12-19W	3,367	3,643	3,688
Brunson Drlg. Co., Inc. No. 1 Wann & Harwood	NW cor. NW¼ 21-12-19W	3,488	3,853	3,885
C. L. McMahon & W. L. Hartman No. 1 Kroeger	SW cor. SW¼ 26-12-20W	3,514	3,897	3,927
Jones, Shelburne & Farmer, Inc. No. 1 Weisner	NW cor. NW¼ 36-12-20W	3,494	3,917	3,945
Virginia Drlg. Co., Inc. et al No. 1 Miller	SE cor. NW¼ 18-13-18W	3,476	3,821	3,851
Anschutz Drlg. Co., Inc. No. 1 State	SE cor. NW¼ 31-13-18W	3,361	3,746	3,785
Aylward Drlg. Co., and T. B. Dirickson No. 1 Bittel	SW cor. SE¼ 2-13-19W	3,461	3,758	3,793
Virginia Drlg. Co., Inc. No. 1 Krueger	SW cor. SE¼ 23-13-19W	3,376	3,696	3,750
Virginia Drlg. Co., Inc. No. 1 Schenk	NW cor. NW¼ 24-13-19W	3,360	3,672	3,708
Great Lakes Carbon Corp. No. 1 Kuhn	NW cor. SW¼ 8-14-16W	3,216	3,458	3,508
Deep Rock Oil Corp. and R. W. Rine Drlg. Co. No. 1 Binder	NW cor. SW¼ 15-14-18W	3,292	3,640	3,670
Lindas Oil, Inc. No. 1 Phillips	SW¼ SE¼ NE¼ 4-15-17W	3,205	3,491	3,510
Aylward Drlg. Co. and T. B. Dirickson No. 1 Moore	SE cor. SW¼ 5-15-19W	3,353	3,688	3,741
Jones, Shelburne & Farmer, Inc. No. 1 Gabel	SW cor. SW¼ 10-15-19W	3,324	3,655	3,713

Shawnee limestone. The four new wells drilled between the **Solomon** and **Solomon Northeast** pools were so spaced that the Nomenclature Committee combined the pools, dropping the name Solomon Northeast. The **Younger North** pool also was combined with the **Younger** pool. Twelve producers were added to the **Catharine** pool mostly in the south end. Several new Arbuckle wells drilled between the **Schoenchen** and the **Madden** pools proved the two pools to be a single reservoir. The name Madden has, therefore, been abandoned.

Oil pools and 1949 wildcats in Ellis County are shown on Figure 7. Pertinent information on the pools is given in Table 44. Dry wildcat wells are listed in Table 16.

ELLSWORTH COUNTY

The 1949 production from 10 active pools was 4,161,907 barrels of oil and 126,467 thousand cubic feet of gas. Wells drilled during 1949: oil 28, gas none, dry 15, salt water disposal 6, total 49 including 1 wildcat. One new oil pool was discovered; none was revived or abandoned.

Developments during 1949.—Although little wildcat drilling was done in Ellsworth County, testing of the area just southwest of the Stoltenberg pool resulted in a new discovery, the **Palacky** pool. The J. D. Ferrell Drilling Company, Inc. successfully completed their test on the Rous farm in sec. 31, T. 16 S., R. 10 W. as a 48-barrel well in a zone 4 feet thick in the Arbuckle dolomite. One additional producer and one dry hole were completed in the new pool before the close of the year.

Routine drilling in established fields developed a considerable amount of new oil. In the **Stoltenberg** pool 13 oil wells were completed. Five of the 14 nonproducers drilled in this pool were finished as salt water disposal wells at various depths in the Arbuckle dolomite. One of these, drilled by the Gulf Petroleum Corporation on the Mehl farm, penetrated 536 feet of the Arbuckle before reaching the Pre-Cambrian. Two additional tests reached the Pre-Cambrian: the H. V. Elwell No. 5 Lanzl in sec. 20, T. 16 S., R. 10 W., and the B & R Drilling, Inc. No. 2 Siemsen well in sec. 3, T. 17 S., R. 10 W. In both wells the Arbuckle is approximately 440 feet thick. The Arbuckle dolomite is entirely absent from the sequence of beds at many points in the near-by Kraft-Prusa pool, only 5 or 6 miles west of these tests.

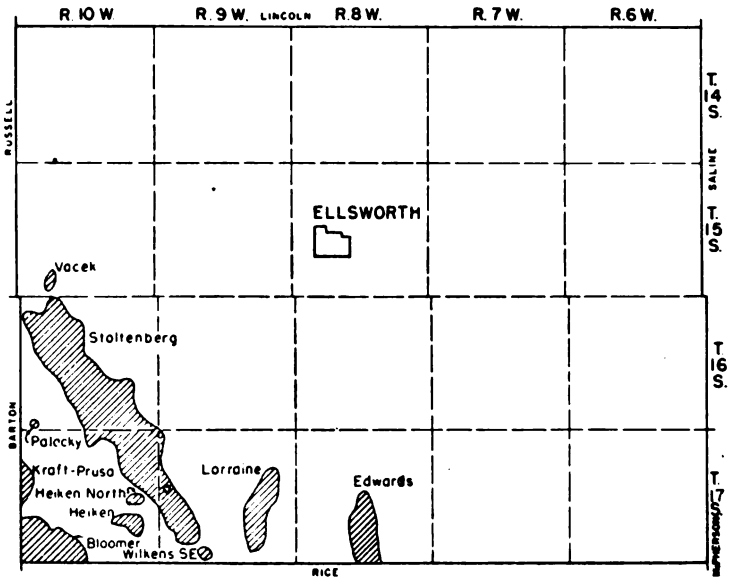

FIG. 8.—Map of Ellsworth County showing oil and gas pools. (Gas, dots; oil, diagonal lines.)

Two new oil wells were completed in the **Edwards** pool. The **Lorraine** pool was enlarged by the addition of six oil wells. One of the dry holes in this pool was deepened 430 feet into the Arbuckle dolomite to provide a salt water disposal well (Elreco No. 4 Preuss). In the **Bloomer** pool four new oil wells were added.

Oil and gas pools of Ellsworth County are shown on Figure 8. Other pertinent data concerning them are given in Table 44.

FINNEY COUNTY

The 1949 production from the one active oil pool was 253,831 barrels; gas production of the Hugoton field is not segregated as to counties. Wells drilled during 1949: oil 3, gas 70, dry 1, total 74 (no wildcats). No new pools were discovered.

Developments during 1949.—One of the actively prospected areas in western Kansas during 1949 was Finney County. In the **Nunn** pool one new gas well and three new oil wells were completed and one old well was worked over for an oil producer. Oil production is from the Altamont limestone in the upper part of the Marmaton group. The gas well produces from the usual zones

of the Hugoton field and may be considered an outpost well of that large gas area.

Farther south in Finney County 69 gas wells were completed. They are relatively small producers in the northern part of the area, but their size improves progressively toward the south and the southwest. The largest producer found during 1949 was rated at 37 million cubic feet of gas per day and was drilled by the Magnolia Petroleum Company in sec. 21, T. 26 S., R. 34 W. on the Brown ranch.

The Hugoton map (Pl. 2), shows pools and well locations. Oil and gas production and other data on the pools are given in Table 44.

FORD COUNTY

Wildcat wells have been drilled in Ford County from time to time, but at present there is no active pool in the county. Two dry wildcat wells were drilled during 1949.

Developments during 1949.—One of the two wildcat wells drilled during the year was by Francis Oil and Gas, Inc. on the Wiseman farm in sec. 5, T. 26 S., R. 24 W. Drilled from an elevation of 2,524 feet the anhydrite was topped at 1,629 feet, the Howard at 3,744 feet, the Topeka at 3,829 feet, and the Kansas City-Lansing at 4,269 feet. A gas show was recorded between 4,366 and 4,368 feet, but the well was abandoned at 4,380 feet, about 111 feet below the top of the Kansas City-Lansing.

The second wildcat test, at an elevation of 2,420 feet, was drilled by the Continental Oil Company on the Crouse farm in sec. 29, T. 27 S., R. 22 W. The Kansas City-Lansing was entered at 4,340 feet and the Mississippian at 5,000 feet. Several drill stem tests were made before the well was abandoned at a total depth of 5,250 feet.

FRANKLIN COUNTY

Oil production totaled 255,767 barrels. Of this amount about 163,753 barrels was produced by water-flooding methods. Five water-flooding projects were in operation in the county.

Developments during 1949.—Of the 255,767 barrels of oil produced in 1949 in Franklin County, 163,753 barrels was produced in the five water-flooding projects operating in the county. Data

on the projects are listed in Table 9. Locations of areas of primary and secondary oil production in the various Franklin County fields are shown on Plate 1. Oil production and other statistics on the various fields are shown in Table 44.

No important wildcat wells in Franklin County were reported.

Water-flood projects.—The "Squirrel sand" was repressured in five water-flooding projects in the **Paola-Rantoul** field in 1949.

GEARY COUNTY

Wildcat wells have been drilled in Geary County from time to time, but so far no producing pool has been discovered.

Developments during 1949.—The Pay Rock Oil Company, Inc., No. 1 Whittaker, in the E½ NE¼ NE¼ sec. 9, T. 12 S., R. 6 E., was completed in September 1949. The total depth is 2,658 feet. Depths to the following "tops" were reported: Lansing group, 1,460 feet; Kansas City group, 1,560 feet; Marmaton group, 1,740 feet; "conglomerate," 1,919 feet; Mississippian limestone, 1,943 feet; Kinderhookian, 2,019 feet, "Hunton" limestone, 2,182 feet; Maquoketa shale, 2,529 feet; Viola limestone, 2,636 feet. The surface elevation of the well is 1,307 feet.

The H. H. Hetzer No. 1 Sullivant, NE¼ NE¼ NE¼ sec. 36, T. 13 S., R. 5 E., was completed at a total depth of 3,043½ feet in May 1949. This well seemingly encountered Pre-Cambrian rocks at 1,330 feet. The surface elevation of the well is 1,345 feet. Locations of these wildcats are shown on Figure 31.

According to Geological Survey records only 13 wells had been drilled previously in Geary County. Hence the county is very inadequately tested.

GRAHAM COUNTY

The 1949 production from 13 pools was 1,499,548 barrels of oil and no gas. Wells drilled during 1949: oil 26, gas none, dry 29, total 55 including 14 wildcats. Five new oil pools were discovered; none was abandoned or revived.

Developments during 1949.—Wildcat drilling in Graham County, limited to the eastern half, found five new pools in Ts. 9 and 10 S., R. 21 W. They are the Morel East, Morel West, Morlan, Muilenburg, and Teall. The **Teall** pool was found by the **Armer** Drilling Company, Inc. No. 1 Teall well in sec. 9, T. 10 S., R. 21 W.

This well is rated at 32 barrels of oil per day and a little water. The test was drilled into the Arbuckle dolomite, then plugged back and completed in a porous zone in the Kansas City-Lansing limestone between 3,528 and 3,534 feet. In this part of the county there is a thin wedge of Simpson above the Arbuckle dolomite. The **Muilenburg** pool, 1 mile west of the Palco pool in adjoining Rooks County, was discovered by D. G. Hansen who found production in the Arbuckle dolomite on the Muilenburg farm in sec. 1, T. 10 S., R. 21 W. Initial production was 155 barrels per day. The new **Morlan** pool, 1½ miles southwest of the Muilenburg pool, is in sec. 23, T. 10 S., R. 21 W. The Derby Oil Company and Glenn W. Peel Drilling Company, Inc. opened the pool with a 159-barrel Arbuckle well on the Lewis farm.

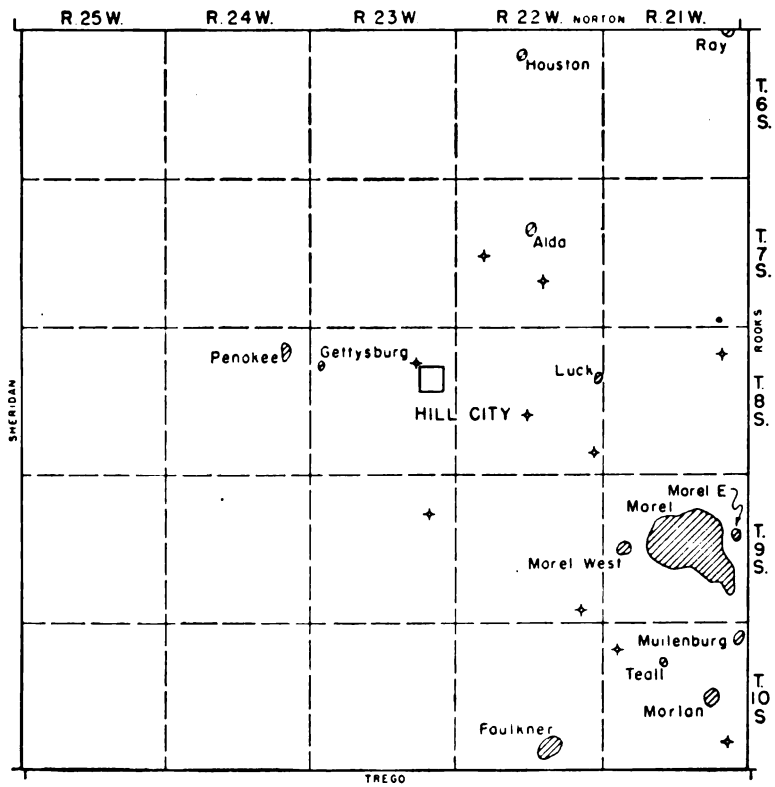

FIG. 9.—Map of Graham County showing oil pools and dry wildcat tests drilled during 1949.

TABLE 17.—*Dry wildcat tests drilled in Graham County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Sam Pack & Braden Greene No. 1 Smith	NW cor. NW¼ 20-7-22W	2,317	3,546	3,913	3,993
D. G. Hansen No. 1 Deprod	NW cor. NE¼ 27-7-22W	2,220	3,447	3,756	3,777
Heathman Drlg. Co., Inc. No. 1 Sayers	NE cor. NE¼ 11-8-21W	1,968	3,216	3,499	3,528
Westgate-Greenland Oil Co. No. 1 Scott	NE cor. SE¼ 21-8-22W	2,176	3,439	3,821	3,855
J. W. Braden Drlg. Co. et al. No. 1 De Baer	NW cor. NE¼ 36-8-22W	2,147	3,365	3,722	3,732
Cities Service Oil Co. No. 1 Gustafson	SW cor. NW¼ 36-9-22W	2,340	3,577	4,004	4,035
Virginia Drlg. Co., Inc., & Aladdin Petro. Corp. No. 1 Jones	NE cor. SE¼ 11-9-23W	2,351	3,645	4,097	4,125
R. W. Rine Drlg. Co. et al. No. 1 McClellan	NW cor. NE¼ 7-10-21W	2,298	3,554	3,912	3,950
Petroleum, Inc. No. 1 White	SW cor. SW¼ 25-10-21W	2,162	3,460	3,777	3,795

Two additional new pools, the **Morel East** and **Morel West,** were opened during the year. The former was discovered by the No. 1 Balthazor well in sec. 13, T. 9 S., R. 21 W., the latter by the No. 1 "B" Sutor well in sec. 18, T. 9 S., R. 21 W. Both were maximum wells.

One new oil well was completed in the **Ray** pool, most of which lies in adjoining Phillips County. In this well, drilled by W. L. Hartman on the Lappin farm in sec. 1, T. 6 S., R. 21 W. the oil occurs in granite wash. In the **Penokee** pool one additional well was completed and the **Morel** pool was extended by 13 wells.

Oil and gas pools and dry holes are shown on Figure 9. Pertinent data concerning the pools are given in Table 44. Dry wildcat wells drilled during 1949 are listed in Table 17.

GRANT COUNTY

The county lies entirely within the Hugoton gas field, the production of which is not segregated as to counties. No oil was produced. Wells drilled during 1949: oil none, gas 88, dry none.

Developments during 1949.—The average initial production of the 88 new gas wells was approximately 13 million cubic feet per day. The largest of the new wells was drilled by the Magnolia Petroleum Company on the Findley unit in sec. 33, T. 27 S., R. 36 W. It was assigned an initial daily production of 41.8 million cubic feet of gas. In this well 42,000 gallons of acid was used to create extended porosity in the various limy layers of the Chase group which produce in the field. Two other new wells in the county were rated at more than 30 million cubic feet of gas per day. The gas wells in Grant County are shown on Plate 2.

Most of the available locations in the county have now been drilled except T. 29 S., Rs. 37 and 38 W. and T. 27 S., R. 37 W. T. 29 S., R. 37 W. is entirely surrounded by producing wells but has no well in it.

General information regarding the Hugoton field follows the chapter on Hodgeman County. Production, the active area, and producing zones are shown under Hugoton field in Table 44.

GREENWOOD COUNTY

Oil production totaled 5,189,838 barrels. Of this amount 3,433,317 barrels was produced by water-flooding operations. There were 35 water-flooding projects operating in the county. Wells drilled during the year include: 104 oil wells; 47 dry holes; 29 salt water disposal wells. Two dry wildcat wells and 2 pool openers are included.

Developments during 1949.—During 1949, Greenwood County produced 5,189,838 barrels of oil. Of this amount, 3,433,317 barrels was produced by water-flooding operations in 35 projects. Data on water-flooding projects are listed in Table 9. Oil production in the various Greenwood County fields and other data are listed in Table 44. Locations of areas that were productive by primary and secondary recovery methods in the county are shown on Plate 1.

The Ward A. McGinnis No. 1 Eastman well, in the NE¼ NW¼ SE¼ sec. 8, T. 26 S., R. 11 E., completed in June 1949, opened the **Burt** field, with production rated at 30 barrels of oil per day from Mississippian limestone. The producing zone is between 1,865 and 1,878 feet. At the end of the year the field had 5 oil wells and 2 dry

holes. The 5 oil wells had produced 4,995 barrels of oil at the end of the year.

The **Eureka West** field was opened by the Penn-Farr No. 1 Hughes well, in the Cen. S½ N½ SW¼ sec. 33, T. 25 S., R. 10 E., in September. Oil was found in Mississippian rocks in a zone between depths of 1,979 and 1,995 feet. Initial production was reported as 15 barrels of oil per day. No sales of oil were reported during the remainder of the year.

Reported new wells in Greenwood County, drilled in 1949 are as follows: **Demalorie-Souder** field, 2 oil wells, 5 salt water disposal wells; **Dunaway** field, 8 oil wells, 4 dry holes; **Eureka** field, 26 oil wells, 10 dry holes, 1 salt water disposal well; **Hamilton** field, 8 oil wells; **Hinchman** field, 1 oil well; **Lamont** field, 1 oil well, 13 salt water disposal wells; **Quincy** field, 1 oil well, 3 dry holes; **Reece** field, 16 oil wells, 5 dry holes; **Seeley-Wick** field, 8 oil wells, 4 dry holes, 2 salt water disposal wells; **Stanhope** field, 6 oil wells, 1 dry hole; **Toronto** field, 1 oil well and 1 dry hole; **Virgil** field, 7 oil wells, 4 dry holes; **Virgil North** field, 7 oil wells and 1 dry hole; **Willard** field, 6 oil wells.

Additional salt water disposal wells and dry holes reported were: **Browning** field, 2 salt water disposal wells; **Hubbard** field, 1 dry hole; **Beaumont North** field, 1 dry hole; **Jobes** field, 1 dry hole; **Madison** field, 1 dry hole; **Neal** field, 1 dry hole; **Rock Creek** field, 1 dry hole; **Severy North** field, 3 dry holes; **Teeter** field, 1 salt water disposal well; **Thrall-Aagard** field, 5 salt water disposal wells; **Tonovay** field, 1 dry hole.

Data on the two dry wildcat wells and two pool openers drilled in Greenwood County in 1949 are listed in Table 18.

TABLE 18.—*Data on wildcat tests drilled in Greenwood County during 1949*

Company and farm	Location	Depth to top of Kansas City, feet	Depth to top of Mississippian, feet	Total depth, feet	Remarks
Penn-Farr No. 1 Hughes	Cen. N½ SW¼ 33-25-10E		1,979	1,995	Discovery well Eureka West pool
L. F. Reed No. 1 Reed	NW¼ SW¼ SE¼ 28-25-12E	980		1,573	Stopped in Cherokee shale
Ward A. McGinnis No. 1 Eastman	NE¼ NW¼ SE¼ 8-26-11E		1,865	1,878	Discovery well Burt pool
K. T. Wiedemann No. 1 Amerine	NE¼ NE¼ NE¼ 14-27-9E			2,630	Top of Arbuckle at 2,582 feet

Water floods.—Oil produced by water-flooding methods in Greenwood County was reported as 3,433,317 barrels. There were 35 active projects, in all of which the "Bartlesville sand" was repressured (Table 9).

HAMILTON COUNTY

The 1949 production—all from the Hugoton field—is not segregated as to counties. No oil was produced. Wells drilled during 1949: oil none, gas 2, dry 1, total 3 including 1 wildcat. There were no new pool discoveries.

Developments during 1949. — Two of the three test wells drilled in Hamilton County during the year are gas wells located within the area of the Hugoton field. The other is a dry hole drilled by the Bay Petroleum Corporation on the Buhrle ranch in sec. 4, T. 26 S., R. 41 W. It was abandoned at a depth of 6,422 feet after penetrating about 200 feet of the Arbuckle dolomite with only one slight show of gas at 5,340 feet. The cuttings were examined by J. D. Davies of the Kansas Sample Log Service, Wichita. His interpretations follow.

The Day Creek, entered at 835 feet, consists of 10 feet of dolomite above with 32 feet of anhydrite below. The Whitehorse formation is composed of gypsiferous red shales, but the Blaine formation, 125 feet thick, is mostly anhydrite. Alternating beds of halite, red shales, and gypsum make up the Flowerpot shale. The Cedar Hills formation also contains much red shale, but is characterized by the presence of thin beds of amber-colored sandstones. The Salt Plain and Harper formations consist of red shales with considerable salt near the base. The Ninnescah formation is similar and also contains salt. The Wellington is very thin, about 100 feet, and consists of variegated shales. The Herington dolomite is present at 2,425 feet, and some of the other beds of the Chase group can be identified. Members of the Council Grove group are difficult to differentiate.

In the Pennsylvanian System, the Topeka limestone probably is present at 3,402 feet, the black Heebner shale was logged at 3,810 feet, and the Kansas City-Lansing limestone at 3,843 feet. The Marmaton group is mostly limestone, but has some variegated shales at the base. Gray, black, and green shales are prominent in the Morrowan strata, which are well developed. There is con-

siderable glauconitic sandstone in thin layers. The Keyes member (top at 5,300 feet), so important in adjacent Oklahoma, consists of sandy limestone for the most part, although some sandstones and much green shale are present near the base.

The Mississippian rocks are very thick. The uppermost layers belong to the Ste. Genevieve and consist of the typical oölitic limestones in which the oölites have a sand-grain nucleus. The St. Louis lithographic limestones are very thick also. The "Warsaw" is present and below it the cherty layers of the Osagian which occupy about 100 feet of the section. The lowest 100 feet of the Mississippian consists of chert-free limestones in which there are numerous oölitic zones. At the base a sandstone 10 feet thick (probably represents the "Misener,") rests unconformably upon cherty detritus of Viola age. This detrital material in turn rests upon the eroded surface of the Arbuckle dolomite (earliest Ordovician in age). The Cambrian equivalent of the Arbuckle is also present. The top of the Arbuckle was found at 6,195 feet (6,226 feet according to the log of the hole) and the total depth, 6,422 feet, indicates a thickness for the Arbuckle of about 200 feet.

Gas production and area developed are shown under Hugoton field in Table 44. Plate 2 shows the wells drilled and the field boundaries.

HARPER COUNTY

The 1949 production from the county's first pool was 1,424 barrels of oil and no gas. Wells drilled during 1949: oil 1, gas none, dry 5, total 6, all wildcats. One new pool was discovered.

Developments during 1949.—One of the six wildcat tests drilled in Harper County during 1949 was the first oil well in the county. The new pool, the **Grabs**, was opened by the Drillers Gas Company on its Grabs lease in sec. 13, T. 31 S., R. 9 W. The producing zone is the Mississippian where oil was encountered between 4,400 and 4,449 feet. The well was plugged back to 4,414 feet and treated with the new hydrofrac process, probably used for the first time in Kansas. After a considerable period of testing, the well, according to the log, was rated at 32 barrels of 29° gravity oil per day with 14 percent water.

The dry wildcat tests, listed in Table 19, revealed no unusual stratigraphic features. Harper County production and pertinent data are shown in Table 44.

TABLE 19.—*Dry wildcat tests drilled in Harper County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
F. A. Gillespie & Sons Co. No. 1 Weede	NW¼ NE¼ SE¼ 11-31-5W	1,364	3,528	4,749	4,794
Earl F. Wakefield et al. No. 1 Ryan	SW cor. NW¼ 33-31-9W	1,591	3,659		4,767
Deardorf Oil Co. No. 1 Washbam	SW cor. NE¼ 15-32-7W	1,420	3,860	4,942	5,080
Gulf Oil Corp. No. 1 Dent	NE cor. NE¼ 21-32-7W	1,403	3,855	4,994	5,050
F. A. Gillespie & Sons Co. et al. No. 1 Prouse	SE cor. SE¼ 6-34-5W	1,236	3,438	5,160	5,183

HARVEY COUNTY

The 1949 production from 11 pools was 193,666 barrels of oil and 947,033 thousand cubic feet of gas. Wells drilled during 1949: oil 26, gas 8, dry 10, total 44 including 8 wildcats. One new oil pool and 2 new gas pools were discovered. No pools were revived or abandoned.

Developments during 1949.—Wildcat test locations were well scattered over Harvey County. The new **Jones** and the **Jones Northeast** gas pools are located about 1½ miles east of the Burrton pool and about an equal distance from the townsite of Burrton. The first pool was found in January by B & R Drilling, Inc. with its test on the Jones farm in sec. 21, T. 23 S., R. 3 W. Nearly 3 million cubic feet of gas was found in Mississippian strata. During February Westgate-Greenland Oil Company drilled their No. 1 Howard in sec. 15 of the same township and found the second gas pool, the Jones Northeast. It also derives its gas from Mississippian strata. The Howard well, first rated at 29.9 million cubic feet and later described in the log as a 6-million-cubic-foot gas well, led to considerable offset drilling. Three additional gas wells and one dry hole were completed in the new pool before the close of the year.

The third new pool, called the **Jester Creek**, is in sec. 3, T. 24 S., R. 1 E. in the eastern part of the county 4 miles southeast of Newton. Here the Springer & Harper Drilling Company No. 1 Leffelman found oil in the Kansas City-Lansing limestone between

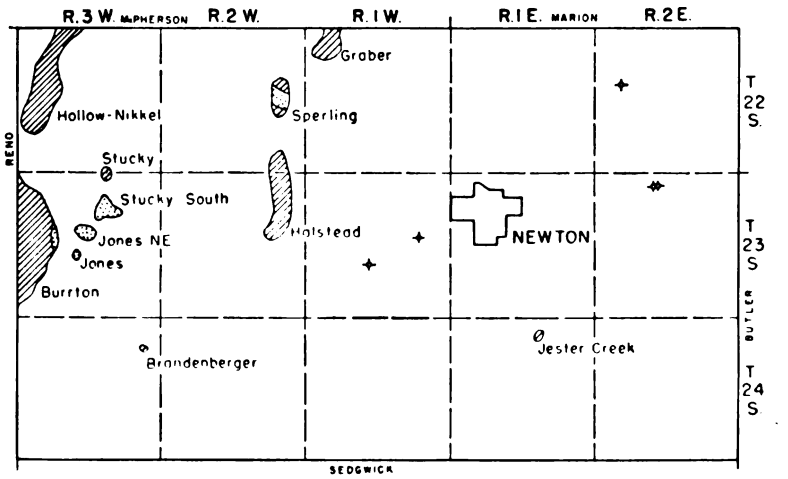

FIG. 10.—Map of Harvey County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

2,687 and 2,692 feet. The well was reported as making 20 barrels of oil and 35 barrels of water per day.

Although the potentials of the 23 new wells along the northeast fringe of the old **Burrton** pool in the northwestern part of the county are relatively small, they add to the reserves of this old pool. All produce from porous zones in the upper part of the Mississippian strata.

Oil and gas pools of Harvey County and pertinent data concerning them are given in Table 44. The locations of pools and wildcat wells are shown on Figure 10. Wildcat wells are listed in

HASKELL COUNTY

The 1949 production—all from the Hugoton gas field—is not segregated as to counties. No oil was produced. Wells drilled during 1949: oil none, gas 41, dry 1, total 42 (no wildcats). There were no new discoveries.

Developments during 1949.—Of the 42 test wells drilled in Haskell County only one was a dry hole; the rest were new gas wells. The dry hole is located in sec. 3, T. 28 S., R. 33 W., about 7 miles inside the east border of the Hugoton field. All the probable producing zones of the field were tested. A good gas well with a

TABLE 20.—*Dry wildcat tests drilled in Harvey County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
C. F. Meyer et al. No. 1 Hess	SW cor. NW¼ 17-22-2E	1,549		3,485	3,545
Greeley Drilling Co. No. 1 Brandiwiede	SW cor. NE¼ 4-23-2E	1,445	2,207		2,456
Greeley Drilling Co. No. 1 Dickey	NE cor. SW¼ 4-23-2E	1,442	2,170		3,205
D. S. Hager No. 1 Hupp	SW¼ NE¼ SE¼ 14-23-1W	1,452	2,310		3,591
Shawver-Graham, Inc. et al. No. 1 Pierce	SW cor. SE¼ 21-23-1W	1,416	2,310	3,655	3,693

potential capacity of 7.9 million cubic feet per day was drilled in sec. 9, T. 28 S., R. 32 W., about 6 miles east of the dry hole.

The map of the Hugoton gas field, (Pl. 2) shows that all the 1949 activity in the county was in two spots. In the northern one, centered around T. 27 S., R. 34 W., the average production of the new wells is about 10 million cubic feet with the exception of the Magnolia Petroleum Company well drilled in sec. 5, T. 27 S., R. 33 W. which was assigned a potential capacity of more than 30 million cubic feet per day. In completing the well, 35,000 gallons of acid was used.

In the southern spot, centered around the town of Satanta, the average production of the new wells is nearly 14 million cubic feet. The largest well in this area is the LeBosquet & Gillispie No. 1 Anton in sec. 23, T. 30 S., R. 34 W. It has a capacity of 35.4 million cubic feet per day after acidizing with 23,000 gallons.

Additional information about the Hugoton field is given after Hodgeman County.

Production, the active area, and producing zones are shown under Hugoton field in Table 44.

HODGEMAN COUNTY

Wildcat wells have been drilled in Hodgeman County from time to time, but so far no pools have been discovered. One dry hole was drilled during 1949.

Developments during 1949.—The one test made in Hodgeman County during 1949 was by The Texas Company on the Nuss farm in sec. 24, T. 22 S., R. 25 W. Tops picked from examination of the samples are: Stone Corral dolomite, 1,640 feet; salt, 2,100 feet; Kansas City-Lansing limestone, 3,988 feet; Mississippian rocks, 4,620 feet; Viola dolomite, 4,888 feet; Simpson, 5,129 feet; and Arbuckle dolomite, 5,151 feet. Drill stem tests were made in two porous zones, but no oil or gas was discovered.

HUGOTON GAS FIELD

General statement.—The Hugoton gas field, with its extension southward across the Oklahoma "strip" and well into the panhandle of Texas, is regarded as containing the largest reserve of natural gas of which the petroleum industry has knowledge. A recent estimate (Keplinger, Wanenmacher, and Burns, 1948) of the gas reserve of the entire field, and the field areas within the three states is shown in Table 21.

Substantial additions to the present area of the Hugoton field will doubtless be made, but it seems probable that the main area of large gas production has been reasonably well outlined. Careful and generous acidizing and improvements in production techniques are expected to be largely responsible for future field extensions and new pool discoveries in southwestern Kansas and in the panhandle country.

The limits of the field are not clearly marked by structural or stratigraphic features. Porosity of the producing members seems to be the main control of productivity. The gas comes from thin, porous, dolomitic rocks of lower Permian age. No oil of consequence has as yet been found within the area of the field although

TABLE 21.—*Natural gas reserves and area of Hugoton gas field*
(By Keplinger, Wanenmacher, and Burns, 1948)

State	Billion cubic feet*	Percent area of field
Kansas	14,051	51.7
Oklahoma	8,034	29.3
Texas	5,372	19.0
Total	27,457	100.0

*Estimated as of October 1948 with pressure base of 14.65 psia. and abandonment pressure of 25 pounds.

a small oil pool, the Richfield, was opened during 1948 on the west boundary of the Hugoton area proper. Origin of the gas is debatable. There is no really important known deposit of oil with which the gas can be related in origin within miles of the Hugoton field. Production may come from one or several zones in the Chase group including the Herington, Krider, Winfield, Fort Riley, and Florence limestones. Most Hugoton gas production comes from a depth of about 2,500 feet.

Wells with initial potentials of less than 1 million cubic feet of gas per day are not likely to be saved by the larger companies; those producing 5 to 15 million cubic feet per day are "usual"; and "big" ones produce 30 million cubic feet or more. The limits of the field are by no means cleancut; production "featheredges" out, making the drawing of the boundaries uncertain. A cut-off of 1 million cubic feet per day—a purely arbitrary figure—has been used as a guide in drawing the field boundary on the Hugoton map (Pl. 2). Smaller wells that are located near the field limits have been left outside the boundary line, although such wells might be regarded as rather valuable if located in eastern Kansas. It is significant that there are several old holes, marked dry, which are located within the main Hugoton area of large gas production and which penetrated well beyond the present producing zones. These were drilled a number of years ago—as long ago as the late 1920's. Modern methods and production techniques now are able to save wells that in former years were unsuccessful. By the same token, one may reasonably prophesy that the presence of dry wildcat wells of former years in many parts of western Kansas may not preclude the presence of important oil and gas pools which may in the future be discovered by modern and scientific methods of exploration and production.

The Hugoton gas field has no forest of derricks, no profusion of visible pipe lines, or oil production gear one sees in most large oil fields. Drilling is done mainly by portable rotary rigs. A traveler through the area may see little but a white painted 6- by 8-foot "dog house" concealing a wellhead in the center of each section. The operators are good housekeepers.

The field is under rigid proration by the Kansas Corporation Commission, Division of Conservation. Only one well may be drilled in each 640 acres, and allowable production for groups of

TABLE 22.—*Average analysis of natural gas from Hugoton field*
(From Keplinger, Wanenmacher, and Burns, 1948)

Gases	Percent
Methane	74.26
Nitrogen	14.27
Ethane	5.81
Propane	3.52
Butane	1.48
Pentane plus	0.65
Total	99.99

wells is established on a monthly basis, in a manner designed to conserve the gas reserve.

Gas from the Hugoton field has desirable quality. It carries about 0.4 gallon of gasoline per 1,000 cubic feet. Average analysis of Hugoton gas as reported by Keplinger, Wanenmacher, and Burns (1948) is given in Table 22.

What many claim to have been the opening well of the Hugoton field was probably not even regarded as a discovery. That first well was drilled in 1922 by the Defenders and Traders Gas Company on the Boles lease in sec. 3, T. 35 S., R. 34 W. in what is now the Liberal gas field. The well, rated at 5 million cubic feet of gas per day, drew attention to the gas possibilities of the general area.

The first well drilled in what is now the Kansas part of the Hugoton field proper, and often referred to as the discovery well, was not drilled until 5 years later, in 1927. It was the No. 1 Crawford well of the Independent Oil and Gas Company, in sec. 31, T. 33 S., R. 37 W. near Hugoton in Stevens County. The well is said to have produced 6 million cubic feet of gas per day. The field developed very slowly, in part because of the distance to consuming centers and in part because of the lack of pipeline facilities. The Argus Pipeline Company is said to have been first in the field with its gas line from Stevens County to Dodge City in 1930 and 1931. After that, drilling picked up somewhat. By 1938, only about 200 wells were in production. At that time, the two largest companies were the Panhandle Eastern Pipeline Company with a gas line to Detroit and other eastern cities, and the Republic Natural Gas Company supplying gas to communities in Kansas, Nebraska, Iowa, and Minnesota. At that time also, the Argus Pipeline Company of Dodge City and the Central Gas Utilities of Abilene, both somewhat smaller companies, were supplying gas to communities

in western Kansas and Colorado. Panhandle Eastern in 1938 had a natural gasoline plant at Arkalon producing 80,000 gallons of gasoline per day, and a subsidiary of the Columbian Fuel Corporation was operating a 6-burner carbon black plant near the town of Hickok in Grant County. In 1938 the producing area of the Hugoton field was about 187,300 acres; in 1942 it contained less than 190,000 acres. By the end of 1947 the area of the field had increased to nearly 2 million acres. Its area is slightly more than 2 million acres now.

It was 20 years after discovery of the field before interest in the big gas reserve became general. By the end on 1942 there were 327 gas wells in the field; 10 and 70 wells, respectively, were added in 1943 and 1944. Then came a great surge in the demand for gas, and field development increased accordingly. Greater demand came in part as a result of wartime technologic developments, and in part because of both domestic and industrial consumers' unhappiness over uncertain availability of solid fuel. The number of wells drilled in the Hugoton field in 1945 was 181, in 1946 it nearly doubled, to 286; and in 1947 the number of wells added was 382. During 1948, 325 wells were added, and during 1949, 405 wells were drilled within the producing area of the field, making a cumulative total of 2,009 wells in the Kansas part of the Hugoton field at the close of 1949. Table 23 shows segregation of wells among the counties.

Developments during 1949.—Two important extensions to the Hugoton field were created by drilling during 1949. One of these was in Morton County where the western field limit was moved westward 6 or 7 miles as a result of two gas wells in secs. 2 and 15, T. 34 S., R. 41 W. These wells came in making 8 and 9 million cu-

TABLE 23.—*Gas wells drilled in Hugoton field by counties*

County	During 1949	Total to date
Finney	70	158
Grant	88	426
Hamilton	2	5
Haskell	41	213
Kearny	71	272
Morton	6	91
Seward	41	91
Stanton	9	136
Stevens	77	617
Total	405	2,009

TABLE 24.—*Production from the Kansas part of Hugoton gas field*

Year	M cu. ft. gas (14.65 psia.)
1938	29,843,417
1939	32,424,301
1940	37,083,797
1941	40,759,482
1942	46,365,484
1943	70,921,532
1944	92,922,821
1945	90,345,203
1946	119,637,983
1947	157,663,036
1948	185,872,594
1949	247,868,876
Total	1,151,708,526

bic feet of gas respectively. More details are given under Morton County.

The other extension is in the southeastern corner of the Kansas part of the Hugoton field (Seward County), where the eastern field limits have been moved southeastward to include all of Stevens County in the productive area. The present boundary, angling southwesterly across western Seward County, is not far west of the Liberal gas pool. Gas wells drilled during 1949, which accounted for this extension, included at least a dozen wells having initial capacities of more than 20 million cubic feet of gas per day. These two extensions added about 90,000 acres to the field.

Production of gas from the Kansas part of the Hugoton field was stepped up sharply during 1949, mainly as a result of the com-

TABLE 25.—*Statistical summary of Kansas natural gas production and use, 1949*

(From the Conservation Division, Kansas Corporation Commission)

	During 1949 M cu. ft.*
Natural gas produced in Kansas—1949	263,226,000
Imported from outside of the State	118,847,000
Total to account for	382,073,000
Gas used in Kansas during 1949	
Domestic	64,900,000
Industrial, miscellaneous, and losses	106,059,000
Carbon black	13,979,000
Exported from State	197,135,000
Total	382,073,000

*Gas measurement calculated on a base pressure of 16.4 pounds per square inch absolute.

pletion of pipeline facilities with greater capacity. Table 24, which gives the gas production of the Hugoton field by years, shows a sharp rise since 1945. A summary of Kansas gas production, exports, imports, and use within the State is given in Table 25.

The State Corporation Commission has taken an additional step regarded as being in the direction of conserving the gas of the Hugoton field. The Commission has published an order fixing a minimum price of 8 cents per thousand cubic feet of natural gas at the wellhead for Hugoton field production. The order has been challenged by the gas purchasing groups and is subject to final court approval.

JEFFERSON COUNTY

The Jefferson County fields in the McLouth area produced 75,458 barrels of oil and 81,827 thousand cubic feet of gas.

Developments during 1949. — Jefferson County produced 75,458 barrels of oil in the McLouth area, in the **McLouth** and **McLouth North** fields. During the year, 15 gas wells in the McLouth area produced 81,827 thousand cubic feet of gas.

Production and other data on the Jefferson County fields is included in Table 44.

JOHNSON COUNTY

No oil was produced. Gas production amounted to 4,341 thousand cubic feet.

Developments during 1949.—No drilling or other important developments were reported from Johnson County. The **Olathe** area produced 4,341 thousand cubic feet of gas.

KEARNY COUNTY

The 1949 production came from the Patterson oil pool and the Hugoton gas field. Oil production was 30,599 barrels; gas production is not segregated as to counties. Wells drilled during 1949; oil none, gas 71, dry none (no wildcats). There were no new discoveries.

Developments during 1949.—The southeastern two-thirds of Kearny County lies within the boundaries of the Hugoton gas field. Plate 2 shows that most of the field area has already been drilled. Some of the new 1949 gas wells were drilled in the best

part of the field; consequently they show very high potential capacities. The well with the highest initial production is the Magnolia Petroleum Company No. 1 Tate-Sheuerman in sec. 24, T. 25 S., R. 35 W. It was rated as having an initial capacity of 41.8 million cubic feet per day which is almost a record for the field. Acid in the amount of 28,000 gallons was used to promote the flow of gas from the well. Ten of the new wells in the county are rated at more than 30 million cubic feet. By contrast, some of the new wells located in T. 26 S., R. 36 W., only 3 miles away are rather small wells.

There was considerable drilling in this county on the outer fringes of the Hugoton field. Wells in T. 22 S., R. 35 W. show good recoveries for they average more than 10 million cubic feet of gas per day. One test in the center of T. 23 S., R. 38 W. has a capacity of only one-quarter million cubic feet and is regarded as being outside the field boundary. It is located half way between Kendall and the Patterson oil pool. Six new gas wells were drilled east of Kendall and one was drilled east of Hartland. All the new wells are shown by a special symbol on Plate 2.

There was no new drilling in the **Patterson** oil pool during the year.

Production, active area, and producing zones are shown in Table 44.

KINGMAN COUNTY

The 1949 production from 2 active pools was 48,079 barrels of oil and 209,420 thousand cubic feet of gas. Wells drilled during 1949: oil none, gas none, dry 3 including 2 wildcats. There were no new, revived, or abandoned pools.

Developments during 1949.—One of the two wildcat wells was drilled in the extreme northeast corner of the county. In this test, at an elevation of 1,413 feet, drilled by R. C. Patton Company et al. on the Harding farm in sec. 12, T. 27 S., R. 5 W., the Viola was entered at 4,008 feet and was tested for 30 minutes. Only salt water came into the hole. Lower down the Arbuckle was entered at 4,068 feet and tested for 20 minutes. Again only salt water was recovered.

The other wildcat, the No. 1 Gilbert, at an elevation of 1,650 feet, was drilled by the Herndon Drilling Company in sec. 25, T.

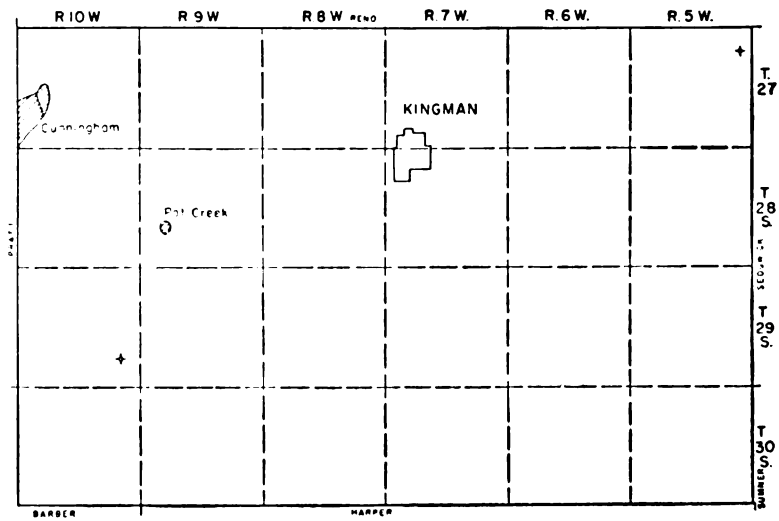

FIG. 11.—Map of Kingman County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

29 S., R. 10 W. The Arbuckle was topped at 4,695 feet and the hole was abandoned at 4,736 feet with no shows.

The third test well was drilled on the southwest side of the **Pat Creek** pool. Here the Plains Exploration Company drilled a test on the Allen farm in sec. 30, T. 28 S., R. 9 W. Water was found in the Viola. The well was 14 feet lower structurally than the nearest producer in the pool.

The pools of Kingman County are shown on Figure 11. Pertinent data concerning them are given in Table 44.

KIOWA COUNTY

The 1949 production from 3 pools was 12,463 barrels of oil and no gas. Wells drilled during 1949: oil none, gas none, dry 1. No pools were discovered, abandoned, or revived.

Developments during 1949.—The single test well drilled in Kiowa County during 1949, the Paxton-Shuck No. 1, was located in sec. 19, T. 28 S., R. 17 W. not far from the **Brenham** gas pool. The well was drilled by the J. M. Huber Corporation. From an elevation of 2,214 feet, the test found the Kansas City-Lansing limestone at 4,254 feet and the top of the Mississippian strata at 4,819

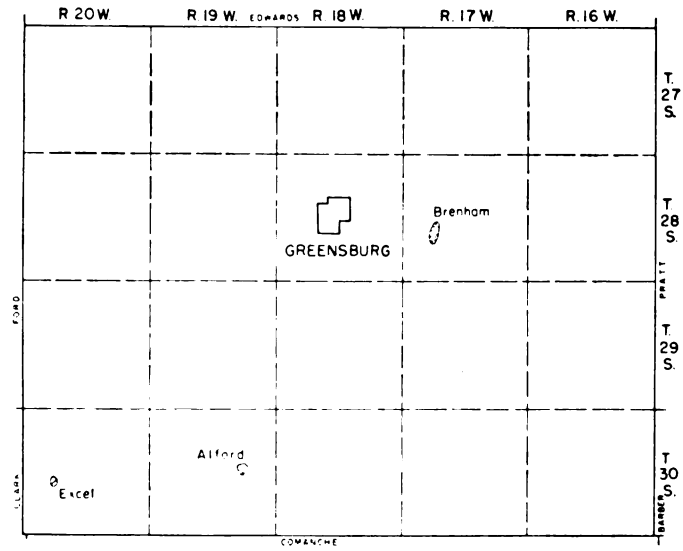

FIG. 12.—Map of Kiowa County showing oil and gas pools. (Gas, dots; oil, diagonal lines.)

feet. Below these strata the Viola was found at 4,929 feet. Drill stem tests were taken from 4,726 to 4,765 feet, 4,820 to 4,830 feet, 4,830 to 4,840 feet and 4,930 to 4,940 feet. All were unsuccessful.

Pool locations are shown on Figure 12. Pertinent data on the pools including their productions are given in Table 44.

LABETTE COUNTY

Oil production totaled 9,013 barrels. About 2,000 thousand cubic feet of natural gas was produced.

Developments during 1949.—No especially important activities were reported in Labette County.

During 1949 four Labette County oil fields produced 9,013 barrels of oil. Oil production statistics and other data on Labette County oil fields are listed in Table 44. Plate 1 shows areas that produced oil by primary and secondary recovery methods in 1949.

One dry hole was drilled in the **Chetopa** field. This field, where production is from the Arbuckle limestone, yielded 3,100 barrels of oil in 1949. In 1947 the field yielded 8,721 barrels, and in 1948, 3,425 barrels of oil.

About 2,000 thousand cubic feet of gas was produced in Labette County in 1949.

LEAVENWORTH COUNTY

Oil production in Leavenworth County totaled 11,718 barrels. Gas production amounted to 6,827 thousand cubic feet.

Developments during 1949.—No drilling was reported. Gas production amounting to 6,827 thousand cubic feet was from the **"Linwood"** field. Oil production in the Leavenworth County part of the **Bankers Life** field and in the **Ackerland** field was reported as 11,718 barrels. Data on the fields are listed in Table 44.

LINN COUNTY

Linn County produced 47,290 barrels of oil and approximately 11,969 thousand cubic feet of gas. Secondary recovery by water flooding is an important phase of the industry in the county. The Parker-Goodrich oil field was extended by new "Bartlesville" wells.

Developments during 1949.—Six oil wells, of about 50 barrels of oil per day initial production, were drilled in the latter part of the year in the northern part of the **Goodrich-Parker** area. Three of the wells are in the W½ sec. 27, and three in the E½ sec. 28, T. 19 S., R. 22 E. Production is reported to be from the "Bartlesville sand." Most of the drilling in the county was in water-flooding projects.

Oil production and other data on Linn County oil fields are shown in Table 44. The total production in scattered areas in four fields is 47,290 barrels of oil, of which 39,475 barrels was produced by water-flooding methods. Water-flooding statistics are listed in Table 9. Locations of areas in which oil was produced in 1949 by primary and secondary methods are shown on Plate 1. Reported gas production in the county amounted to 11,969 thousand cubic feet.

LYON COUNTY

Lyon County produced 423,608 barrels of oil in 1949. There were 3 active fields and 3 water-flooding projects. No gas production was reported. Eleven dry holes, 9 of which are wildcats, were drilled in the county.

TABLE 26.—*Data on dry wildcat test wells drilled in Lyon County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of Kan. City, feet	Depth to top of Miss., feet	Depth to top of "Hunton," feet	Depth to top of Viola, feet	Depth to top of Arbuckle, feet	Total depth, feet
Elk Petro. Corp. No. 1 Zink	NE¼ NE¼ NW¼ 27-15-10E	1,458	1,759	2,620	3,133	3,278	3,438	3,487
Geo. F. Johnson et al. No. 1 Casey	NE¼ NE¼ SW¼ 31-15-10E	1,275	1,590	2,465	2,927	3,071	3,247	3,293
Ohio Oil Co. No. 1 Kizler	NE¼ NE¼ NW¼ 21-16-10E	1,340	1,606	2,501	2,993	3,093	3,251	3,317
Geo. F. Johnson et al No. 1 Wheat	NE¼ NE¼ SW¼ 6-16-12E	1,269	1,340	2,230	2,733	2,819	2,974	3,025
Inland Oil Co. No. 1 Diggs	NW¼ SW¼ NW¼ 18-18-10E	1,330	1,570	2,475	2,910	2,989	3,134	3,204
J. M. Huber Corp. et al. No. 1 Ball	NW¼ SW¼ NW¼ 23-18-10E	1,241		2,289	2,765	2,840	2,943	2,985
Mendenhall Drlg. Co. et al. No. 1 Davis	SE¼ SE¼ SE¼ 4-19-12E	1,050	1,238	2,010				2,056
A. R. Jones & Lotus Oil Co. No. 1 Watts	NE¼ NW¼ NE¼ 16-20-11E	1,197	1,329	2,047		2,509	2,644	2,666
Mendenhall Drlg. Co. et al. No. 1 Neil	NE¼ NW¼ NE¼ 9-21-12E		1,282	2,010	2,476		2,564	2,578

Developments during 1949.—Lyon County produced 423,608 barrels of oil during the year. Of this amount approximately 393,249 barrels was produced by water-flooding methods.

Oil production and other data on Lyon County oil fields are shown in Table 44. Data on water-flooding projects are listed in Table 9. Locations of areas of oil production during 1949 are shown on Plate 1 and Figure 31.

Among the 11 wells drilled in Lyon County in 1949, one is a dry hole regarded as an extension wildcat in the **Fankhouser** field and one as an extension in the **Ott** (Greenwood County) field. Data on the nine other wells are listed in Table 26. These wells are shown on Figure 31.

McPHERSON COUNTY

The 1949 production from 29 active pools was 3,356,243 barrels of oil and 419,027 thousand cubic feet of gas. Wells drilled during 1949: oil 41, gas 1, dry 39, salt water disposal 1, total 82 including 8 wildcats. Two new oil pools were discovered, 2 pools were combined, and none was revived or abandoned.

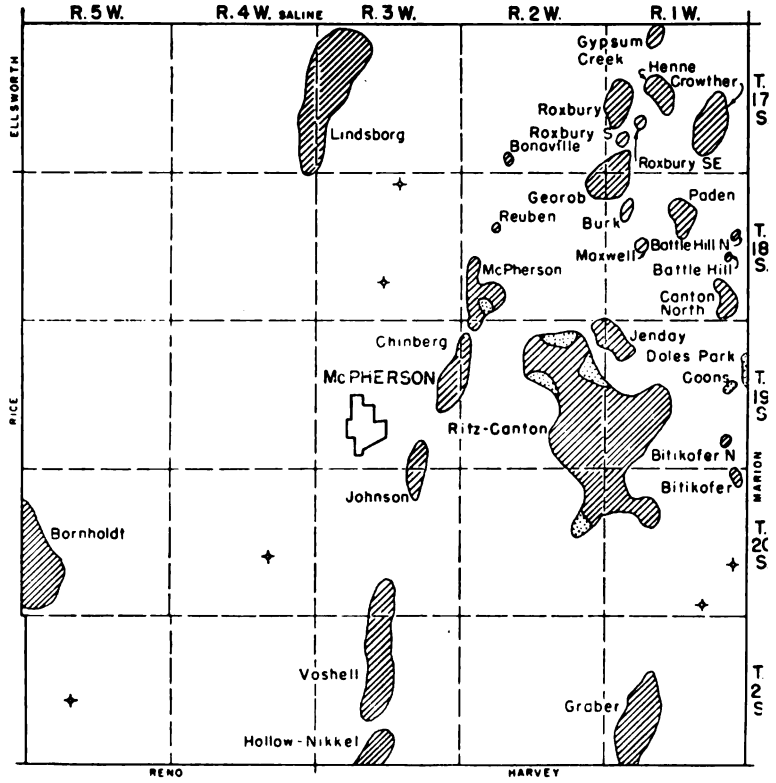

FIG. 13.—Map of McPherson County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

Developments during 1949.—The search for new oil reservoirs in McPherson County was intensive and widespread. Most of the drilling was in or near old pools and the number of wildcats was small. Two wildcat tests were successful in finding new pools. One of these is the **Bonaville** pool in sec. 33, T. 17 S., R. 2 W., about 4 miles west of a group of pools in T. 17 S., R. 1 W. The discovery well is the Texas Pacific Coal & Oil Company No. 1 Gabrielson. It produces from the Simpson sandstone and has a capacity of 108 barrels per day.

The second pool, the **Reuben,** is a mile north of the old McPherson pool. Here the discovery well was also drilled by the Texas Pacific Coal & Oil Company on the Peterson farm in sec. 17, T. 18 S., R. 2 W. Oil was found in the Simpson and the potential capacity of the well was about 25 barrels per day.

TABLE 27.—*Dry wildcat tests drilled in McPherson County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of K.C.-Lans., feet	Depth to top of Miss., feet	Total depth, feet
Texas Pacific Coal & Oil Co. No. 1 Finney	SW cor. NE¼ 3-18-3W	1,452	2,444	3,035	3,714
Raymond & Lebow Drlg. Co., Inc. No. 1 Schneider	SE cor. NE¼ 28-18-3W	1,526	2,478	3,146	3,760
Bay Petroleum Corp. No. 1 Banman	SE cor. SW¼ 24-20-1W	1,546		2,938	3,468
W. L. Hartman No. 1 Reimer	Cen W½ W½ W½, 35-20-1W	1,522	2,311	2,925	3,490
Jones, Shelburne & Farmer, Inc. No. 1 Rump	NW cor. SW¼ 23-20-4W	1,470	2,552	3,216	3,862
Shawver Graham, Inc., No. 1 Ediger	SE cor. NE¼ 20-21-5W	1,511	2,825	3,405	4,016

Drilling in the neighborhood of the **Georob** pool resulted in six new oil wells and seven dry holes. The producers are so located that the **Twin Mounds** and **Hoffsommer** pools were combined with the Georob. In the **Lindsborg** pool two new oil wells were added. In the **McPherson** pool eight new oil producers, two of which produce from the Kansas City-Lansing limestone, were added. Two of the five holes drilled to the deeper Viola from points near old well locations were dry. One new well was completed in the **Jenday** pool, eight in the **Ritz-Canton**, three in the **Johnson,** and four in the **Graber** pool. Two new oil wells each, a Simpson and a Mississippian producer, were added in the **Voshell** and **Roxbury**

TABLE 28.—*Data on pool wells drilled in Marion County during 1949*

Field	No. of oil wells	No. of dry holes
Covert-Sellers	3	1
Doles Park	1 (gas)	
Elbing		1
Elbing North	1	1
Florence	1	2
Lost Springs	2	3
Lost Springs Southeast	1	
Peabody	2	1
Propp	1	
Wenger	4	7

pools. A deep dry hole ending in granite wash in the **Paden** pool found 456 feet of Arbuckle dolomite.

Oil and gas pools of McPherson County are shown on Figure 13. Pertinent data on pools and oil and gas production are given in Table 44. Wildcat wells are listed in Table 27.

MARION COUNTY

Marion County produced 688,967 barrels of oil; 213,104 thousand cubic feet of gas was reported. There were 14 active oil fields; 12 dry wildcat tests were drilled.

Developments during 1949.—In 1949 Marion County produced 688,967 barrels of oil. The amount of natural gas reported is

TABLE 29.—*Data on wildcat test wells drilled in Marion County during 1949*

Company and farm	Location	Depth to top of Kan. City, feet	Depth to top of Miss., feet	Depth to top of Viola, feet	Depth to top Simpson, feet	Depth to top of Arbuckle, feet	Total depth, feet
Anderson-Prichard Oil Corp. No. 1 Scully	SE¼ SE¼ NE¼ 34-18-2E		2,512	2,923	3,000		3,017
Hutchinson Oil & Gas No. 1 Ptacek	SE¼ SE¼ SW 20-19-4E		2,335	2,612			2,655
Stromfeltz et al. No. 1 Hoffman	Cen. S½ SE¼ SW¼ 24-19-5E	1,600	2,131	2,355			2,377
Stromfeltz et al. No. 1 Graham	NW¼ SW¼ NW¼ 35-19-5E			2,372			2,390
Crumpacker & Veeder No. 1 Flaming	SE¼ SW¼ NE¼ 11-20-2E		2,571	2,950	3,022		3,036
Dieter et al. No. 1 Weins	SW¼ SE¼ SE¼ 27-20-2E		2,573	2,909	2,886	3,055	3,115
Uhl & Gould No. 1 Carpenter	NW¼ NW¼ NW¼ 6-20-4E		2,273	2,552	2,611		2,624
Slack & Scanlan No. 1 Good	SW¼ SW¼ SE¼ 20-20-4E		2,247	2,504	2,585	2,647	2,670
Kelly et al. No. 1 Wheeler	SE¼ SW¼ SW¼ 27-20-4E		2,185	2,487	2,476		2,511
Adair No. 1 Fisher	NE¼ SE¼ NE¼ 6-21-4E		2,295	2,526	2,598	2,630	2,667
Thrifty Drlg. Co. No. 1 Hawk	SW¼ SE¼ SW¼ 14-22-5E	1,971	2,406	2,536	2,684	2,767	2,799
H. & M. Drlg. Co. & Seibel No. 1 Genzen	SW¼ SW¼ SW¼ 19-22-5E		2,432	2,660			2,660

213,104 thousand cubic feet. Data on oil fields including 1949 production statistics are listed in Table 44. Plate 1 shows areas in Marion County that produced oil during the year.

Considerable drilling activity took place in Marion County in 1949. Thirty-two pool wells and 12 wildcat wells were reported. Data on pool wells are listed in Table 28, and on dry wildcat tests in Table 29.

MEADE COUNTY

The 1949 production from 2 pools was 465 barrels of oil and no gas. Wells drilled during 1949: oil none, gas none, dry 1, a wildcat. One old well was worked over and abandoned.

Developments during 1949.—The single test well drilled in Meade County during 1949 was the Northern Natural Gas Company No. 1 Clancy in sec. 4, T. 30 S., R. 30 W. The gas-producing

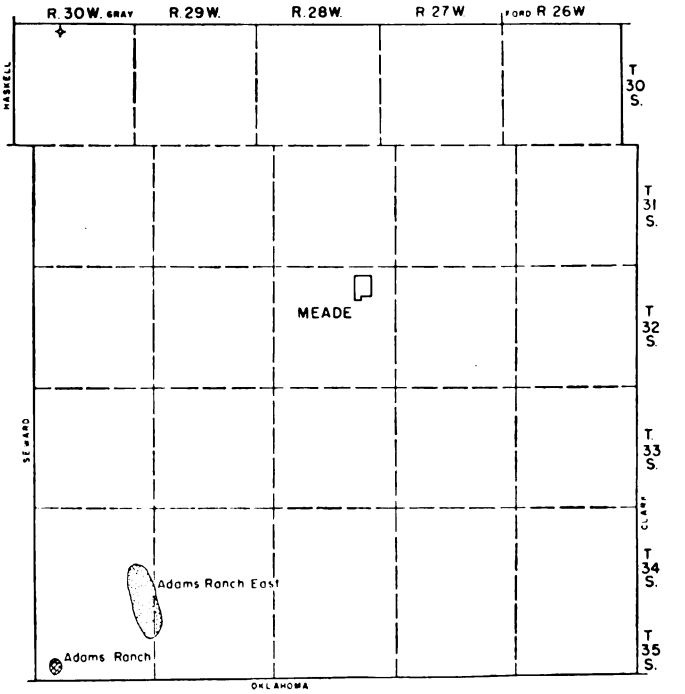

FIG. 14.—Map of Meade County showing oil and gas pools and the dry wildcat test drilled during 1949. (Gas, dots; oil, diagonal lines.)

zones of the Hugoton field were dry. The well was then drilled to the Mississippian strata which were entered at 5,240 feet. Study of the well cuttings reveals the presence of the Chesterian rocks between 5,240 and 5,405 feet; Meramecian rocks between 5,405 and 5,595 feet; and the St. Louis limestone between 5,595 and 5,893 feet, at which depth the well was abandoned.

The pools are shown on Figure 14. Oil production is shown in Table 44.

MIAMI COUNTY

Oil production totaled 365,384 barrels. Approximately 120,000 thousand cubic feet of gas was produced. There were 10 water-flooding projects operating in the county, and approximately 262,891 barrels of oil was produced by water-flooding.

Developments during 1949.—No deep tests were reported in Miami County in 1949. Drilling activities were principally in connection with water-flooding projects.

Miami County produced 365,384 barrels of oil in 1949. The 10 water-flooding projects that operated in the county produced 262,891 barrels of the oil. Oil production and other data on Miami County oil fields are shown in Table 44. Water-flooding data are listed in Table 9. Locations of areas of primary and secondary oil recovery are shown on Plate 1.

Gas production in Miami County in 1949 amounted to about 120,000 thousand cubic feet. A lack of market for gas rather than depletion of the formerly prolific gas fields is accountable for the small amount.

MONTGOMERY COUNTY

Montgomery County produced 878,367 barrels of oil and 441,586 thousand cubic feet of gas. Most of the oil, 578,676 barrels, was produced by water-flooding operations; 15 projects were operating in the county.

Developments during 1949.—Montgomery County produced 878,367 barrels of oil and 441,586 thousand cubic feet of gas during 1949. The number of wells drilled in the county is not available but a comparatively large number of holes was put down, principally in connection with water-flooding operations. No important wildcat wells were reported.

Twenty-four gas wells in the **"Dearing"** field are reported to have produced 334,057 thousand cubic feet of gas. The **"Graham"** field produced 80,375 thousand cubic feet; and the **"Sycamore"** 25,154 thousand cubic feet. About 2,000 thousand cubic feet was produced in the **Cherryvale** area.

Data on oil production in Montgomery County fields are listed in Table 44. Locations of areas that produced oil by primary and secondary methods are shown on Plate 1.

Water flooding.—Fifteen water-flooding projects were active in Montgomery County in 1949, and 578,676 barrels of oil was reported as produced by this means of repressuring. The "Bartlesville," "Peru," "Wayside," and "Weiser sands" were repressured in a total area of 2,963 acres (Table 9). The "Bartlesville sand" is by far the most important in respect to water flooding.

MORRIS COUNTY

Morris County produced 1,301 barrels of oil in 1949. Two fields, 1 of which was opened during the year, were active. About 66,000 thousand cubic feet of gas was produced.

Developments during 1949.—Morris County produced 1,301 barrels of oil during 1949. Of this amount 85 barrels came from the **Nelson** field and 1,216 came from the newly discovered **Burdick** field. Data on Morris County fields are listed in Table 44. Locations of the two oil producing areas and of three dry wildcat wells drilled in 1949 are shown in Figure 31. Data on the wildcat tests are listed in Table 30.

The Burdick oil field was opened in October 1949 when the S. P. Loomis No. 1 Atkinson well, SW¼ SW¼ NE¼ sec. 15, T. 17 S., R. 5 E., found oil in Mississippian limestone in a zone from 2,236 to 2,257 feet. One additional well was drilled and abandoned. The field produced 1,216 barrels of oil during the remainder of the year. Twenty-two gas wells in Morris County were reported to have yielded 65,984 thousand cubic feet of gas in 1949.

Eight wells, including those listed in Table 30, were reported drilled in Morris County in 1949. In addition to the dry wildcats and the two wells in the Burdick field, 1 dry hole was reported in the Nelson field, 1 dry hole in the **Wilde** gas field, and 1 dry hole in the **Wilsey** gas field.

TABLE 30.—*Data on test wells drilled in Morris County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of Kan. City, feet	Depth to top of Miss., feet	Total depth, feet	Remarks
Lance Hill et al. No. 1 Doran	SE¼ SE¼ NE¼ 24-15-8E	1,448	1,780	2,571	3,420	Top "Hunton" 2,934; top Viola 3,196; top Arbuckle 3,368; top St. Peter 3,302
S. P. Loomis No. 1 Atkinson	SW¼ SW¼ NE¼ 15-17-5E	1,488	1,800	2,220	2,257	Disc. well, Burdick pool
Mouser Drlg. Co. No. 1 Novak	SW¼ SW¼ NE¼ 26-17-5E	1,504	1,726	2,195	2,420	Top Viola 2,387
Mouser Drlg. Co. No. 1 Peterson	SW¼ SW¼ NE¼ 27-17-5E	1,500	1,738	2,213	2,406	

MORTON COUNTY

The 1949 production of gas—all from the Hugoton field—is not segregated as to counties. Oil production was 581 barrels from 1 pool. Wells drilled in 1949: oil none, dry none, gas 6 including 2 wildcats. There were no new discoveries.

Developments during 1949.—All of the six test wells drilled in Morton County during the year were gas wells of high productive capacity. Seemingly, the western limits of the Hugoton gas field have not yet been found in this county. Two wells drilled by the Cities Service Oil Company in secs. 2 and 15, T. 34 S., R. 41 W., 6 miles west of the former boundary, were rated at 9.9 and 8.5 million cubic feet of gas per day. The largest gas well drilled in the county during the year was the Panhandle Eastern Pipe Line Company No. 1 Fitzgerald well in sec. 17, T. 35 S., R. 39 W., a 29-million-cubic-foot well. All the wells drilled in Morton County are shown on Plate 2. Additional details are given under the Hugoton field.

Data on oil and gas production in the **Richfield** pool are given in Table 44.

NEMAHA COUNTY

The Strahm field produced 3,312 barrels of oil. Five dry holes, 4 of which are wildcats, were reported.

Developments during 1949—One well in the **Strahm** field, sec. 27, T. 2 S., R. 14 E., yielded 3,312 barrels of oil in 1949. The well

TABLE 31.—*Data on dry wildcat test wells drilled in Nemaha County during 1949*

Horizon	Texas Co. No. 1 Murdock, SE¼ SE¼ SW¼ sec. 16, T. 2 S., R. 13 E.	Carter Oil Co. No. 1 Hutfles NW¼ NW¼ SW¼ sec. 25, T. 3 S., R. 13 E.	Carter Oil Co. No. 1 Draney Heirs SE¼ SE¼ SE¼ sec. 13, T. 3 S., R. 14 E.	Carter Oil Co. No. 1 Gilbert-Landbank, NW¼ SE¼ sec. 14, T.2 S., R. 14 E.
Top Topeka limestone		614	836	941
Top Lansing group	538			1,350
Top Kansas City group		1,014	1,308	
Top Mississippian rocks			2,637	2,624
Top Kinderhookian shale		1,804	2,800	2,806
Top "Hunton" limestone		2,003	3,078	2,993
Top Maquoketa shale		2,607		
Top Viola limestone		2,659		
Top Simpson group		2,933		
Top Pre-Cambrian rocks	836	2,972		
Total depth	846	2,976	3,152	1,306
Surface elevation, feet	1,292	1,298	1,247	1,305

was shut down during the last four months of the year. Drilling activities reported in Nemaha County include 1 dry hole, the Carter Oil Co. No. 1 Koch-Robinson, SW¼ NE¼ SE¼ sec. 28, T. 2 S., R. 14 E., in the Strahm field, and four dry wildcat tests elsewhere in the county. Data on the wildcat test wells are listed in Table 31.

NEOSHO COUNTY

Oil production totaled 514,570 barrels. Reports on drilling activities show 9 oil wells, 2 dry holes, and 9 salt water disposal wells, all in the Humboldt-Chanute field. Gas production amounted to 82,958 thousand cubic feet.

Developments during 1949.—Neosho County produced 514,570 barrels of oil in 1949. There were six water-flood projects operating in the county. One project in Allen and Neosho Counties in the Humboldt-Chanute field produced 9,334 barrels of oil by water flooding. The other five projects in Neosho County produced 453,121 barrels of oil by this method.

It is estimated that more than 600 wells, including oil wells, dry holes, and water input wells, were drilled in Neosho County in 1949. At least seven drilling machines were working practically continuously. Activities were principally in the **Humboldt-Chanute** field, in the areas in the vicinities of Erie and St. Paul.

Oil production and other data on Neosho County oil fields are listed in Table 44. Data on water-flooding projects are listed in Table 9. Locations of areas of oil production in the county are shown on Plate 1.

Gas production in Neosho County in 1949 was reported as 82,958 thousand cubic feet.

NESS COUNTY

The 1949 production from 4 pools was 274,975 barrels of oil and no gas. Wells drilled during 1949: oil 1, gas none, dry 1 (no wildcats). No new pools were discovered.

Developments during 1949.—Both of the wells drilled in Ness County during 1949 are located on the southwestern fringe of the **Aldrich** pool. One is a new oil well capable of producing, according to the log, 78 barrels of oil per day with 43 percent water. The other is a dry hole near by. Both are located on the Lythe farm.

The pools are shown on Figure 15. Data on pools and oil production are given in Table 44.

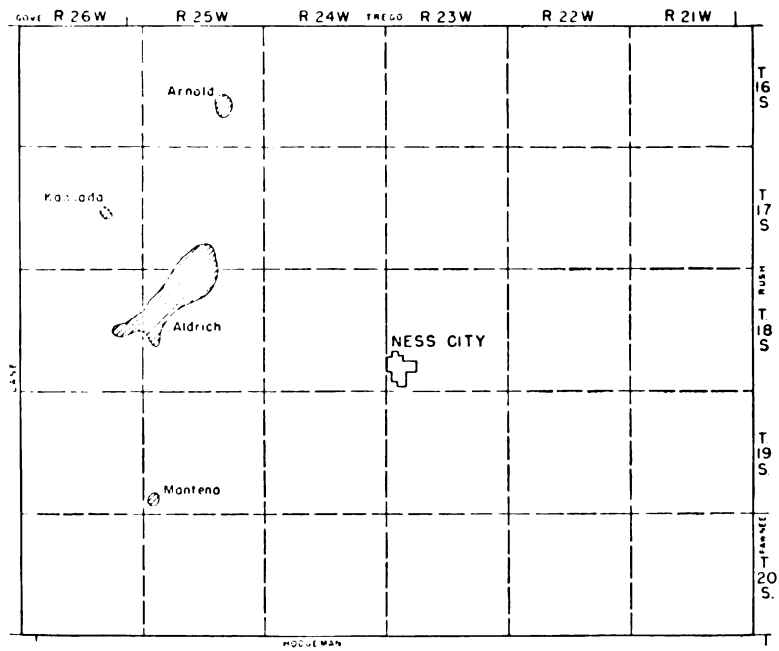

FIG. 15.—Map of Ness County showing oil pools.

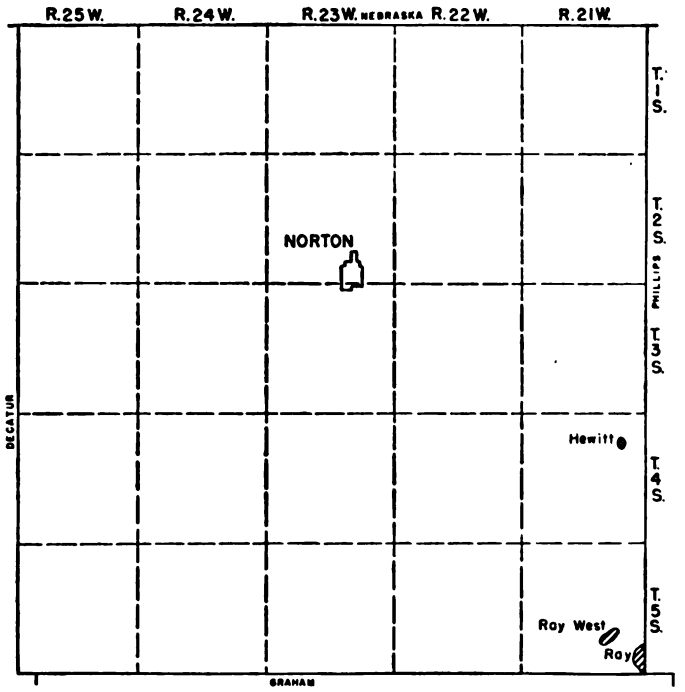

FIG. 16.—Map of Norton County showing oil pools.

NORTON COUNTY

The 1949 production from 3 pools was 41,441 barrels of oil and no gas. Wells drilled during 1949: oil 2, gas none, dry none. No new pools were discovered.

Developments during 1949.—The two wells completed in Norton County during the year are in the **Ray** pool in the southeastern corner of the county. Both produce from the basal sandstone called the Reagan. One of the wells drilled on the Finnigan farm in sec. 25, T. 5 S., R. 21 W. is capable of producing more than 1,000 barrels of oil per day; the other well drilled in sec. 36, T. 5 S., R. 21 W. on the Veeh farm was rated at 165 barrels of oil per day.

The pools are shown on Figure 16. Data on pools and oil production are given in Table 44.

OSBORNE COUNTY

Wildcat wells have been drilled in Osborne County from time to time, but so far no pool has been discovered. Three dry wildcat wells were drilled during 1949.

Developments during 1949.—One of the three wildcat wells drilled in the county during 1949 is located in sec. 12, T. 8 S., R. 14 W. where the El Capitan Oil Company, Inc. drilled its No. 1 Heiser well to a total depth of 3,200 feet, ending in the Kansas City-Lansing limestone which was topped at 3,083 feet. The elevation of the well is 1,855 feet. There were no shows of oil or gas.

The other two holes tested the Arbuckle dolomite and are located on the projected trend of the Fairport anticline in Russell County. The B & R Drilling, Inc. No. 1 Seefeld test in sec. 32, T. 10 S., R. 15 W., at an elevation of 2,071 feet, entered the Arbuckle dolomite at 3,923 feet and was abandoned at a total depth of 3,950 feet. The Sohio Petroleum Company No. 1 Worley well, at an elevation of 1,841 feet, entered the Arbuckle dolomite at 3,437 feet and was abandoned at 3,482 feet. No shows of oil or gas were reported.

OTTAWA COUNTY

Wildcat wells have been drilled in Ottawa County from time to time, but so far no pools have been discovered. Two dry wildcat wells were drilled during 1949.

Developments during 1949.—One of the two test wells drilled in Ottawa County during 1949 was by the Westgate-Greenland Oil Company on the Foote farm in sec. 29, T. 9 S., R. 1 W. From an elevation of 1,367 feet the well topped the Arbuckle dolomite at 3,568 feet and was abandoned at 3,613 feet. The other wildcat, also by the Westgate-Greenland Oil Company, was drilled on the Schlotz farm in sec. 22, T. 10 S., R. 2 W. to a depth of 3,508 feet and finished in the Viola limestone which was topped at 3,458 feet. The elevation of the well is 1,408 feet. No shows of oil or gas were reported in either test.

PAWNEE COUNTY

The 1949 production from 13 listed pools was 486,821 barrels of oil and 7,739,170 thousand cubic feet of gas. Wells drilled during 1949:

oil 15, gas 1, dry 10, total 26 including 7 wildcats. Two new pools were discovered during the year. None was revived or abandoned.

Developments during 1949.—There was considerable activity in Pawnee County during the year. One of the new discoveries was the **Larned** pool in sec. 28, T. 21 S., R. 16 W. It is about 3 miles southwest of the nearest production. The discovery well, drilled by the Sunray Oil Corporation on the Brown farm, produces from the Arbuckle dolomite and yields 40 barrels of oil and about 4.5 million cubic feet of gas. The second new pool is the **Pawnee Rock West** found by the Jayhawk Oil Company and Vickers Petroleum Company, Inc. on the Dirks farm in sec. 23, T. 20 S., R. 16 W. This location is only one-half mile west of the main Pawnee Rock pool. Oil is produced from the Arbuckle dolomite.

Drilling in the older pools yielded some new production. In the **Pawnee Rock** pool four new oil wells were added, and the **Ash Creek** pool was extended by the four new oil wells. In the **Shady** gas pool the Skelly Oil Company, drilling on the Galliart ranch in sec. 2, T. 23 S., R. 16 W., got a 111 barrel oil well in the same zone (the Arbuckle) which produces the gas farther north. One new gas well was added to the pool.

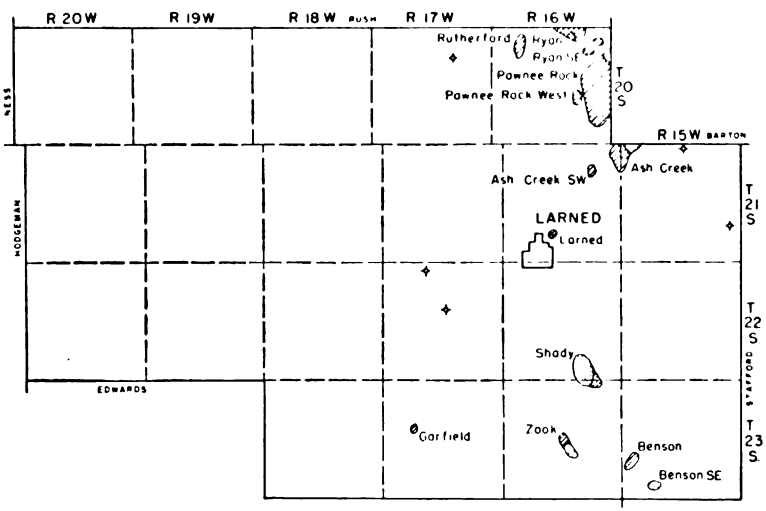

FIG. 17.—Map of Pawnee County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

TABLE 32.—*Dry wildcat tests drilled in Pawnee County during 1949*

Company and farm	Location	Surface elevation, feet	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Vickers Petr. Co., Inc., No. 1 Seeman	NW cor. SW¼ 11-20-17W	2,094	3,558	3,936	3,966
Ben F. Brack Oil Co., Inc. No. 1 Clark	NW cor. NW¼ 3-21-15W	1,943	3,379	3,715	3,750
Continental Oil Co. No. 1 Warner Unit	NE cor. NW¼ 25-21-15W	1,965	3,465	3,851	3,883
Vickers Petro. Co., Inc., No. 1 Frizell	SW cor. NW¼ 4-22-17W	2,031	3,569	3,979	4,040
Amerada Petro. Corp. No. 1 O'Dell	SW cor. NW¼ 15-22-17W	2,031	3,636	4,185	4,326

Oil and gas pools and wildcat wells are shown on Figure 17. Pertinent data on the pools and their productions are given in Table 44. Dry wildcat wells are listed in Table 32.

PHILLIPS COUNTY

The 1949 production from 7 active pools was 1,709,331 barrels of oil and no gas. Wells drilled during 1949: oil 38, gas none, dry 2, total 40 including 1 wildcat. One new pool was discovered.

Developments during 1949.—The single wildcat drilled in Phillips County during 1949, the B & R Drilling, Inc. No. 1 Huffstutter well in sec. 6, T. 2 S., R. 18 W., was assigned an initial potential of 58 barrels of oil per day from a porous zone in the Kansas City-Lansing limestone between 3,444 and 3,480 feet. No lower zones were tested. Eight additional oil wells were drilled in the pool, named **Huffstutter**, before year end. The well with the largest initial capacity, 120 barrels per day, was drilled on the Jackson farm in sec. 5, T. 2 S., R. 18 W. All wells produce from the same zone in the Kansas City-Lansing limestone.

In the **Hansen** pool three new oil wells, one producing from the Arbuckle dolomite and two from the Kansas City-Lansing limestone, were added. One of the 25 new oil wells in the **Ray** pool produces from the Arbuckle dolomite and the other 24 from the Reagan.

Oil and gas pools are shown on Figure 18. Pertinent data on the pools and their productions are given in Table 44.

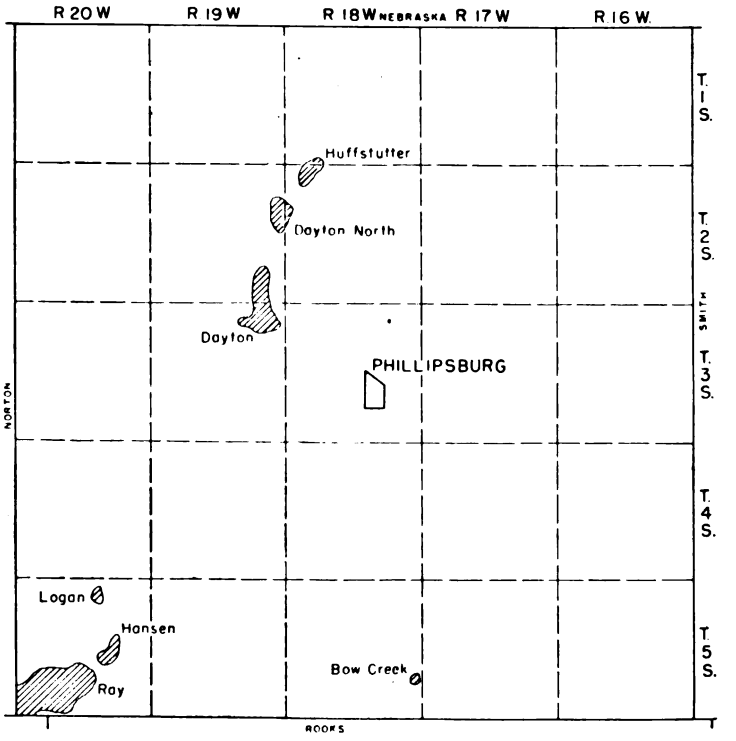

FIG. 18.—Map of Phillips County showing oil pools.

POTTAWATOMIE COUNTY

Wildcat wells have been drilled in Pottawatomie County from time to time, but so far no producing pool has been discovered.

Exploration during 1949.—Two test wells were drilled in Pottawatomie County in 1949.

The Anderson-Prichard and Stanolind No. 1 McFarland well in the NE¼ NE¼ SE¼ sec. 14, T. 8 S., R. 11 E., was completed in November. The total depth is 3,495 feet. The following tops were reported: Heebner 1,137; Lansing, 1,339; Kansas City, 1,466; Mississippian, 2,405; Kinderhookian, 2,488; "Hunton," 2,718; Maquoketa, 3,187; Viola, 3,273; Simpson shale, 3,399; Simpson sand, 3,417; Pre-Cambrian 3,486 feet. The elevation of the well is 1,296 feet.

The Westgate-Greenland Oil Company No. 1 Pessemier well, in the NE¼ NE¼ NE¼ sec. 23, T. 9 S., R. 11 E., was completed in September; total depth is 3,270 feet. These tops were reported: Oread, 755; Lansing, 1,290; Kansas City, 1,420; Mississippian, 2,337; Kinderhookian, 2,533; "Hunton," 2,770; Viola, 3,244. The elevation of the well is 1,185 feet.

According to Geological Survey records only 15 test wells had been drilled previously in Pottawatomie County. Locations of the two drilled during 1949 are shown on Figure 31.

PRATT COUNTY

The 1949 production from 16 pools was 2,246,274 barrels of oil and 1,679,719 thousand cubic feet of gas. Wells drilled during 1949: oil 21, gas 1, dry 16, total 38 including 8 wildcats. One new oil pool was discovered. No pools were revived, abandoned, or combined.

Developments during 1949.—One of the wildcat tests drilled during 1949 in Pratt County found a new oil pool, called the

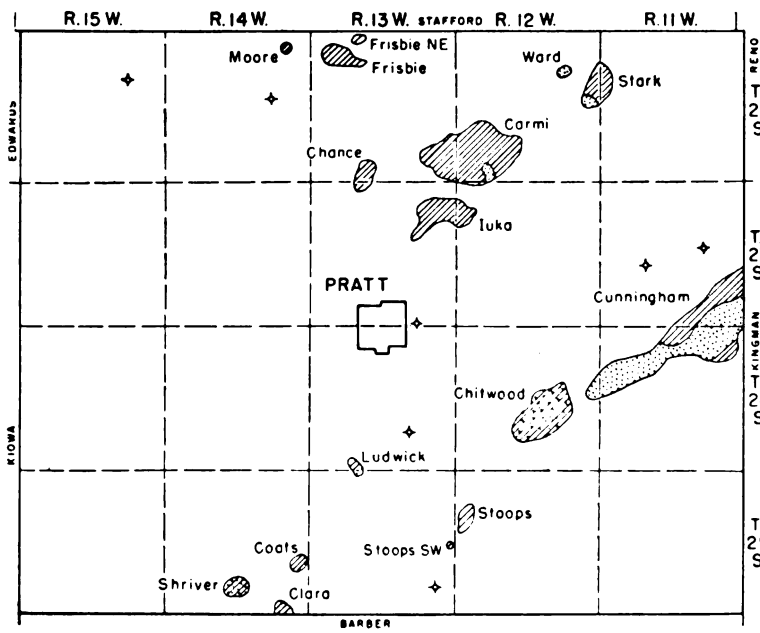

FIG. 19.—Map of Pratt County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

TABLE 33.—*Dry wildcat tests drilled in Pratt County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Viola, feet	Depth to top of Simpson, feet	Depth to top of Arbuckle, feet	Total depth, feet
Champlin Refining Co. No. 1 Moore	NW¼ NE¼ SW¼ 14-26-14W	3,830	4,320	4,408	4,502	4,530
Lion Oil Co. No. 1 Newby	SE¼ NE¼ SW¼ 11-26-15W	3,846	4,345	4,516	4,571	4,610
Cities Service Oil Co. and Skelly Oil Co. No. 1 Park	SE¼ NW¼ SW¼ 14-27-11W	3,620	4,313	4,398	4,478	4,532
Skelly Oil Co. No. 1 Bartlett	SE cor. NE¼ 20-27-11W	3,673	4,346	4,424	4,539	4,589
White Eagle Oil Co. No. 1 Warren	SE cor. SW¼ 35-27-13W	3,775	4,260	4,313	4,438	4,490
Flynn Oil Co. No. 1 Elwell	SW cor. NW¼ 26-28-13W	3,906	4,438	4,506	4,606	4,636
Harbar Drilling Co. No. 1 Combs	SE¼ SW¼ SW¼ 25-29-13W	3,885	4,448	4,570	4,675	4,730

Moore, in sec. 1, T. 26 S., R. 14 W., about 2 miles west of the Frisbie pool. The discovery well, drilled by the Deep Rock Oil Corporation and R. W. Rine Drilling Company on the Young farm, found oil in Simpson rocks between 4,348 and 4,370 feet. The well had an initial production of 40 barrels of oil with about 10 barrels of water per day.

A new oil producing zone, the Viola, was found in one well in the **Carmi** pool. Among the other new wells in that pool one produces gas from the Kansas City-Lansing limestone, four produce oil from Simpson rocks, and three produce oil from the Arbuckle dolomite. In the **Frisbie Northeast** pool there are two new Kansas City-Lansing producers. In the **Chance** pool there are nine new Arbuckle producers. In the **Cunningham** pool one well found oil in the Viola; the other was drilled into the Kansas City-Lansing limestone and found it to be dry. In the **Clara** pool one new well drilled near the north edge had a gas show in the Simpson but was dry and abandoned at 4,675 feet.

Oil and gas pools and wildcat wells are shown on Figure 19. Pertinent data on the pools and their productions are given in Table 44. Dry wildcat wells are listed in Table 33.

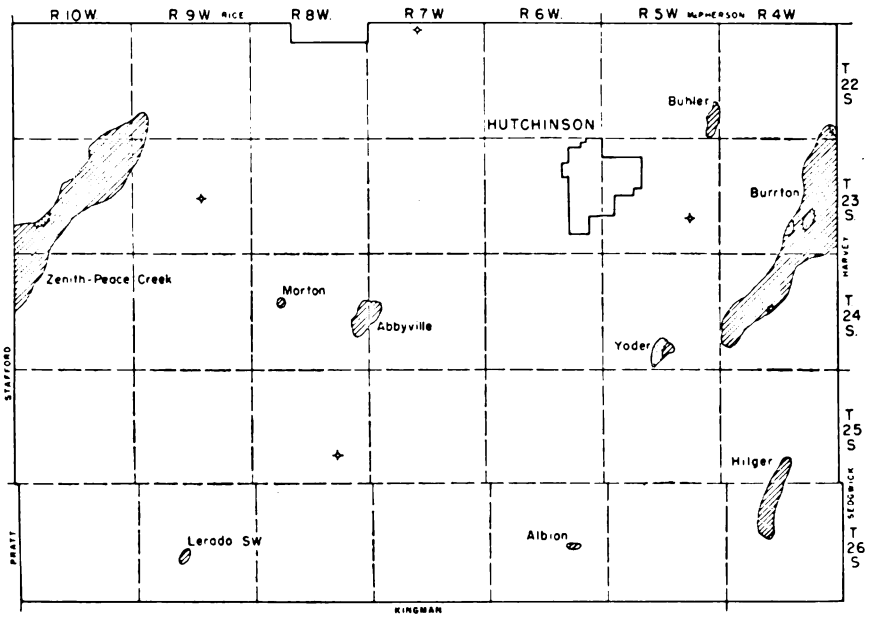

FIG. 20.—Map of Reno County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

RENO COUNTY

The 1949 production from 9 active pools was 2,222,498 barrels of oil and 2,981,247 thousand cubic feet of gas. Wells drilled during 1949: oil 27, gas none, dry 18, salt water disposal 2, total 47 including 4 wildcat wells. No new pools were discovered. None was abandoned or revived.

Developments during 1949.—Although four wildcat wells were drilled in the county during 1949 none resulted in a new pool discovery. Two new oil wells were completed in the **Buhler** pool. In the **Zenith-Peace Creek** pool there are three new oil wells producing from the Viola. In the **Burrton** pool seven new oil wells producing from the Mississippian chert and eight dry holes were completed. Drilling in the **Abbyville** pool near the center of the county was activated when George Siegrist completed his first well in sec. 18, T. 24 S., R. 7 W. Ten new limestone producers were added to the pool during 1949. The producing zone, a 4- or 5-foot bed of very porous rock, lies approximately 200 feet below

TABLE 34.—*Dry wildcat tests drilled in Reno County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Viola, feet	Depth to top of Arbuckle, feet	Total depth, feet
Alkay Oil Co. No. 1 Gregg	NW¼ SW¼ NE¼ 4-22-7W	2,895			3,273
Homer Snowden No. 1 Swanson	Cen. N½ NE¼ NW¼ 26-33-5W	2,670	3,858	3,969	4,000
Harry Gore No. 1 Collier	NE cor. NW¼ 22-33-9W	3,264	3,935	4,073	4,115
Vickers Petro. Co., Inc. No. 1 "B" Kraus	SE cor. NW¼ 26-25-8W	3,187			3,750

the top of the Kansas-City Lansing. In the **Hilger** pool there are five new Viola producers. A new producing zone, the Kansas City-Lansing, was found in the the **Albion** pool late in 1948 when Helmerich & Payne, Inc., completed the No. 1 Waltner well in sec. 23, T. 26 S., R. 6 W. which produced 33 barrels of oil per day.

The oil and gas pools and dry wildcat wells are shown on Figure 20. Pertinent data on the pools and their productions are given in Table 44. Dry wildcat wells are listed in Table 34.

RICE COUNTY

The 1949 production from 42 active pools was 8,868,608 barrels of oil and 177,423 thousand cubic feet of gas. Wells drilled during 1949: oil 135, gas none, dry 103, salt water disposal 3, total 241 including 16 wildcats. Five new oil pools were discovered. No pools were abandoned or revived.

Developments during 1949.—Five of the 16 wildcat wells drilled in the county were successful in finding new oil pools. Two of these are in the northeastern part of the county just north of Little River. The Atlantic Refining Company found the **Odessa** pool with their No. 1 Hoffman well in sec. 32, T. 18 S., R. 6 W. which was drilled to the Arbuckle dolomite and then plugged back to make a 338-barrel well in a porous zone of the Kansas City-Lansing limestone between 3,092 and 3,098 feet. The **Odessa South** pool was discovered in sec. 9, T. 19 S., R. 6 W. when the J. M. Huber Corporation worked over the No. 1 Sims well. Here, also, all zones down to the Arbuckle dolomite were tested, but the

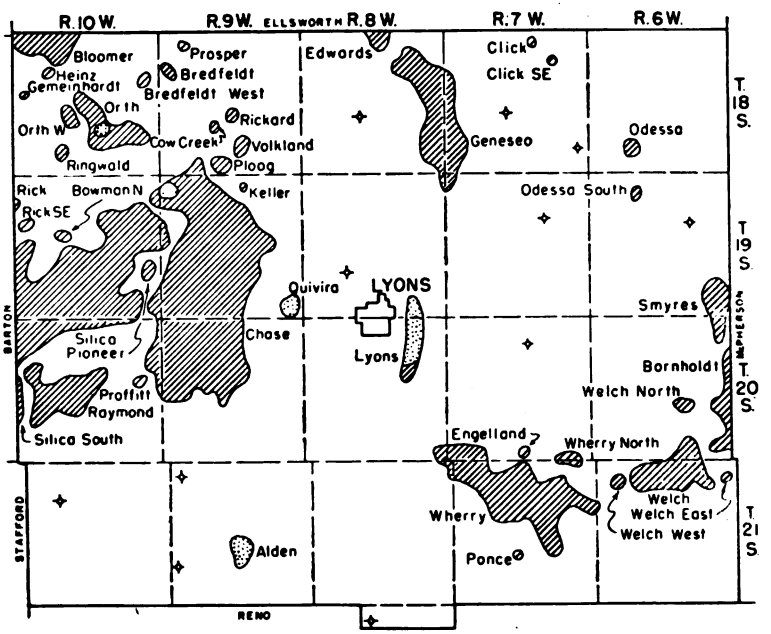

FIG. 21.—Map of Rice County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

production, 40 barrels of oil per day with 9 percent water, was found in the Kansas City-Lansing by a plug back.

In the northwestern corner of the county the Anderson-Prichard Oil Corporation discovered the **Ringwald** pool in sec. 32, T. 18 S., R. 10 W. Saturation was found in the Topeka limestone, but the test was continued to a porous zone in the Pre-Cambrian quartzite at 3,072 feet where oil came into the hole. Later plugged back to the Kansas City-Lansing, it was completed as a well with a potential capacity of 375 barrels of oil per day. The producing zone lies about 100 feet below the top of the group. Offset drilling resulted in six additional oil wells before the end of the year.

The new **Engelland** pool is located just north of the Wherry pool in the southeastern part of the county. It was found by the Skelly Oil Company on the Engelland farm in sec. 34, T. 20 S., R. 7 W. The producing zone is the Sooy conglomerate.

The **Proffitt** pool, in the southwestern part of the county, produces from the Arbuckle. The discovery well, the Henderson Oil Company No. 1 Proffitt in sec. 13, T. 20 S., R. 10 W., has a potential

TABLE 35.—*Dry wildcat tests drilled in Rice County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Viola, feet	Depth to top of Arbuckle, feet	Total depth, feet
Heathman Drlg. Co., et al. No. 1 Fail	SW cor. NE¼ 21-18-7W	2,759	3,312	3,416	3,446
Donald T. Ingling, et al., No. 1 Wolf	SW cor. SE¼ 25-18-7W	2,724	3,358	3,460	3,514
Continental Oil Co. No. 1 Patterson	NE cor. SW¼ 21-18-8W	2,879	3,320	3,429	3,473
Beardmore Drlg. Co. & Barbara Oil Co. & E. A. Koester No. 1 Houghton	NW¼ NE¼ NW¼ 14-19-6W	2,800			3,380
J. W. Bird No. 1 Major	SW cor. SW¼ 11-19-7W	2,822	3,491	3,589	3,607
Brunson Drlg. Co., Inc. et al. No. 1 Feldman	NE cor. NE¼ 29-19-8W	2,928	3,386	3,486	3,526
Alkay Oil Co. No. 1 Pool	NE cor. NW¼ 10-20-7W	2,950	3,632	3,733	3,751
Barnett Oil Co. et al. No. 1 Stout	NW cor. SE¼ 6-21-9W	2,964		3,375	3,405
National Assoc. Petro. Co. No. 1 Proffitt	NE¼ SW¼ NW¼ 30-21-9W	3,002	3,345	3,468	3,500
Carl Lebsack No. 1 Miller	NE cor. SW¼ 8-21-10W	3,039		3,402	3,430
Wm. L. Graham Oil Co. No. 1 Mathes	NE¼ SE¼ SW¼ 4-22-8W	2,994	3,656	3,767	3,792

capacity of 62 barrels of oil with 6 percent water. The name Proffitt was previously used for a pool in sec. 12 of the same township. It was discovered in 1938 and later abandoned.

Fifty-one new oil wells were completed in the **Chase** pool where good production from Simpson rocks was found on the west side. Elsewhere new wells found oil in the Kansas City-Lansing limestone, Simpson rocks, and Arbuckle dolomite. In the **Silica** pool 28 new producers were added, four in secs. 11 and 12, T. 19 S., R. 10 W. producing from the Sooy conglomerate. Oil was found in Pre-Cambrian quartzite in wells in secs. 20 and 21, T. 19 S., R. 10 W.; no Arbuckle dolomite was reported at this point although the Arbuckle reaches a thickness of more than 500 feet within the boundaries of the pool.

The **Lyons** pool, which previously has produced only gas, has three new wells in sec. 14, T. 20 S., R. 8 W., (at the south end of the gas area) that produce oil from the "Misener." Seven new oil producers were added to the **Welch pool**, one to the **Welch West**, and four to the **Wherry**.

Oil and gas pools in Rice County are shown on Figure 21. Pertinent data on the pools including their production are given in Table 44. Dry wildcat tests are listed in Table 35.

ROOKS COUNTY

The 1949 production of 48 listed pools was 4,437,454 barrels of oil and no gas. Wells drilled during 1949: oil 170, gas none, dry 128, salt water disposal 3, total 301 including 31 wildcats. Eleven new pools were discovered, 4 were combined, 1 was abandoned, and none was revived.

Developments during 1949.—Table 36, which shows dry wildcat tests, reveals that all parts of Rooks County were tested during 1949. However, testing was mainly concentrated in the southern half of the county where previous drilling had been so successful. The northernmost of the new pools is the **Locust Grove** in sec. 8, T. 7 S., R. 19 W., some 4 miles northeast of the old Alcona pool where Sam K. Pack found oil in the Arbuckle dolomite on the Griebel farm. The discovery well makes 25 barrels of 25° A. P. I. gravity oil per day with 50 percent water.

The new **Belmont** pool is located in the same township 3 miles south of the Locust Grove. It was found by the Harry Gore No. 1 Cramm well in sec. 28, T. 7 S., R. 19 W. The Kansas City-Lansing is the producing zone, although the test, a 66-barrel well, was drilled down to the Arbuckle. The new **Hayden** pool, 8 miles southwest of the Belmont, was found by Heathman-Honaker Drilling Company with their Hayden No. 1 well in sec. 31, T. 8 S., R. 19 W. The new discovery is a 122-barrel Arbuckle well. A short distance east of the Barry East pool the Continental Oil Company opened the new **Yohe** pool with their No. 1 Yohe well in sec. 4, T. 9 S., R. 18 W. The test was drilled down to the Arbuckle and then plugged back to make an 892-barrel well in a porous zone in the Kansas City-Lansing limestone.

In sec. 17, T. 9 S., R. 18 W., Petroleum, Inc. opened the **McHale South** pool. The discovery well, rated at 50 barrels per day, found

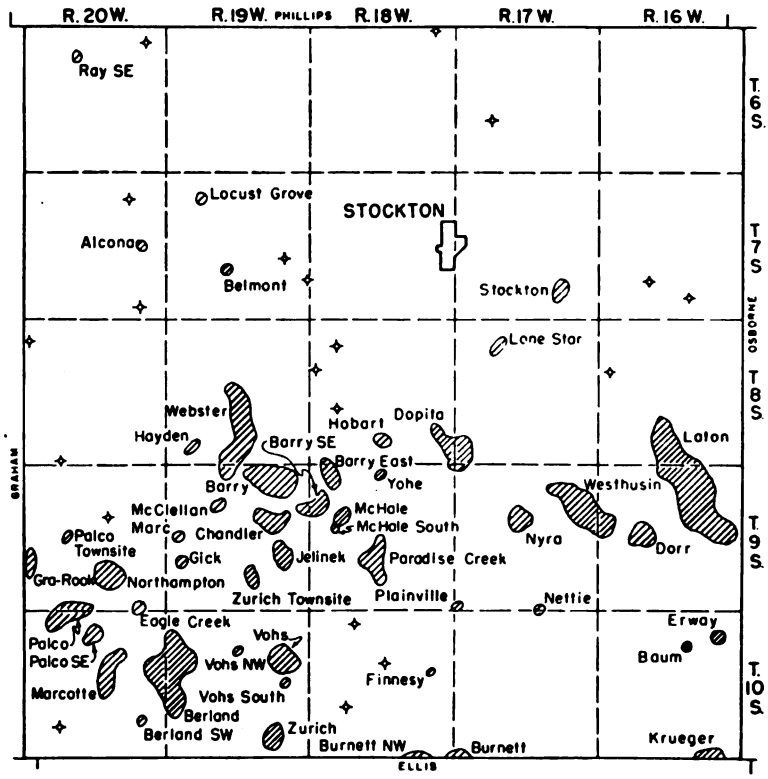

FIG. 22.—Map of Rooks County showing oil pools and dry wildcat tests drilled during 1949.

oil in the Arbuckle dolomite. South of the Zurich Townsite pool W. L. Hartman found oil on the Webster farm in sec. 34, T. 9 S., R. 19 W. The new discovery at first was rated at 50 barrels per day from the Arbuckle and the new pool was announced by the Nomenclature Committee as the **Zurich Townsite South** pool. Later in the year the pool was abandoned.

The good recoveries from the **Berland** pool encouraged active prospecting in the vicinity which opened two new pools, the **Berland North** and the **Berland Northeast.** The 49 oil wells drilled in and around the Berland pool during the year resulted in the new pools being combined with the Berland. Northwest of the Berland there are two new pools, the Eagle Creek and the Palco Southeast. The **Eagle Creek** pool was found by the Francis Oil & Gas, Inc. on

TABLE 36.—*Dry wildcat tests drilled in Rooks County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Westgate-Greenland Oil Co. No. 1 Muir	SW cor. SE¼ 20-6-17W	3,120	3,463	3,515
G. L. Reasor No. 1 Howe	NW cor. NW¼ 1-6-18W	3,023	3,422	3,450
Louis R. Travis No. 1 Cole	SW¼ NW¼ SW¼ 1-6-20W	3,265		3,573
W. P. Faulkner No. 1 Jones	SW cor. NW¼ 28-7-16W	2,920	3,302	3,315
Fink and Peterson No. 1 Hardman	NW¼ NE¼ NE¼ 34-7-16W	3,029	3,499	3,515
Midstates Oil Corp. No. 1 Walker	NE cor. SE¼ 23-7-19W	3,083	3,404	3,460
The Derby Oil Co. et al. No. 1 Behrens	SE cor. NE¼ 25-7-19W	3,027	3,330	3,350
Brunson Drlg. Co., Inc. No. 1 Timmons	NW cor. NE¼ 11-7-20W	3,344	3,598	3,651
Brunson Drlg. Co., Inc. No. 1 Wamhoff	NE cor. SE¼ 35-7-20W	3,157	3,418	3,469
Crowe Drlg. Co., Inc. No. 2 Chesney	NE cor. NW¼ 18-8-16W	3,048	3,376	3,408
Hinkle Oil Co., et al. No. 1 Veverka	NW cor. NW¼ 8-8-18W	3,136	3,411	3,443
Virginia Drlg. Co., Inc. No. 1 Bouchey	NE¼ NW¼ NW¼ 18-8-18W	3,192	3,493	3,494
Cities Service Oil Co. No. 1 "B" Roelfs	SW cor. NW¼ 20-8-18W	3,215	3,500	3,530
Heathman-Honaker Drlg. Co., et al. No. 1 Thyfault	SW cor. SW¼ 6-8-20W	3,206		3,591
C-G Drilling Co. & N. Appleman Co. No. 1 Desaire	SW cor. SE¼ 32-8-20W	3,376	3,717	3,772
Birmingham-Bartlett Drilling Co. No. 1 "D" Kern	NW cor. NE¼ 15-9-20W	3,397	3,666	3,706
National Cooperative Refining Assoc. No. 1 Hilgers	SE cor. NE¼ 5-10-18W	3,401	3,757	3,782
Hinkle Oil Co. et al. No. 1 Hahna	NW cor. NW¼ 15-10-18W	3,427	3,796	3,850
Darby & Bothwell, Inc. No. 1 Hambright	SW cor. SE¼ 20-10-18W	3,316	3,671	3,721
Doley Oil Co. No. 2 Thomas	SW¼ NW¼ SE¼ 29-10-20W	3,450	3,812	3,835

the Wilson farm in sec. 2, T. 10 S., R. 20 W. The well is an Arbuckle producer rated at 167 barrels of oil per day. The new **Palco Southeast** pool was found by the Heathman Drilling Company, Inc. on the Nutsch farm in sec. 3, T. 10 S., R. 20 W. Oil comes from the Arbuckle dolomite and the discovery well has a capacity of 463 barrels per day.

Nadel and Gussman discovered the **Berland Southwest** pool with their No. 1 Sutor well in sec. 26, T. 10 S., R. 20 W. The pool opener is rated at 505 barrels per day from the Arbuckle at 3,728 feet.

Drilling in the older pools was extensive. Almost every pool shown on Figure 22 was enlarged by the addition of one or more wells. The **Dopita** pool has 9 new Arbuckle and Kansas City-Lansing wells, the **Westhusin** pool 12 new oil wells and 3 wells worked over for producers. Six new wells were added in the **McHale** pool, and 8 in the **Nyra.** The Novotny No. 1, a dry hole in sec. 3, T. 9 S., R. 19 W., in the **Webster** pool, reportedly was deepened for a salt water disposal well. It found the Arbuckle dolomite 414 feet thick and was finished in Pre-Cambrian granite. The **Chandler** pool was enlarged by the addition of 6, the **Jelinek** by 8, and the **Northampton** by 9 new oil wells. In the **Krueger** pool which lies along the south boundary of the county 5 new wells were completed. A new producing zone, the Dodge limestone, may have been found, but is has not been formally announced. In the **Palco** pool there are 5 new oil wells and in the **Marcotte** pool 4.

During the year the **Silvers** and **Barry West** pools were combined with the Webster, the latter name being retained.

Oil and gas pools and wildcat wells are shown on Figure 22. Pertinent data on the pools, including their productions, are given in Table 44. The dry wildcat wells are listed in Table 36.

RUSH COUNTY

The 1949 production from 5 pools was 301,007 barrels of oil and 4,977,355 thousand cubic feet of gas. Wells drilled during 1949: oil 11, gas none, dry 3, total 14 including 2 wildcat wells. There were no new pool discoveries, and no revivals or abandonments.

Developments during 1949.—Two wildcat wells and 12 wells in the Ryan pool make up the total of wells drilled in Rush County during the year. One of the wildcat tests is the J. M.

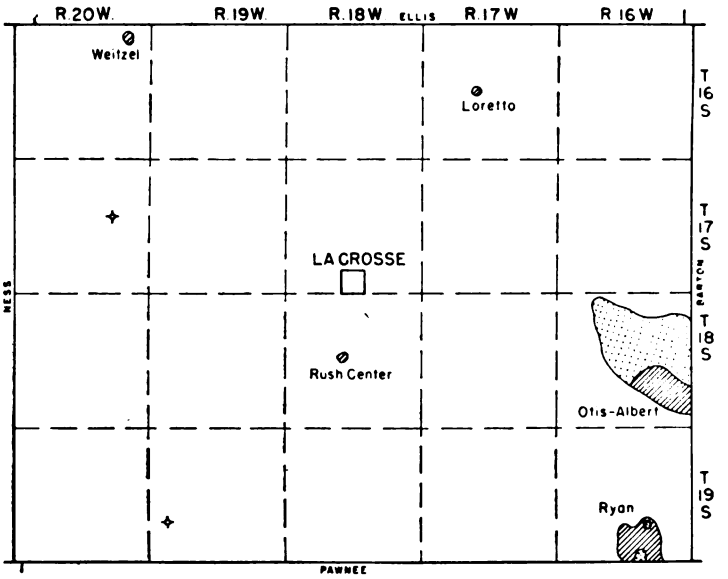

FIG. 23.—Map of Rush County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

Huber Corporation and Davis No. 1 Derr in the SW¼ sec. 14, T. 17 S., R. 20 W., a few miles west of McCracken. Here the conglomerate rests on 9 feet of (Ordovician) Simpson rocks. The Arbuckle was entered at 4,062 feet and the test abandoned at 4,115 feet without shows of oil or gas.

The second wildcat test, the No. 1 Knotts-Seltmann drilled by John Lindas Oil, Inc. in sec. 30, T. 19 S., R. 19 W. near the southwestern corner of the county, found 182 feet of Mississippian strata resting upon the Viola at 4,608 feet; the Arbuckle, topped at 4,711 feet, was penetrated to a total depth of 4,741 feet. No shows of oil or gas were reported.

In the **Ryan** pool 11 additional oil wells were completed during the year. Two of the new wells are rated at more than 300 barrels per day. Three of them produce a considerable amount of gas together with some oil.

Oil and gas pools and dry wildcat wells are shown on Figure 23. Pertinent data on the pools are given in Table 44.

RUSSELL COUNTY

The 1949 production from 41 pools was 13,125,372 barrels of oil and no gas. Wells drilled during 1949: oil 198, gas 2, dry 106, salt water disposal 9, total 315 including 21 wildcats. Ten new pools were discovered, 2 combined, and 2 old pools abandoned.

Developments during 1949.—Although most of the wells drilled in Russell County during 1949 were successful in finding oil, there was a considerable number of dry holes within and on the fringes of producing territory. The **Eulert** pool was found by the Anschutz Drilling Company No. 1 Eulert well in sec. 35, T. 11 S., R. 15 W. The discovery well, an Arbuckle producer, was given the maximum rating of 3,000 barrels on the official test. Offset

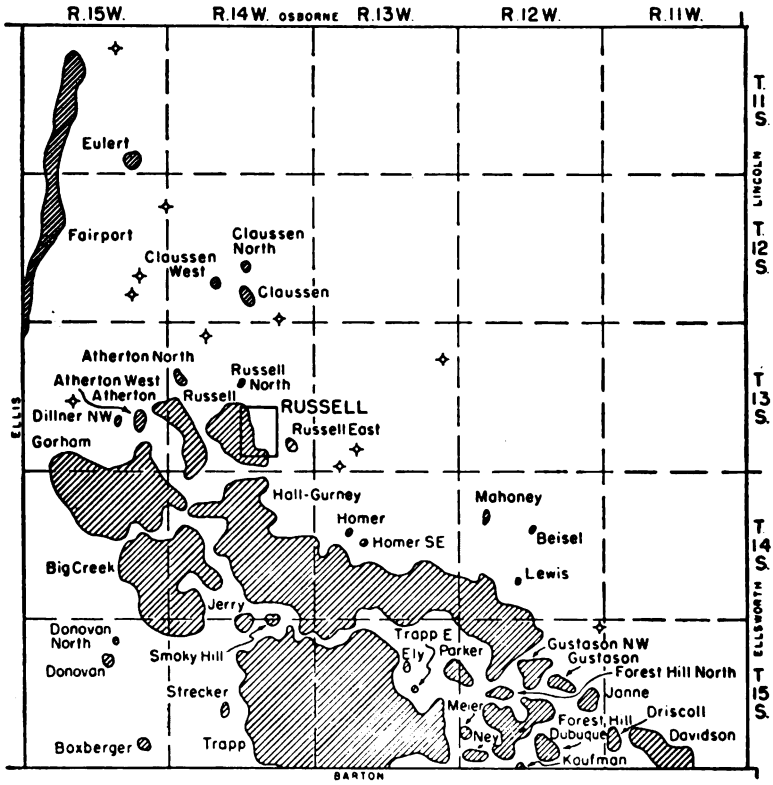

FIG. 24.—Map of Russell County showing oil pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

drilling resulted in three additional wells at the close of the year. Its location, only 2.5 miles east of the Fairport pool, is significant.

The **Claussen West** pool was found by the Crown Oil Company, Inc. on the Foster farm in sec. 29, T. 12 S., R. 14 W., only a mile west of the Claussen pool and about 7 miles east of the Fairport pool. The oil comes from the Kansas City-Lansing limestone. The **Russell East** pool was found by Shields Oil Producers about 1.5 miles east of the old Russell pool, on the Anschutz farm in sec. 25, T. 13 S., R. 14 W. Oil here occurs in the Arbuckle dolomite. Two new pools were found a very short distance north of the Hall-Gurney. One of them is the **Homer** pool in sec. 17, T. 14 S., R. 13 W. found by John Lindas Oil, Inc. & Murfin Drilling Company on the Ehrlich farm. The other is the **Homer Southeast** pool in sec. 16 of the same township, found by John Lindas Oil, Inc. et al. Both pools produce oil from the Tarkio limestone, high in the Pennsylvanian sequence. The Hall-Gurney pool also produces some of its oil from this zone.

Four new pools were found rather close together between the Trapp and the Hall-Gurney pools. The **Parker Northwest** pool, a Kansas City-Lansing producer, was found by John Lindas, Oil, Inc. on the Parker farm in sec. 7, T. 15 S., R. 12 W. The Parker Northwest pool was combined with the **Parker** during the year. The new **Ely** pool is 1 mile east of the Trapp pool on the Ely farm in sec. 15, T. 15 S., R. 13 W. It produces oil from the Dodge limestone, a part of the Shawnee group. The new **Trapp East** pool is one-half mile east of the Trapp pool on the Sellens farm in sec. 14, T. 15 S., R. 13 W.; oil was found in the Arbuckle dolomite. Another new pool discovery, on the east side of the Trapp pool, was the **Piester** which was combined with the Trapp later in the year.

Eleven new oil wells were added to the **Fairport** pool. Among the producing zones in which oil was found are the Kansas City-Lansing, Gorham, Simpson, Arbuckle, and Reagan. In the **Atherton** pool one new Kansas City-Lansing well and six additional Arbuckle wells were added. A dry hole in sec. 32, T. 13 S., R. 14 W. found the Arbuckle to be more than 200 feet thick. In the **Hall-Gurney** pool 57 new oil wells and 32 dry holes were drilled. Here, also, there are several producing zones. One salt water disposal well in sec. 5, T. 15 S., R. 12 W. found the Arbuckle 57 feet thick and the Reagan 102 feet thick. In the **Big Creek** pool 20 new oil wells were completed. They found oil in the Kansas City-Lansing,

TABLE 37.—*Dry wildcat tests drilled in Russell County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Arbuckle, feet	Total depth, feet
Westgate-Greenland Oil Co. No. 1 Angel	SE cor. SE¼ 3-11-15W	3,007	3,465	3,484
Prairie Oil Well Drls. No. 1 McCormick	SW cor. SE¼ 35-12-14W	2,753		3,072
Jones, Shelburne & Farmer, Inc. No. 1 Mellard	NE¼ SE¼ NE¼ 12-12-15W	2,806	3,136	3,171
Stearns Petroleum, Inc., et al. No. 1 Davis	NE cor. NE¼ 26-12-15W	2,992	3,284	3,308
Anschutz Drilling Co., Inc. No. 1 Ross	SW cor. SE¼ 26-12-15W	2,984	3,264	3,315
B & R Drlg., Inc. No. 1 Dauber	SE cor. NW¼ 12-13-13W	2,780	3,243	3,275
Duke & Wood Drlg. Co. No. 1 Holland	SW cor. SW¼ 32-13-13W	3,021	3,344	3,394
R. W. Rine Drlg. Co. No. 1 Schmidt	NE cor. NE¼ 32-13-13W	3,018	3,350	3,407
Peel-Hardman No. 1 Foster	NW cor. SE¼ 5-13-14W	2,858	3,145	3,159
Jones-Shelburne, Inc. No. 1 Gorham Estate	NW cor. NW¼ 21-13-15W	2,999	3,264	3,297
Iron Drilling Co. & Rhodes No. 1 Smith	NE¼ SE¼ NE¼ 1-15-12W	2,943	3,310	3,335

Gorham, Arbuckle, and Reagan zones. One deep well drilled in sec. 19, T. 14 S., R. 14 W. found the Arbuckle to be 83 feet thick and the Reagan beneath it 156 feet thick resting on granite. A second deep dry hole in sec. 23, T. 14 S., R. 15 W. found the Arbuckle 145 feet thick resting directly on granite. In the **Parker** pool seven oil wells were added. A deep well in sec. 18, T. 15 S., R. 12 W. found the Arbuckle to be 187 feet thick. A new producing zone for this pool is the Dodge limestone of the Shawnee group. Forty-seven new oil wells and 13 dry holes were drilled in the **Trapp** pool during the year. The **Bunker Hill** and **Gideon** pools were abandoned during the year.

Oil and gas pools and dry wildcat wells are shown on Figure 24. Pertinent data on the pools including their productions are given in Table 44. Dry wildcat wells are listed in Table 37.

SALINE COUNTY

The 1949 production from 6 active pools was 242,290 barrels of oil and no gas. Wells drilled during 1949: oil 6, gas none, dry 4, total 10 including 2 wildcats. No pools were discovered, revived, or abandoned.

Developments during 1949.—One wildcat in the northeastern corner of the county was drilled on the Tobin farm in sec. 17, T. 13 S., R. 1 W. by the Bay Petroleum Corporation. It was drilled into the Arbuckle dolomite. No shows were reported. The elevation of the well is 1,181 feet.

The other wildcat was drilled by L. B. Jackson in the southeastern corner of the county on the Threlkeld farm in sec. 27, T. 16 S., R. 1 W. All formations down to and including the Mississippian strata were penetrated. No shows of oil or gas were reported. The elevation of the well is 1,309 feet. In the **Salina** pool one new oil producer was added when Charles Sheldon completed a well on the Putnam farm in sec. 7, T. 14 S., R. 2 W. The well produces from the Viola and was rated at 16 barrels of oil per day with 75 barrels of water. In the **Hunter North** pool three new oil wells

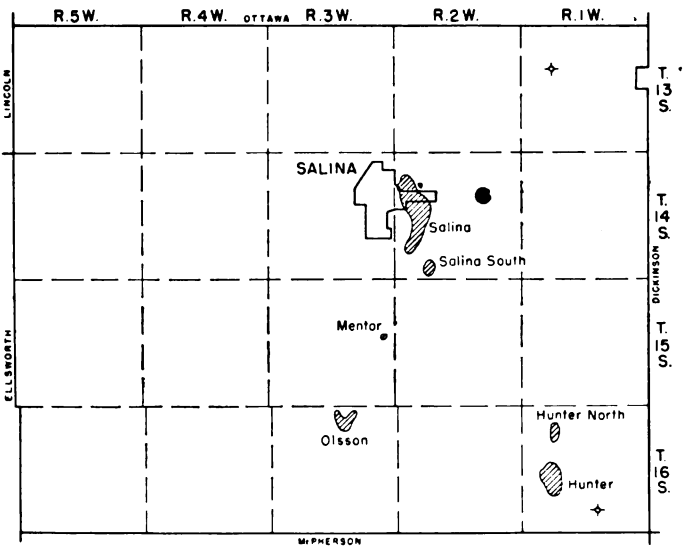

FIG. 25.—Map of Saline County showing oil pools and dry wildcat tests drilled during 1949.

were added. All produce from the top of the Mississippian. One well is rated at 300 barrels, according to the log, the others at about 50 barrels per day each.

In the **Olsson** pool, the oldest in the county, two new oil wells and two dry holes were drilled during 1949. The new wells produce from the Viola limestone. One of the wells is capable of producing 42 barrels per day but the other is rated at 25 barrels.

Oil and gas pools are shown on Figure 25. Pertinent data on the pools including their productions are given in Table 44.

SCOTT COUNTY

The 1949 production from the one active pool was 41,858 barrels of oil and no gas. One dry wildcat well was drilled during the year.

Developments during 1949.—The Texas Company drilled a dry hole on the Lang farm in sec. 1, T. 20 S., R. 34 W. The elevation of the hole is 3,010 feet. Tops of various stratigraphic zones

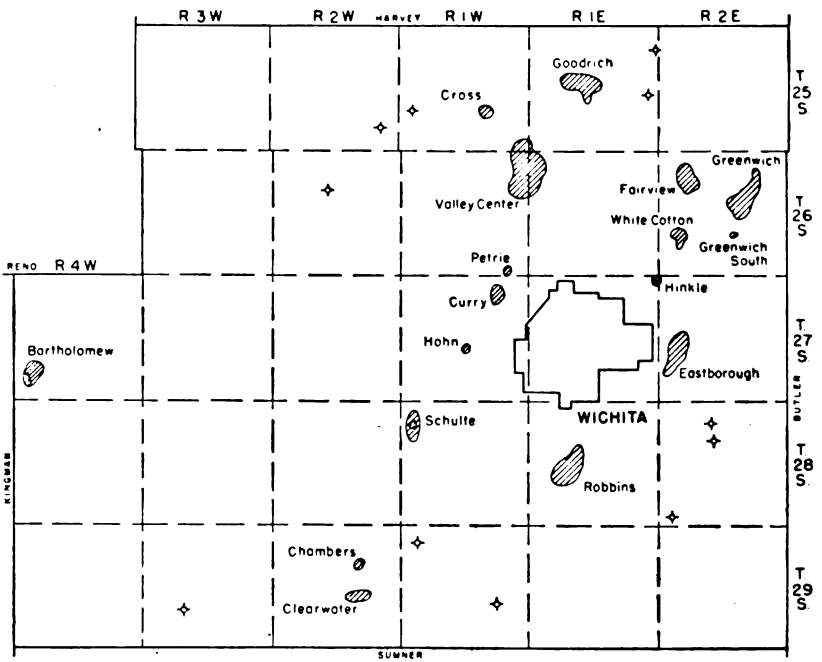

FIG. 26.—Map of Sedgwick County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

are reported as anhydrite, 2,220 feet; Herington, 2,662 feet; Heebner, 3,874 feet; Kansas City-Lansing, 3,912 feet; Mississippian, 4,752 feet; and total depth, 5,105 feet. Perforations, acidations, and tests were made at various depths, but only one small show of oil, between 4,510 and 4,550 feet, was reported.

A part of the county is shown on Plate 2. Pertinent data on the active pool are given in Table 44.

SEDGWICK COUNTY

The 1949 production from 17 active pools was 823,131 barrels of oil and 166,952 thousand cubic feet of gas. Wells drilled during 1949: oil 42, gas none, dry 39, salt water disposal 1, total 82 including 12 wildcats. One new pool was discovered, 2 were combined, none was revived or abandoned.

Developments during 1949.—The ratio of dry holes to successful wells drilled in the county was rather high. One of the wild-

TABLE 38.—*Dry wildcat tests drilled in Sedgwick County during 1949*

Company and farm	Location	Depth to top of Kansas City, feet	Depth to top of Miss., feet	Depth to top of Arbuckle, feet	Total depth, feet
Birmingham-Bartlett Drlg. Co. et al. No. 1 Woulfe	NE cor. NE¼ 12-25-1E	2,522	3,026		3,056
Charles Carlock et al. No. 1 Kuske	SW¼ NW¼ NE¼ 24-25-1E	2,567	3,024		3,027
J. P. Gaty No. 1 Harrison	SW cor. SE¼ 9-28-2E	2,487	2,935	3,360	3,365
J. P. Gaty No. 1 Wineteer	NE cor. NW¼ 9-28-2E	2,495	2,960		3,292
J. W. Wiley et al. No. 1 Stephenson	SE¼ NW¼ SE¼ 31-28-2E	2,603	3,102		3,150
Charles Carlock et al. No. 1 Hyatt	NW cor. NE¼ 30-25-1W	2,825			3,000
C. L. Carlock No. 1 Basore	SW cor. SW¼ 25-25-2W		3,398	3,985	4,090
Max Steinbuchel et al. No. 1 Mannebach	SW cor. SE¼ 9-26-2W	2,835	3,460		3,950
Eckland & Turpin No. 1 Roembach	SW¼ SE¼ SE¼ 6-29-1W	2,895	3,515		3,566
Charles Carlock et al. No. 1 Roy	Cen. E½ SE¼ SW¼ 23-29-1W	2,799	3,375		3,385
Charles Carlock et al. No. 1 Thrift	NE cor. NE¼ 29-29-3W	3,215			3,328

cat tests drilled about one-half mile north of the Bartholomew pool for a short time was considered a separate pool and named the **Bartholomew North.** It was later combined with the Bartholomew pool. Before the close of the year six new wells had been drilled in the **Bartholomew** pool.

There was a great deal of drilling in the older pools. The **Curry** pool, northwest of Wichita, now has three new oil wells, one producing from the Simpson, one from the Kanas City-Lansing, and one from the Mississippian. In the **Chambers** pool there is one additional Mississippian producer. Northeast of Wichita, the **Fairview** and the **Fairview North** pools were combined after one Kansas City-Lansing limestone well and six additional "Burgess" wells were completed. The Kansas City-Lansing is a new producing zone for this part of the county. In the **Greenwich** pool there are five new Mississippian wells. Twelve new "Burgess" wells were completed in the **White Cotton** pool. In the **Robbins** pool eight additional oil wells were added south of Wichita.

Oil and gas pools and wildcat wells are shown on Figure 26. Pertinent data on the pools, including their productions, are given in Table 44. Dry wildcats are listed in Table 38.

SEWARD COUNTY

The production in 1949 from 4 active pools, including the Hugoton field, was 17,483 barrels of oil and 1,949,828 thousand cubic feet of gas from 3 pools. Hugoton gas production is not segregated by counties. Wells drilled during 1949: oil none, gas 41, dry none. No new pools were discovered.

Developments during 1949.—The new gas wells drilled in Seward County during the year are located mainly in two areas. One area is about 5 miles southeast of Satanta where the nine new wells average about 15 million cubic feet of gas per day with the largest capable of delivering more than 30 million cubic feet.

The other area which was actively drilled lies east and northeast of Woods in Ts. 32 and 33 S., R. 34 W. Among the 30 new gas wells, some very good wells are offset by very small wells, producing an anomalous situation. Several new wells are direct offsets of a deep dry hole drilled many years ago in sec. 33, T. 32 S., R. 34 W. One of these offset wells was rated at 12 million cubic feet of gas per day. Drilling during the year extended the area of

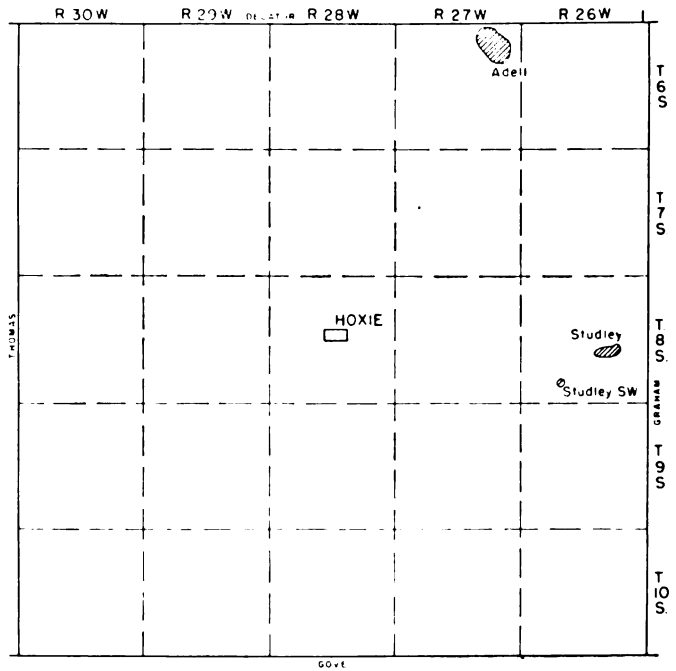

FIG. 27.—Map of Sheridan County showing oil pools.

Hugoton production about 7 miles farther southeast where a well in sec. 3, T. 34 S., R. 34 W. was given an initial capacity of 28 million cubic feet of gas per day. This well is 5 miles north of the old **Liberal** pool, where the first well in southwestern Kansas found gas in 1922. The 1949 drilling added approximately 40,000 acres to the area of the Hugoton field along its southeastern boundary.

Oil and gas pools are shown on Plate 2. Pertinent data on the pools are given in Table 44.

SHERIDAN COUNTY

The 1949 production from 3 active pools was 424,574 barrels of oil and no gas. Wells drilled during 1949: oil none, gas none, dry 4 (no wildcats). There were no new discoveries.

Developments during 1949.—The four test wells completed in Sheridan County during the year are all on the fringes of the **Adell** pool. Although several had good shows of oil in the Kansas

City-Lansing limestone, none was completed as a producer. The location of the oil pools in Sheridan County is shown on Figure 27 and the data on production are given in Table 44.

STAFFORD COUNTY

The 1949 production from 66 pools was 4,393,143 barrels of oil and 1,586,322 thousand cubic feet of gas. Wells drilled during 1949: oil 95, gas none, dry 103, salt water disposal 2, total 200 including 20 wildcats. Ten new pools were discovered, 4 were combined, none was revived or abandoned.

Developments during 1949.—Stafford County was intensively prospected for oil during 1949. Wildcat drilling accounted for 10 new oil pools. The northernmost new pool is the **Black Cloud** in

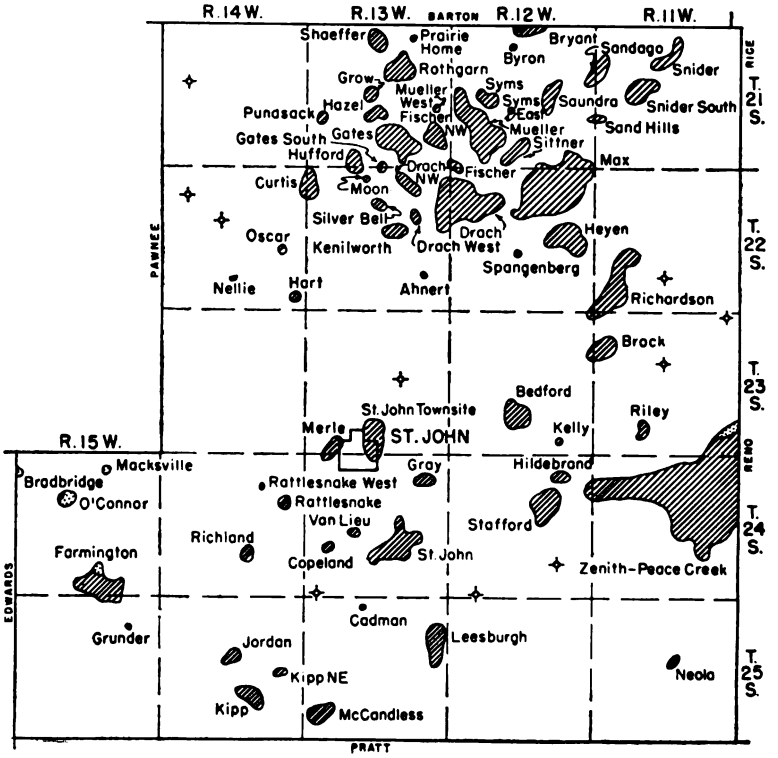

FIG. 28.—Map of Stafford County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil diagonal lines.)

sec. 3, T. 21 S., R. 12 W. E. H. Adair Oil Company drilled the discovery well on the Wolf farm finding oil in the Arbuckle dolomite. The new well has a pumping potential of 169 barrels of oil per day. Later in the year the Black Cloud pool was made part of the **Workman Southeast** pool of Barton County which was combined with the **Byrant** pool. Armer Drilling Company, Inc. found a new pool, the **Prairie Home,** on the Andress farm in sec. 2, T. 21 S., R. 13 W. Here the Arbuckle produces 242 barrels of oil per day. Three miles southwest of the Prairie Home pool the Westgate-Greenland Oil Company found production on the Grow farm in sec. 16. The new pool, named the **Grow,** lies very close to the Rothgarn pool. Another pool is the **Mueller West** which was found by the Midstates Oil Corporation when their first well on the McCrary farm in sec. 24, T. 21 S., R. 13 W. was completed in June. Oil occurs in the Arbuckle dolomite.

The **Gates South** pool was revived when Campbell and W. P. Faulkner got a 125-barrel well in the Arbuckle on the Gates farm in sec. 3, T. 22 S., R. 13 W. Directly south of the Moon pool lies the new **Silver Bell** pool which was found by the J. D. Ferrell Oil Company, Inc. on the Hahn farm in sec. 10, T. 22 S., R. 13 W. Here the oil was found in the Arbuckle dolomite at 3,774 feet.

The **Oscar** pool, located in sec. 24, T. 22 S., R. 14 W. was found by the Anschutz Drilling Company, Inc. on the Smith farm. The **Hart** pool, in sec. 36, was discovered by Musgrove Petroleum Corporation who made a new Arbuckle discovery with their No. 1 Hart well. The Crown Oil Company, Inc. and the Lotus Oil Company found oil in the Kansas City-Lansing limestone between 3,669 and 3,677 feet on the Williams farm in sec. 32, T. 23 S., R. 13 W. This pool was named the **Merle.** The well has a bomb potential of 779 barrels. One mile north of Stafford Armer Drilling Company, Inc. drilled a test hole on the Hildebrand farm in sec. 11, T. 24 S., R. 12 W. The new discovery, called the **Hildebrand South,** flowed 96 barrels of oil per day from the Viola. Later in the year this pool was combined with the Hildebrand.

Many of the old Stafford County oil and gas pools were enlarged during 1949. Drilling during 1949 caused the **Sittner South** pool to be combined with the **Max** pool, the **Rothgarn East** with the **Rothgarn.** There were no developments of especial significance reported from the drilling in the older pools.

TABLE 39.—*Dry wildcat tests drilled in Stafford County during 1949*

Company and farm	Location	Depth to top of K.C.-Lans., feet	Depth to top of Sooy, feet	Depth to top of Viola, feet	Depth to top of Arbuckle, feet	Total depth, feet
Armer Drlg. Co., Inc. No. 1 Asher	SW cor. NW¼ 17-21-14W	3,381	3,629	3,645	3,723	3,775
Alpine Oil & Royalty Co., Inc. et al. No. 1 Figger	NE cor. SE¼ 28-22-11W	3,253	3,545	3,569	3,650	3,706
Harms & Knight Drlg. Co., No. 1 Strobel	NW cor. NW¼ 8-22-14W	3,494	3,782	3,796	3,910	3,940
Bay Petro. Corp. & J. M. Huber Corp. No. 1 Converse	SE¼ NE¼ NW¼ 16-22-14W	3,484	3,791	3,794	3,878	3,889
Armer Drlg. Co., Inc. et al. No. 1 Tretbar	NW cor. NE¼ 1-23-11W	3,240		3,592	3,692	3,745
Armer Drilling Co., Inc. No. 1 Korzuszkiewicz	NE cor. NE¼ 16-23-11W	3,305	3,647	3,660	3,737	3,787
Harms & Knight Drlg. Co. No. 1 Ward	SE cor. SE¼ 15-23-13W	3,434	3,720	3,747	3,909	3,939
W. L. Hartman No. 1 Jordan	NW cor. SE¼ 26-24-12W	3,507	3,846	3,936	4,100	4,132
Lion Oil Co. No. 1 Budde	SW cor. SW¼ 32-24-12W	3,575		3,994	4,173	4,240
Helmerich & Payne, Inc. No. 1 Ellis	SW cor. SE¼ 31-24-13W	3,665	3,990	4,100	4,263	4,300

Eight new wells were added to the **Fischer Northwest** pool and 20 to the Max. The **Drach, Bryant,** and **Kenilworth** pools were each enlarged by four wells.

A dry hole drilled in sec. 4, T. 22 S., R. 13 W., deepened for a salt water disposal well, penetrated 576 feet of Arbuckle rocks according to the log.

Producing zones in the many older pools are given in Table 44.

Oil and gas pools and wildcat wells are shown on Figure 28. Pertinent data on the pools including their productions are given in Table 44. Dry wildcat wells are listed in Table 39.

STANTON COUNTY

The 1949 production—all from the Hugoton field—is not segregated as to counties. Wells drilled during 1949: oil none, gas 9, dry none. There were no new discoveries.

Developments during 1949.—Four of the new gas wells drilled in Stanton County during 1949 are located north of Big Bow, well within the boundaries of the Hugoton field. Two wells were drilled on the western fringes of the field, presumably in order to find its boundary, one in sec. 23 and the other in sec. 32, T. 28 S., R. 40 W. Each was rated at 4 million cubic feet of gas per day. In T. 29 S., R. 39 W. there are three new wells, two of which are rated at 12 million cubic feet or more. These three wells are well within the field boundary. Plate 2 shows the new wells as well as the old in this county. Other details regarding the Hugoton field are given in Table 44.

STEVENS COUNTY

The county lies entirely within the Hugoton gas field, the production of which is not segregated as to counties Wells drilled during 1949: oil none, gas 77, dry none. There were no new discoveries.

Developments during 1949.—During 1949 many of the vacant locations in Stevens County were drilled. Thirty-seven wells were completed within 6 or 8 miles of Moscow in the northern part of the county. They are strong wells, the largest yielding 36 million cubic feet of gas per day. Eight of the new wells are located west of Moscow in T. 31 S., R. 38 W., and T. 31 S., R. 39 W. Two of these are small wells, the others average about 14 million cubic feet per day. Ten of the new wells are located at scattered points southwest of Hugoton. Some of these are twin locations next to wells drilled in the early days of exploration when it was not customary to use acid. About 80 percent of the new producers are large wells. The average productivity of 20 new gas wells during 1949 just south of Woods is nearly 20 million cubic feet of gas per day. The strongest well of this group is located in sec. 2, T. 34 S., R. 35 W. It produced 26.9 million cubic feet per day. One of the new wells is only 3 miles west of the **Liberal** pool. This particular well produced 24.7 million cubic feet of gas per day.

Production and area are shown under Hugoton field in Table 44. Plate 2 shows wells drilled and field boundaries.

SUMNER COUNTY

The 1949 production from 22 pools was 1,643,044 barrels of oil and no gas. Wells drilled during 1949: oil 23, gas none, dry 27, total 50

including 12 wildcats. One new pool was discovered. No pools were combined, abandoned, or revived

Developments during 1949.—One of the wildcat wells was successful in finding a new oil pool, named the **Alton**, in the extreme southern part of the county almost on the Oklahoma line. The Champlin Refining Company drilled the discovery well on the Slentz ranch in sec. 10, T. 35 S., R. 2 W. and found oil in the Simpson between 4,711 and 4,719 feet. The discovery well was rated at 1,298 barrels per day of 46° A. P. I. oil.

The **Zyba Southwest** pool has eight new wells, all producing from the Simpson. In the **Churchill** pool the one new well was rated at 3 barrels of oil and 20 barrels of water per day from the Arbuckle dolomite. Three new producers were added in the **Wellington** pool. In the **Oxford West** pool three new wells were com-

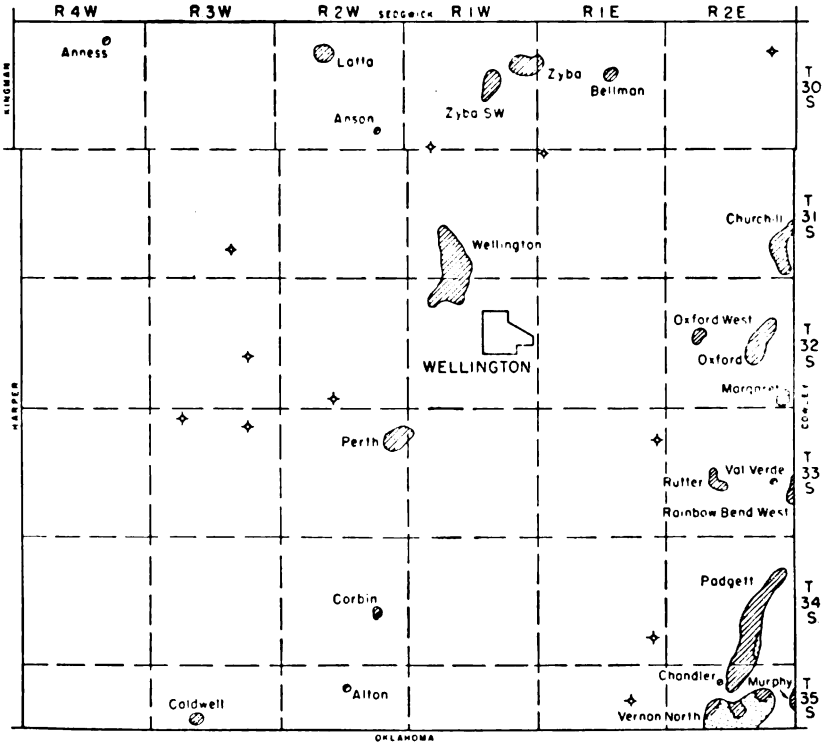

FIG. 29.—Map of Sumner County showing oil and gas pools and dry wildcat tests drilled during 1949. (Gas, dots; oil, diagonal lines.)

TABLE 40.—*Dry wildcat tests drilled in Sumner County during 1949*

Company and farm	Location	Depth to top of Kansas City, feet	Depth to top of Miss., feet	Depth to top of Arbuckle, feet	Total depth, feet
C. L. Carlock et al. No. 1 Apperson	SE cor. NE¼ 11-30-2E	2,552			2,602
C. R. Colpitt No. 1 Fisher	NE¼ NW¼ NW¼ 6-3-1E	2,900	3,550	4,030	4,096
Mizel Brothers No. 1 May	SW cor. NE¼ 12-33-1E		3,389	3,780	3,796
Aladdin Petro. Corp. No. 1 Clifton	SW¼ NE¼ SW¼ 25-34-1E	2,857	3,547		3,865
Ben Gralapp et al. No. 1 Hassebrock	NE cor. SW¼ 11-35-1E		3,548	3,857	3,876
Kirshner et al. No. 1 Railing	SW cor. SW¼ 32-30-1W	3,046	3,674		4,068
Deep Rock Oil Corp. No. 1 Hand	Cen. SE¼ 27-31-3W				2,294
Allen Whiteside & W. J. Martin No. 1 Lauterbach	NE cor. SW¼ 33-32-2W	3,260	3,926		4,408
Ben F. Brack Oil Co., Inc. No. 1 Rose	NW cor. SE¼ 23-32-3W	3,263	3,938	4,491	4,523
F. A. Gillespie & Sons Co. et al. No. 1 Woodbridge	SE cor. SW¼ 2-33-3W	3,314	4,022	4,564	4,605
Atlantic Refining Co. No. 1 Marshall	SE cor. NW¼ 5-33-3W	3,308	3,975	4,508	4,557

pleted in the Simpson sandstone. In the southeastern part of the county there are seven new wells in the **Padgett** pool producing from Mississippian strata.

Oil and gas pools and wildcat wells are shown on Figure 29. Pertinent data on the pools, including their productions, are given in Table 44. Dry wildcat wells are listed in Table 40.

TREGO COUNTY

The 1949 production from 7 pools was 106,622 barrels of oil and no gas. Wells drilled during 1949: oil 1, gas none, dry 2, total 3 including 2 wildcats. One new pool was discovered.

Developments during 1949.—One of the new wildcat wells is the No. 1 Carpenter test completed by B & R Drilling, Inc. as the discovery well of the new **Wakeeney East** pool. After drilling into the Arbuckle dolomite at 4,007 feet and finding it dry, the opera-

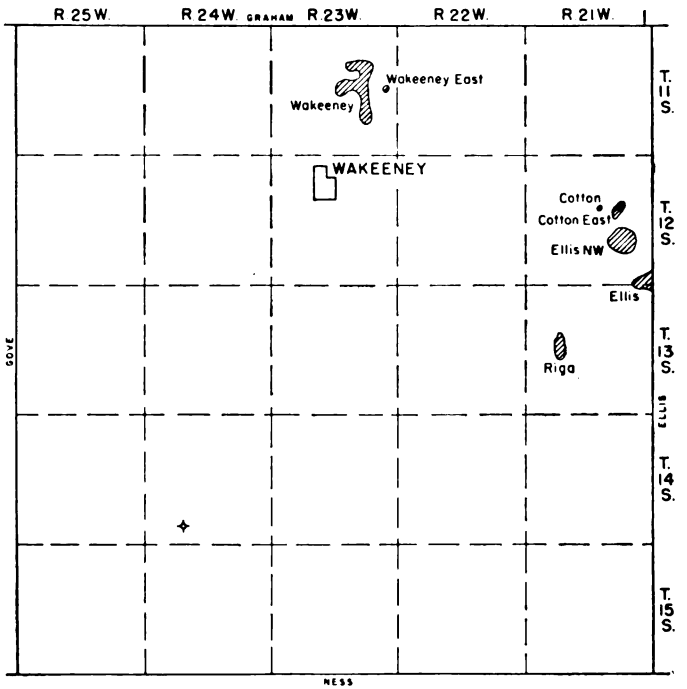

FIG. 30.—Map of Trego County showing oil pools and the dry wildcat test drilled during 1949.

tors plugged back to porous zones in the Kansas City-Lansing limestone. The casing was first perforated between 3,606 and 3,610 feet, but too much water came into the hole at this level. Then, it was perforated between 3,576 and 3,578 feet where testing showed about 51 barrels of oil and 26 percent water. The new pool is about 1 mile east of the **Wakeeney** pool which has so far produced about 750,000 barrels of oil.

One of the other tests, the El Capitan Oil Company, Inc. No. 1 "B" Howatt in sec. 26, T. 11 S., R. 23 W., had a very encouraging show of oil in the Kansas City-Lansing limestone at about 3,663 feet, but was abandoned at 3,681 feet, according to the log. The elevation of the well is 2,363 feet. The Stanolind Oil and Gas Company No. 1 Jesse test in sec. 32, T. 14 S., R. 24 W., at an elevation of 2,248 feet, had some free oil in the Mississippian strata between 4,029 and 4,041 feet. It was abandoned at a total depth of 4,515 feet in the Arbuckle dolomite.

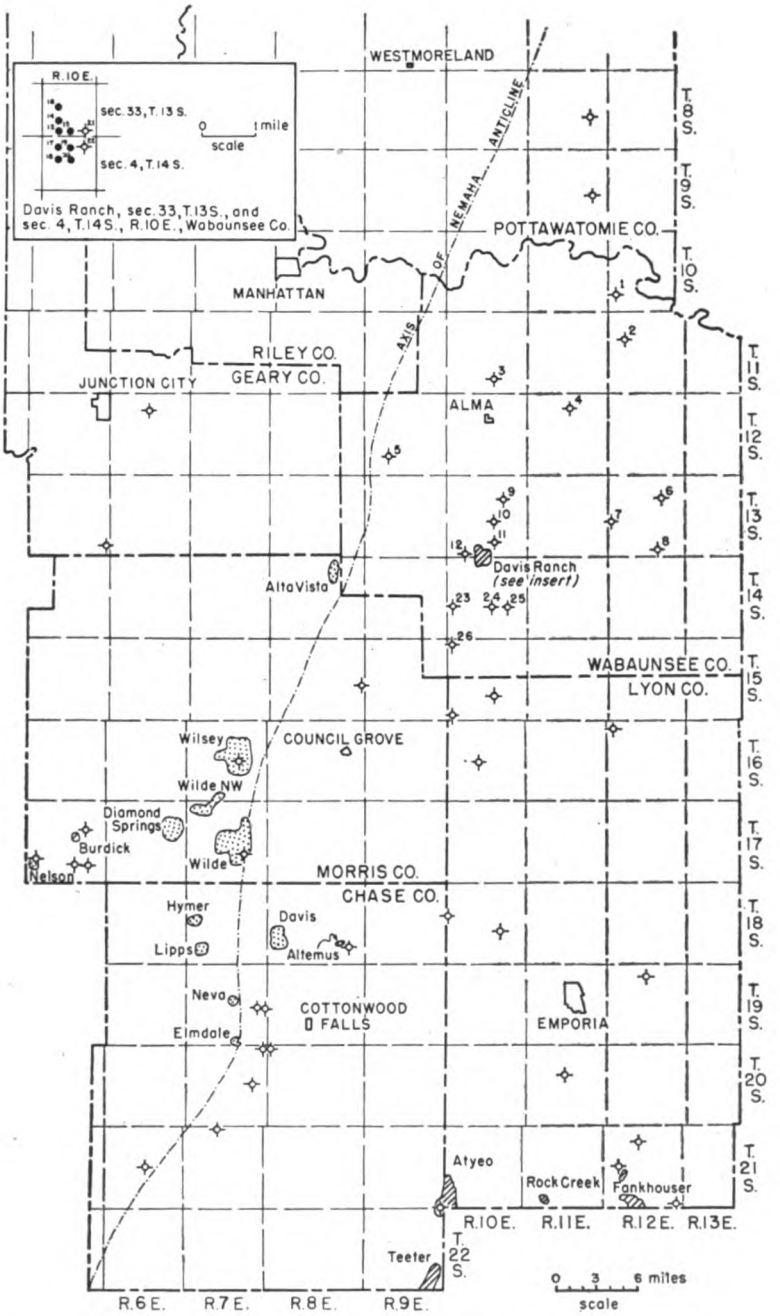

Fig. 31.—Map of Wabaunsee and neighboring counties showing wells drilled during 1949 and older oil and gas pools. (Gas, dots; oil, diagonal lines.)

TABLE 41.—*Data on pool wells in Davis Ranch field, Wabaunsee County*

No. on map	Company and farm	Location	Surface elevation, feet	Depth to top of Kansas City, feet	Depth to top of Miss., feet	Depth to top of Viola, feet	Total depth, feet	Initial daily potential, bbls. oil per day
13	Carter Oil Co. No. 1 Davis "A"	SW¼ SE¼ SW¼ 33-13-10E	1,422	1,678	2,474	3,199	3,206	2,580
14	Carter Oil Co. No. 2 Davis "A"	SW¼ NE¼ SW¼ 33-13-10E	1,433	1,694	2,487	3,208	3,425	2,936
15	Carter Oil Co. No. 3 Davis "A"	SW¼ SW¼ SE¼ 33-13-10E	1,411	1,664	2,468	3,168	3,190	3,000
16	Carter Oil Co. No. 4 Davis "A"	SW¼ SE¼ NW¼ 33-13-10E	1,423	?	2,487	3,186	3,208	3,000
17	Carter Oil Co. No. 1 Davis "B"	SW¼ NE¼ NW¼ 4-14-10E	1,410	1,688	2,459	3,186	3,220	3,000
18	Carter Oil Co. No. 2 Davis "B"	SW¼ SE¼ NW¼ 4-14-10E	1,405	1,672	2,457	3,189	3,205	3,000
19	Carter Oil Co. No. 3 Davis "B"	SW¼ NW¼ NE¼ 4-14-10E	1,401	1,665	2,447	3,163	3,183	3,000
20	Carter Oil Co. No. 4 Davis "B"	SW¼ SW¼ NE¼ 4-14-10E	1,396	1,674	2,455	3,173	3,191	3,000
21	Carter Oil Co. No. 7 Davis "A"	SW¼ SE¼ SE¼ 33-13-10E	1,403	1,709	2,535	3,332	3,341	D&A
22	Carter Oil Co. No. 5 Davis "B"	SW¼ NE¼ NE¼ 4-14-10E	1,396	1,655	2,469	3,282	3,306	D&A

Oil pools and wildcat wells are shown on Figure 30. Pertinent data on the pools including their productions are given in Table 44.

WABAUNSEE COUNTY

The Davis Ranch field was opened in May 1949 and during the remainder of the year produced 46,659 barrels of oil. Eight additional oil wells were drilled in the field and 16 dry wildcats were drilled in the county. Extensive geologic investigations took place.

Developments during 1949.—Oil was found for the first time in Wabaunsee County in May 1949. The **Davis Ranch** pool in Viola limestone was found by the Carter Oil Company No. 1 Davis well, SW¼ SE¼ SW¼ sec. 33, T. 13 S., R. 10 E., at a depth of 3,199 feet. The initial daily production of the discovery well was reported as 2,580 barrels of oil. During the remainder of the year eight additional wells were drilled in the field. The production for the remainder of the year was 46,659 barrels. The location of the Davis Ranch field and of dry wildcat wells drilled in the vicinity are shown in Figure 31.

Table 41 shows data on pool wells in the Davis Ranch field and Table 42 shows data on dry wildcat test wells drilled in Wabaunsee County. Figure 31 is a map of Wabaunsee and neighboring counties showing locations of wells drilled in 1949.

Throughout the remainder of the year after the Davis Ranch discovery several field parties were engaged in surface structural mapping in Wabaunsee County. A considerable amount of core drilling and other types of investigation was carried on.

The Davis Ranch pool is in Viola rocks in the broad trough-like deeper parts of the Forest City Basin a few miles east of the Nemaha anticline. "Hunton" pools in Nemaha and Brown Counties and in the vicinity of Falls City, Nebraska, are in similar geologic setting and in the same trough.

WILSON COUNTY

Oil production totaled 64,944 barrels. There were 10 active oil fields. Gas production was 148,722 thousand cubic feet.

Developments during 1949.—Wilson County produced 64,944 barrels of oil in scattered areas in 10 fields in 1949. Production of

TABLE 42.—*Data on dry wildcat test wells drilled in Wabaunsee County during 1949*

No. on map	Company and farm	Location	Surface elevation, feet	Depth to top of Kansas City, feet	Depth to top of Miss., feet	Depth to top of Viola, feet	Total depth, feet
1	B & R Drlg. et al. No. 1 McKenna	SW¼ SW¼ NE¼ 30-10-12E	1,004	?	2,162	2,936	3,200
2	Helmerich & Payne No. 1 Uhlrig	SE¼ SE¼ SW¼ 8-11-12E	1,069	1,255	2,264	2,957	3,227
3	Carter Oil Co. No. 1 Hankhammer	SW¼ SW¼ SE¼ 27-11-10E	1,218	1,474	2,356	3,144	3,365
4	Thrifty Drlg. Co. No. 1 Strowig	SE¼ SW¼ SW¼ 3-12-11E	1,256	1,494	2,446	3,160	3,383
5	Carter Oil Co. No. 1 Meseke	SE¼ SE¼ NE¼ 29-12-9E	1,346	1,373	absent	2,167	2,421
6	Alf M. Landon et al. No. 1 Waugh	SW¼ SW¼ NW¼ 11-13-12E	1,175	1,311	2,233	2,929	3,142
7	C. W. Chapman et al. No. 1 Schwarting	SW¼ SW¼ NW¼ 19-13-12E	1,378	1,584	2,492	3,180	3,410
8	Landon & Waugh No. 1 Martin	SE¼ SE¼ NE¼ 34-13-12E	1,344	1,462	2,377	3,045	3,270
9	Skelly Oil Co. No. 1 Stuewe	NW¼ NW¼ SW¼ 11-13-10E	1,229	1,498	2,322	3,101	3,320
10	Aladdin & Bakke No. 1 Schutter	NE¼ NW¼ NE¼ 22-13-10E	1,281	1,563	2,390	3,127	3,360
11	Plains Expl. & Sterling No. 1 Schwanke	SW¼ SW¼ SE¼ 27-13-10E	1,357	1,670	2,566	3,283	3,290
12	Westgate-Greenland Oil Co. No. 1 Kirkham	NE¼ NE¼ SW¼ 32-13-10E	1,413	1,714	2,519	3,245	3,381
23	Sterling Drlg. Co. No. 1 Hoch	NW¼ NW¼ SE¼ 19-14-10E	1,495	1,816	2,627	3,330	3,522
24	B & R, Wilcox & Weaver No. 1 Schultz	SE¼ SE¼ NW¼ 22-14-10E	1,523	1,833	2,692	3,417	3,614
25	El Capitan Oil Co. No. 1 Converse	SW¼ SW¼ NE¼ 23-14-10E	1,526	1,833	2,692	3,392	3,409
26	Carter Oil Co. No. 1 Dorgan	SW¼ SW¼ NE¼ 6-15-10E	1,428	1,762	2,569	3,257	3,446

148,722 thousand cubic feet of natural gas was reported in the county.

Oil production and other data on Wilson County oil fields are shown in Table 44. Plate 1 shows locations of areas that produced oil during the year.

One new well, with an initial daily production of 50 barrels of oil was reported in the **Coyville** field.

WOODSON COUNTY

The county produced 614,030 barrels of oil. There were 20 productive oil fields; 85 oil wells were drilled; 2 wildcat tests were dry, and 2 opened new fields. About 1,376 thousand cubic feet of gas was produced.

Developments during 1949.—Woodson County produced 614,030 barrels of oil in 1949. There were 20 productive oil fields. Two oil pools were discovered. About 1,376 thousand cubic feet of gas was produced in the county.

Oil production and other data on Woodson County oil fields are listed in Table 44. Locations of areas that produced oil in 1949 are shown on Plate 1.

The **Batesville Southwest** field was opened in June, when the C. W. Darling No. 1 Hare, SW¼ NW¼ NE¼ sec. 32, T. 25 S., R. 14 E., found oil in Lansing rocks in a zone between depths of 677 and 692 feet. Initial production was reported as 6 barrels of oil per day. No sales of oil were reported from the field during the remainder of the year.

The White and Ellis No. 1 Zlab, Cen. SE¼ sec. 9, T. 24 S., R. 14 E., opened the **Zlab** field in June. A small amount of oil was found in the top of Mississippian rocks in a zone between depths of 1,655 and 1,656 feet. No sales of oil from the field were reported during the remainder of the year.

There were 128 reported wells drilled in Woodson County in 1949. Two were dry wildcat tests. There were 85 new oil wells and

TABLE 43.—*Data on pool wells drilled in Woodson County during 1949*

Field	No. of oil wells	No. of dry holes
Batesville	4	5
Batesville Southwest	1	
Evans	1	
Hoagland	2	5
Humboldt-Chanute	(1 abandoned location)	
Laidlow		1
Neosho Falls		1
Quincy*	2	1
Stephenson		2
Vernon		1
Virgil North	1	1
Weide		2
Winterscheid	73	19
Yates Center		1
Zlab	1	

*Also 1 salt water disposal well.

40 dry holes reported in and near previously established fields. One salt water disposal well was reported. Seventy-four oil wells were drilled in the **Wintercheid** field. It is estimated that in all about 200 holes were drilled in the county.

A dry wildcat, the W. A. Haney and Goodrich No. 1 Lewis, NW¼ NW¼ NE¼ sec. 2, T. 25 S., R. 14 E., was completed in September. The total depth is 1,630 feet. Another dry wildcat test, the Haney and Goodrich No. 1 True, NW¼ SE¼ SW¼ sec. 13, T. 24 S., R. 15 E., was completed in June. Its total depth is 1,525 feet.

Data on pool wells drilled in Woodson County are listed in Table 43.

WYANDOTTE COUNTY

Gas production amounted to 37,303 thousand cubic feet. No oil was produced.

Developments during 1949.—Gas production amounting to 37,303 thousand cubic feet was reported in the **Roberts-Maywood** area. No drilling or other important activities were reported from Wyandotte County.

TABLE 44.—*Oil and gas production in Kansas*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Allen County										
Bronson-Zenia*	17-25-21E		4,000							
5				10,227				34+	"Bartlesville"	700
6				1,954						
Colony West* (3)	15-23-18E	1922	1,200	6,905						
Davis-Bronson*	24-21E		1,600					31+	"Squirrel"	820
1				246				9+	"Bartlesville"	720
2				22,950						
Elsmore Shoestring (11)	5-26-21E	1908	1,500	47,586				14+	"Bartlesville"	650
Elsmore West	12-26-20E	1911	300	Incl. Bourbon Co. production						
12				6,677					"Bartlesville"	775
13				83						
Humboldt-Chanute*	26-18E		13,000							
15				4,983					"Bartlesville"	850
16				638						
17				462						
18				29						
19				117,815						
do						105,108		24+	"Squirrel"	740
Iola (10)	24-18E		4,100	34,402					"Bartlesville"	850
Moran	25-20E	1903	1,300					107+	"Bartlesville"	850
7				3,631				6+	"Bartlesville"	820
8				440						
9				2,530						
Neosho Falls* (4)	29-23-17E	1928	600	10,669						
Savonburg*§	26-21E	1903		Incl. in Bourbon Co.				6+	"Squirrel"	950
Seibert (14)	5-26-20E		800	653					Mississippian	1,200
Miscellaneous				5,488		293,393			"Bartlesville"	680
Total Allen County oil			28,400	278,368				207+		
Total Allen County gas						398,501		24+		

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Anderson County										
Bush City Shoestring	28-20-21E	1921	9,000	256,487				82+	"Squirrel"	620
Centerville*	10-21-22E	1920	400	1,804					"Squirrel"	480
									"Bartlesville"	720
Colony-Welda	4-23-19E	1916	4,200	23,390				80+	"Weiser"	600
									"Squirrel"	780
Colony West*	15-23-18E	1922	900	21,442				48	"Squirrel"	825
Garnett Shoestring	32-20-20E	1904	1,500	49,747				18+	"Squirrel"	700
									"Garnett"	800
Kincaid	10-23-21E	1921	900	38,601					"Bartlesville"	750
do						11,000		4+	"Bartlesville"	750
Selma	9-22-21E	1929	800	10,949					"Bartlesville"	700
Miscellaneous						6,598				
Total Anderson County oil			17,700	402,420				228+		
Total Anderson County gas						17,598		4+		
Barber County										
Aetna	13-34-15W	1935	500			57,244	807,924 est.	2	Mississippian	4,850
									Viola	5,215
Boggs	17-33-12W	1946	1,250	260,973	755,407			29	Simpson	4,806
do	8-33-12W	1947	80			no report	none		Simpson	4,824
Clara*	36-29-14W	1948	40	9,538	10,406			1	Simpson	4,472
do	2-30-14W	1944	280			no report	717,792		Simpson	4,435
									Viola	4,509
									Arbuckle	4,540
Cottonwood Creek	21-30-14W	1948	160			no report	none		Simpson	4,582
Deerhead	22-32-15W	1943	400	93,008	450,422			13	Viola	4,950
do	26-32-15W	1942	640			no report	1,693,763		Viola	4,931
DeGeer	2-33-15W	1948	500	307,419	442,159			15	Viola	5,176
Donald	33-31-15W	1946	160			no report	none		"Miss. lime"	4,697
Lake City	7-31-13W	1937	200					4	Viola	4,435
				24,432	274,813				Simpson	4,530
									Arbuckle	4,607
do	7-31-13W	1945	40			Incl. with Skinner North				
Medicine Lodge	13-33-13W	1937		none	45,703				"Misener"	4,845
do	13-33-13W	1927	7,200			4,818,818	132,741,841	46	"Chat"	4,455
Medicine Lodge NE	8-33-12W	1945	300			Incl. with Medicine Lodge			"Douglas sand"	3,812
									Simpson	4,860
Rhodes	15-33-11W	1949	130	8,163	8,163			4	Mississippian	4,551

Skinner	29-31-14W	1943	1,000	312,272	1,249,465			58	Viola Simpson	4,626 4,422
Skinner North	29-31-14W		1,590	Incl. with Skinner					Viola Arbuckle	
do	17-31-14W		5,200			1,937,063	19,658,977	21	Viola	4,630
Skinner South	32-31-14W	1944	200			Inc. with Skinner North.			"Douglas sand"	4,023
Sun City	35-30-15W	1941	500	81,913	1,320,778			11	K.C.-Lans.	4,344
Turkey Creek	20-30-15W	1943	40	2,497	23,934			1	Simpson	4,438
Whelan	32-31-11W	1934	1,000	153,330	2,050,967			21	"Chat"	4,355
do	32-31-11W	1934	640			2,905,786	8,955,263	11	"Chat"	4,355
Total Barber County oil			6,650	1,253,545	6,632,217			157		
Total Barber County gas			15,400			9,718,911	164,575,560	80		

Barton County

Adolph	16-20-15W	1947	160			no report	none		Arbuckle	3,734
Ainsworth South	10-17-13W	1937	1,550	408,477	2,547,973			52	Arbuckle	3,390
Ames	22-18-11W	1943	750	141,480	853,849			26	K.C.-Lans. Arbuckle	3,042 3,348
Ames Northwest	9-18-11W	1947	80	1,598	7,917			2	K.C.-Lans. Arbuckle	3,106 3,312
Ash Creek*	31-20-15W	1947	600	99,322	382,494			23	Arbuckle	3,787
do*‡	31-20-15W	1948	50			559,000 est.			Arbuckle	3,769
Axman	19-17-14W	1949	100	2,863	2,863			2	Arbuckle	3,400
Bahr	26-18-15W	1943	40	no report	29,925				Reagan	3,495
Barrett	36-16-14W	1943	600	8,759	96,535			3	Arbuckle	3,463
Beaver	16-16-12W	1934	1,600	266,713	2,485,267			43	Oread Arbuckle Reagan	2,885 3,348 3,335
Beaver North	4-16-12W	1937	280	64,835	489,314			8	Arbuckle	3,316
Beaver Northwest	6-16-12W	1942	550	205,535	404,500			21	Shawnee K.C.-Lans. Sooy Arbuckle	 3,066
Beaver South	27-16-12W	1945	160	5,979	47,130			3	Sooy Arbuckle	 3,359
Behrens	6-20-15W	1944	950	78,866	383,769			21	Arbuckle	3,719
do‡	6-20-15W	1944	50			559,000 est.				
Bergtal	22-20-15W	1941	40	300	1,631			1	Arbuckle	
do	22-20-15W	1941	500			403,161		4	Arbuckle	3,689
Bloomer*	36-17-11W	1936	1,170	653,777	9,206,078			77	K.C.-Lans. Arbuckle	3,044 3,257
Boyd	4-18-14W	1942	2,000	341,582	1,849,002			39	K.C.-Lans. Arbuckle	 3,438
Bryant*	27-20-12W	1948	2,350	220,791	292,022			37	Arbuckle	3,383

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Bryant Southeast	26-20-12W	1949	180	52,791	52,791			9	Arbuckle	3,369
Buckbee	14-20-12W	1949	40	no report	none				Arbuckle	3,352
Carroll	21-17-14W	1944	1,200	291,926	914,690			36	K.C.-Lans.	3,109
									Arbuckle	3,356
Carroll Southwest	32-17-14W	1947	80	10,822	26,056			4	K.C.-Lans.	3,193
Cheyenne View	12-19-12W	1949	60	443	443			1	Arbuckle	3,390
Cheyenne View SW	14-19-12W	1949	40	469	469			1	K.C.-Lans.	3,141
Davidson*	4-16-11W	1930	390	9,678	220,436			4	K.C.-Lans.	3,016
									Sooy	3,317
									Arbuckle	3,314
Dundee	29-20-14W	1945	40	2,591	7,553			1	Arbuckle	3,507
do	29-20-14W	1945	160			380,545	452,926	4	Arbuckle	3,607
Eberhardt	14-19-11W	1935	320	19,282	375,242			8	K.C.-Lans.	3,194
									Arbuckle	3,311
do	14-19-11W	1935	300			9,444	303,726	1		
Ellinwood North	33-19-11W	1937	60	3,761	77,708			1	Arbuckle	3,328
Esfeld	15-16-11W	1947	40	1,934	5,343			1	Arbuckle	3,343
Eveleigh	11-18-14W	1943	1,080	282,959	726,535			33	K.C.-Lans.	3,177
									Arbuckle	3,339
									Pre-Cambrian	3,311
Feltes North	2-16-12W	1944	40	no report					Arbuckle	3,338
Feltes Northwest	3-16-12W	1945	360	51,669	241,033			6	Arbuckle	3,342
Fransen	6-20-12W	1949	40	295	295			1	K.C.-Lans.	3,196
Hagan	20-20-11W	1938	160	32,338	331,191			4	Arbuckle	3,323
Hammer	35-19-12W	1940	320	57,539	294,749			11	Arbuckle	3,348
Hammer North	23-19-12W	1949	500	95,803	95,803			19	K.C.-Lans.	3,222
									Arbuckle	3,344
Heizer	16-19-14W	1935	40	2,666	40,157			1	K.C.-Lans.	3,228
Hiss	31-20-13W	1936	300	125,533	1,102,282			17	K.C.-Lans.	3,270
Hiss Southeast	32-20-13W	1948	250	26,616	27,203			7	K.C.-Lans.	3,414
									Arbuckle	3,545
Hiss West	36-20-14W	1945	400	included with Hiss					K.C.-Lans.	3,250
Hoisington	21-17-13W	1938	600	235,932	885,594			32	K.C.-Lans.	3,222
									Arbuckle	3,440
Homestead	22-18-13W	1948	40	3,366	7,464			1	Arbuckle	3,310
Kaufman*	33-15-12W	1947	40	1,160	2,748			1	K.C.-Lans.	
									Arbuckle	3,311
									Pre-Cambrian	
Klug	28-17-13W	1946	80	5,181	28,395			2	Arbuckle	3,414
Klug North	27-17-13W	1948	60	19,373	30,048			2	Arbuckle	3,377
Kowalsky	32-20-11W	1941	200	45,219	135,181			7	Arbuckle	3,378

Kowalsky Northwest	30-20-11W	1947	460	91,507	159,578			12	K.C.-Lans. Arbuckle	3,185 3,381
Kraft-Prusa*	10-17-11W	1937	24,060	5,873,578	47,132,469			663	Shawnee K.C.-Lans. Gorham Arbuckle Reagan Pre-Cambrian	2,885 3,160 3,335 3,281 3,310
Kraft-Prusa NE	36-16-11W	1941	300	44,394	211,185			7	K.C.-Lans. Arbuckle	3,250 3,351
Krier	30-16-11W	1944	80			60,850 within Kraft-Prusa pool	318,067	1		
Lake Barton	21-18-13W	1948	80	3,817	4,276			3	Arbuckle	3,372
Lanterman	15-19-11W	1934	500	20,076	819,026			8	K.C.-Lans. Arbuckle	3,109 3,235
Laudick	28-16-12W	1948	300	74,688	104,304			9	Arbuckle	3,382
Marchand West	24-20-12W	1939		combined with Bryant						
McCauley	34-17-13W	1949	100	3,636	3,636			1	K.C.-Lans.	3,276
Meadowside	24-18-11W	1949	100	16,590	16,590			4	Arbuckle K.C.-Lans.	3,284 3,079
Merten Northeast	36-18-15W	1946	40	1,621	12,727			1	Arbuckle	3,494
Merten Southeast	12-19-15W	1949	40	5,962	5,962			1	Reagan	3,567
Mue-Tam	35-20-11W	1942	40	no report	17,731				Arbuckle	3,312
Odin	3-17-12W	1948	40	no report	24,843				Arbuckle	3,321
Otis-Albert*	30-18-15W	1935	6,400	740,795	2,993,313			104	Reagan	3,601
do*	11-18-16W	1930	7,000			1,430,423		18 est.	Neva Reagan	 3,507
Pawnee Rock*	13-20-16W	1936	500	39,990	158,326			9	Arbuckle	3,832
do*‡	19&20-15&16W	1936	20			223,600 est.				
Pawnee Rock East	17-20-15W	1941	40	2,330	20,847			1	Arbuckle	3,814
Pritchard	34-20-14W	1944	770	128,470	742,509			15	Arbuckle	3,455
Rick*	1-19-11W	1936	600	50,010	778,287			11	K.C.-Lans. Arbuckle	3,106 3,355
do	11-19-11W	1941	60			no report	360,722		Arbuckle	3,355
Roesler	14-18-11W	1943	40	3,123	32,051			1	Arbuckle	3,291
Rolling Green	36-20-13W	1948	100	5,271	12,305			3	K.C.-Lans.	3,257
Rolling Green East	30-20-12W	1949	80	1,777	1,777			2	Arbuckle	3,491
Rowland	32-17-13W	1949	60	1,607	1,607			2	Arbuckle	3,323
St Peter	5-19-11W	1944	100	13,825	74,804			2	K.C.-Lans. Arbuckle	 3,387
Silica*	12-20-11W	1931	13,480	2,753,270	44,634,149			376	K.C.-Lans. Arbuckle	2,955 3,328
Silica South*	24-20-11W	1935	3,000	1,465,715	17,338,274			143	K.C.-Lans. Arbuckle	3,035 3,268
Sunflower	8-17-12W	1949	40	no report	none				Arbuckle	3,376
Sunny Valley	7-20-12W	1949	200	79,765	79,765			11	K.C.-Lans.	3,230

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Trapp*	23-15-14W	1936	13,700	3,172,479	38,543,065			437	Shawnee Dodge K.C.-Lans. Arbuckle	2,889 2,966 3,062 3,252
Unruh	24-20-15W	1945	500	23,613	82,350			6	Arbuckle	3,641
do	24-20-15W	1945	500			1,725,608	8,201,702	11	Arbuckle	3,641
Workman	33-20-12W	1944	40	2,675	17,937			1	Arbuckle	3,407
Workman Southeast	34-20-12W	1948		combined with Bryant					Arbuckle	3,389
Yeakley	17-18-13W	1948		combined with Eveleigh						
Misc. gas wells								22		
Total Barton County oil			85,490	18,500,807	178,733,371			2,401		
Total Barton County gas			8,880			5,351,631	9,637,143	61		
Bourbon County										
Bronson-Zenia*	17-25-21E		300	300				4	"Bartlesville"	665
Davis-Bronson*	23-21E		800	13,112				9+	"Bartlesville"	560
Hepler*	27-22E	1917	300	688					"Bartlesville"	
Savonburg*§	26-21E	1903		1,274				6	"Bartlesville"	650
Miscellaneous				Incl. Allen Co. production		15,356				
Total Bourbon County oil			1,400	15,374				19+		
Total Bourbon County gas						15,356				
Brown County										
Livengood	3-1-15E	1944	300	5,540	61,689			3	"Hunton"	2,580
Butler County										
Allen	1-26-3E	1943	200	34,420					Mississippian	2,700
Augusta	21-28-4E	1914	7,800	471,015	36,080,180			137+	Lansing Kansas City Marmaton Ordovician Arbuckle	1,700 2,000 2,200 2,445 2,600

Augusta North	28-27-4E	1914	1,600	102,411	14,227,681	63	Lansing Kansas City Ordovician Arbuckle	1,650 1,950 2,380 2,410
Bausinger	24-27-3E	1929	160	6,805		4	"Wilcox"	3,050
Benton	26-3E	1925	100	2,198			Miss. "Chat."	2,965
Blankenship*	26-8E	1921	3,200	68,520	667,348	28+	"Bartlesville"	2,650
Brandt-Sensebaugh	22-28-7E	1925	2,500	54,219	1,631,099		Miss. "Chat"	2,692
Butwick	7-26-3E	1949	200	5,234	5,234	1	Mississippian	2,860
Butwick Northeast	7-26-3E	1949	120	2,037	2,037	3	Miss. "Chat"	2,820
Combs*	5-30-5E	1947	200	26,785		5	"Bartlesville" Mississippian	2,820 2,850
Combs Northeast	27-29-5E	1948	200	8,149	8,149		"Bartlesville"	2,810
DeMoss	8-28-7E	1934	900	28,489		3+	"Bartlesville" "Burgess"	2,650 2,680
Dixon (Eckel West)	12-27-6E	1946	200	1,562	6,998		Kansas City Mississippian	2,160
Douglass	21-29-4E	1916	2,500	7,747		25	Lans.-K.C. Ordovician	1,790 3,000
Eckel	7-27-7E	1940	200	2,839	54,175		Lans.-K.C.	2,190
Elbing*	18-23-4E	1918	3,700	227,585	1,569,039	60+	Kansas City Mississippian Viola	2,120 2,400 2,530
El Dorado	29-25-5E	1915	26,900	3,074,981	201,583,790	1,500+	Lansing Kansas City Viola Simpson Arbuckle	1,700 2,000 2,500 2,510 2,550
Ferrell	28-28-8E	1939	800	72,856	784,695	28	Mississippian	2,647
Fox-Bush	24-29-5E	1917	5,200	328,031	1,978,873	91+	"Bartlesville"	2,730
Garden	32-26-6E	1925	1,100	37,378		8+	"Bartlesville"	2,760
Guyot	5-29-5E	1948	400	4,800	4,800		"Bartlesville"	2,800
Hannah	29-8E	1936	1,100	1,746	6,341	2	Kansas City	2,120
Haverhill	34-27-5E	1927	1,800	72,247	4,192,649	48+	"Bartlesville"	2,700
Hazlett North	30-23-5E	1949	300	32,577	32,577	8	Miss. "Chat"	2,472
Hickory Creek	11-28-5E	1946	400	123,229	562,340	9+	"Bartlesville" Mississippian	2,685 2,700
Joseph	18-24-5E	1947	40	1,236	2,504	1	Miss. "Chat"	2,491
Keighley	22-27-7E	1925	1,800	24,958		12+	"Bartlesville" Simpson	2,650 3,148
Kramer-Stern	3-28-6E	1926	4,700	224,986		12+	Simpson Arbuckle	3,020 3,040
Leon	19-27-6E	1922	1,000	25,272	2,387,104	20	Miss. "Chat" Viola	2,660 3,050
Long	15-26-7E	1949	40	348	348	1	Mississippian	2,780
Lucas	6-27-8E	1946	80	2,216	8,610	2	"Bartlesville"	2,680
McCullough	1-28-6E	1929	160	2,573	482,667		"Wilcox"	3,169

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Parsley	3-26-3E	1949	100	15,340	15,340			1	Mississippian	2,710
Pettit	17-28-6E	1926	40	2,284				1	"Wilcox"	3,180
Pierce	28-25-4E	1926	700	112,356				30	Miss. "Chat"	2,550
Potwin	31-24-4E	1917	5,900	142,444	7,147,943			78	Kansas City Mississippian	2,550 2,660
Potwin South	18-25-4E	1925	120	5,006				3	Miss. "Chat"	2,650
Reynolds-Schaffer	9-27-6E	1922	1,500	73,141				4+	Kansas City Mississippian Viola	2,375 2,780 3,141
Robison (Allen North)	36-25-3E	1947	800	39,913	77,077				Mississippian	2,680
Rombold	4-26-3E	1949	40	2,249	2,249			1	Mississippian	2,770
Salter	23-28-3E	1946	800	251,370	563,668			34	Simpson	3,000
Semisch	4-29-6E	1947	200	29,621	44,447				"Bartlesville"	2,810
Seward	27-27-7E	1926	600	7,951	1,022,059			4+	"Bartlesville"	2,650
Shinn	19-29-8E	1946	1,100	96,380	306,637			11	Mississippian	2,766
Smock-Sluss	2-27-5E	1917	400	101,129				21+	"Bartlesville" Viola	2,700 3,000
Snowden-McSweeney	34-28-6E	1930	500	14,797					Mississippian	2,833
Steinhoff	28-29-6E	1926	80	2,880				2	Mississippian	2,803
Towanda	5-26-4E	1948	200	141,841	181,717			12	Mississippian Viola	2,400 2,460
Whitewater	32-25-4E	1949	300	28,678	28,678			5	Viola	2,625
Womack	19-28-6E	1947	200	6,944					"Bartlesville" Kansas City	2,620 2,190
Young	27-26-7E	1920	1,700	104,244				27+	Mississippian	2,650
Totals for Butler County			84,880	6,258,017	275,722,071			2,303+		
Chase County										
Altemus	26-18-8E		40			local use only		1	Permian	
Atyeo*	30-21-10E	1925	500	5,780				2	"Bartlesville"	2,250
Davis	18-8E	1929	640			49,276		29	Permian	375
Elmdale	19-7E		150			4,930		5	Permian Wabaunsee	500 800
Hymer	18-7E		80			local use only		2	Permian	
Lipps	32-18-7E	1925	300			5,570		3	Douglas	1,150
Neva	19-7E	1925	80			local use only		2	Permian	350

Teeter*	16-23-9E	1920	1,600	31,138		17	"Bartlesville"	2,500
Total Chase County oil			2,100	36,918		19		
Total Chase County gas			1,290		59,776	42		

Chautauqua County

Berlin (6)	32-11E		40	1,042		1	Miss. "Chat"	1,930
Borroum (27)	20-34-9E	1926	160	4,810		6	Marmaton	1,780
Elgin	34-10E		5,500				"Peru"	1,520
22				356				
23				2,949				
24				28,048				
25				8,861				
Frazier (10)	33-13E		200	272				
Hale-Inge*	32-12E	1907	2,400				"Peru"	1,160
1				4,338		12		
2				10,285		58		
Kingston (3)	18-32-11E	1926	300	2,483			Miss. "Chat"	1,850
							Arbuckle	2,176
Landon-Floyd (7)	23-32-10E	1936	700	31,661		29	Mississippian	2,000
McAllister (8)	28-32-10E	1925	300	9,091		5	Arbuckle	2,270
McGlasson (17)	11-33-9E	1947	160	3,593			Miss. "Chat"	2,250
Malone (5)	18-32-10E		40	613		1	Ordovician	2,340
Niotaze	34-13E		1,200				"Redd"¶	690
20				62		3	"Peru"	825
21				7,618		27+		
Oliver (4)	32-11E	1935	800	11,207		18		
Peru-Sedan	34-11E	1900	46,200				"Peru"¶	1,200
							Mississippian	2,000
11				169		5		
12				6,906		35		
13				823		4		
14				664,159		1,048+		
15				1,122		12		
16				640		6		
Wauneta (26)	34-9E		100	412			"Peru"	1,670
							Mississippian	2,100
Wayside-Havana*	34-13E	1904	600				"Wayside"¶	575
							"Weiser"	700
							"Bartlesville"	1,200
18				1,186		9		
19				2,559		15		
Wiggam	34-32-10E		200			3	"Weiser"	1,600
9				1,574				
Totals for Chautauqua County			58,900	806,839		1,297+		

TABLE 44.—*Oil and gas production in* ***Kansas, continued***

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Coffey County										
Dunaway*	34-22-13E	1922	1,500	32,066					"Burgess"	1,850
									Mississippian	1,878
									Ordovician	2,200
Van Noy	7-23-15E	1917	1,200	6,524				16	"Peru"	1,170
									Mississippian	1,540
Virgil North*	22-23-13E	1920	1,200	36,741					"Bartlesville"	1,585
									Mississippian	1,838
Winterscheid*	23-14E	1920	500	7,579				6+	"Bartlesville"	1,630
									Mississippian	1,750
"George"	33-22-16E		400	2,641						
Totals for Coffey County			4,800	85,551				22+		
Cowley County										
Baird	17-34-3E	1925	400	11,684				2+	"Bartlesville"	3,285
									Mississippian	3,350
Baird East	15-34-3E	1940	40	2,384				1	"Bartlesville"	3,200
Biddle	7-32-5E	1922	750	24,157				24	Kansas City	2,000
									"Stalnaker"	2,300
Box	28-30-7E	1948	500	36,501	53,893			6	Mississippian	2,840
Brown	13-31-7E	1922	400	3,575	241,770				Kansas City	2,100
Burden	31-31-6E	1926	1,100	27,643				28	"Bartlesville"	2,900
Clark	6-31-4E	1914	160	10,101				5	"Bartlesville"	2,840
Clover	31-7E		40	956	18,671			1	Kansas City	2,200
									Mississippian	2,800
Combs*	5-30-5E	1947	450	51,944	202,415			11	"Bartlesville"	2,823
									Mississippian	2,850
Couch	13-30-5E	1937	1,300	115,387	1,631,272			22+	"Bartlesville"	2,800
Countryman	4-33-7E	1925	600	12,468					"Layton"	1,950
									Mississippian	2,870
David	35-30-4E	1935	600	38,610	1,037,586			23	"Bartlesville"	2,900
David South	11-30-4E	1934	300	18,291	161,635			5+	"Bartlesville"	2,760
									Arbuckle	3,463
Deichman	24-31-4E	1941	600	76,976	731,604			22	"Bartlesville"	2,900
									Mississippian	3,000
Doane	36-33-6E	1947	80	2,272	7,674			2	Mississippian	2,878
									Arbuckle	3,140
Eastman	5-31-6E	1924	800	40,782				21+	"Bartlesville"	2,890
Elrod	4-32-5E	1918	40	652				1	"Layton"	2,435

Enterprise	35-33-3E	1948	40	1,162	2,038	1	"Bartlesville"	3,285
Esch	33-33-6E	1928	400	62,532		5	"Bartlesville"	2,900
Falls City	35-7E	1916	160	5,587	1,260,581		"Layton"	2,000
Ferguson West	21-30-8E	1934	200	3,716		6	Kansas City	2,180
Frog Hollow	20-32-5E	1937	1,100	292,766	3,699,886	49	"Bartlesville"	3,000
Frog Hollow East	15-32-5E	1941	200	17,020	221,756	7	"Bartlesville"	3,000
Geuda Springs	5-34-3E		500	15,350	479,426	3+	"Bartlesville"	3,300
							Miss. "Chat"	3,345
Gibson	29-34-3E	1941	400	35,325	323,316	11	"Bartlesville"	3,350
							Mississippian	3,400
Graham	3-33-3E	1924	400	31,916	2,670,326	9	"Layton"	2,550
							Arbuckle	3,518
Grand Summit*	4-31-8E	1926	40	314		1	Kansas City	2,000
Henderson	26-32-3E	1942	300	6,285	122,087	6	Kansas City	2,690
							Arbuckle	3,419
Hittle	28-31-4E		700	327,604	8,107,476	51	Kansas City	2,400
							Arbuckle	3,280
Hower	32-33-3E	1935	200	5,004	62,539	3	"Bartlesville"	3,320
Mansur	25-31-6E	1949	80	1,496	1,496	2	"Layton"	2,170
Murphy*	7-35-3E	1933	900	81,396		24	"Bartlesville"	3,450
							Miss. "Chat"	3,500
Otto	25-34-6E	1927	400	8,102		1+	Miss. "Chat"	3,017
Rahn	13-34-5E	1939	1,300	69,604	1,338,217	16+	"Bartlesville"	2,900
Rahn Northeast	27-33-6E	1949	40	4,629	4,629	1	"Bartlesville"	2,902
Rahn Southwest	28-34-5E	1943	40	418	3,141	1	"Bartlesville"	3,019
Rainbow Bend	20-33-3E	1923	2,000	198,989	15,162,759	73	"Burgess"	3,200
Rainbow Bend NE	15-33-3E	1945	40	3,229	15,714	1	"Bartlesville"	3,213
Rainbow Bend West*	19-33-3E		300	6,469		4	"Burgess"	3,200
							Arbuckle	3,550
Rock	15-30-4E		1,600	169,424	3,023,659	29+	"Bartlesville"	2,800
Rock North	3-30-4E	1937	300	5,263	125,872	4	"Bartlesville"	2,800
Seacat	26-33-4E	1944	100	1,741	11,977		Mississippian	3,100
School Creek	15-32-7E	1947	160	4,606	7,842		"Bartlesville"	2,800
Slick-Carson	19-32-3E	1924	300	35,518	3,423,844	15	"Layton"	2,600
							"Bartlesville"	3,150
							Arbuckle	3,450
Smith	31-3E	1917	300	3,320		7	"Bartlesville"	3,050
State	15-32-4E	1926	1,100	25,302		10	"Layton"	2,400
							Arbuckle	3,300
Stayton	32-32-4E	1949	40	1,302	1,302	1	"Bartlesville"	3,100
Thurlow	8-33-3E	1927	80	33,068		2	Simpson	3,500
Trees	19-30-4E	1935	500	38,379		11	"Bartlesville"	2,875
Turner	30-32-6E	1937	160	7,043	265,736	4	"Layton"	2,232
Turner North	18-32-6E	1948	40	652			"Layton"	2,286
Udall	30-3E		40	2,249		1	Arbuckle	2,850

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Weathered	28-31-3E	1935	800	47,805	2,602,524			16	"Stalnaker"	2,080
									K.C.-Lans.	2,480
									Mississippian	3,020
									Arbuckle	3,250
Winfield	32-5E	1914	2,000	83,968				58	Admire	600
									"Peacock"	1,400
									"Layton"	2,300
									"Bartlesville"	3,050
									Arbuckle	3,300
Winfield South	1-33-4E	1945	40	1,943	4,263			1	"Hoover"	1,400
Miscellaneous						416,754		11		
Total Cowley County oil			25,260	2,114,879	47,028,926			608+		
Total Cowley County gas						416,754		11		
Crawford County										
"Billington"	3-31-22E		300	50						
Fair Oak	33-28-22E		400	2,067					"Bartlesville"	400
Hepler*	27-22E	1917	200	115					"Bartlesville"	
McCune	30-22E	1929	5,800	43,027					"Bartlesville"	
St. Paul-Walnut*	28-21E		500	444					"Bartlesville"	425
Walnut Southeast	28-22E		600	15,378				9+	"Bartlesville"	400
Miscellaneous				8,243						
Totals for Crawford County			7,800	61,324				9+		
Dickinson County										
Bonaccord	30-14-1E	1943	40	1,646	24,238			1	"Burgess"	2,483
Lost Springs*	16-4E		2,700	194,264				23	Miss. "Chat"	2,300
Lost Springs North	22-16-4E	1945	80	2,918	88,161			2	Miss. "Chat"	2,300
Lost Springs NE	26-16-4E	1947	80	3,242	3,552			2	Miss. "Chat"	2,300
Totals for Dickinson County			2,900	202,070	115,951			28		
Douglas County										
Baldwin	12-15-20E	1919	500	4,000+					"Squirrel"	800

Edwards County

Belpre	8-25-16W	1942	80		903,166	5,692,177	5	K.C.-Lans.	3,800
Bradbridge*	6-24-15W	1948	200		no report	none		Arbuckle	4,020
Totals for Edwards County			280		903,166	5,692,177	5		

Elk County

Bush-Denton	4-30-9E	1920	1,700	30,809		130,230	44	"Stalnaker"	1,060
								"Peru"	2,135
								"Burgess"	2,300
Collyer	30-30-11E	1924	300	11,136			11	Kansas City	1,286
								Fort Scott	1,518
Dory	18-30-9E		200	3,792			5	Mississippian	2,570
Dunkleberger	34-29-10E		700	29,578			29	Kansas City	1,300
								Mississippian	1,970
Ferguson East	23-30-8E		40	999			1	Ordovician	2,900
Grand Summit*	4-31-8E		200	7,490			12	Kansas City	2,000
Hale-Inge*	31-12E	1907	1,700	6,437			25	"Peru"	1,160
Longton	31-12E	1902	400	5,477					
Love	30-9E		300	3,310			4	Mississippian	2,370
Moline	9-31-10E	1928	350	2,293			5	"Burgess"	2,000
								Mississippian	2,030
New Albany	29-13E		1,000	13,437				"Wayside"	560
"Perkins"	1-30-9E		40	475			1		
Porter	29-8E	1923	160	4,803			8	Kansas City	2,050
								Arbuckle	3,000
Schrader	12-31-8E	1928	500	28,683		399,551	4	Kansas City	1,520
Severy*	8-28-11E	1922	100	1,983			4+	Kansas City	1,200
Starr	12-31-9E	1937	400	3,418			6	Mississippian	2,330
Walker	5-31-10E	1927	80	1,287			2	Kansas City	1,550
								Mississippian	2,225
Webb	23-31-10E	1925	900	42,305			73	Kansas City	1,300
								Fort Scott	1,650
								Mississippian	1,975
								Arbuckle	2,300
Miscellaneous				357					
Total Elk County oil			9,060	198,069			234+		
Total Elk County gas						529,781			

Ellis County

Antonino	27-14-19W	1947	200	18,285	50,940		4	Arbuckle	3,712
								Basal sandstone	3,726
Antonino Townsite	2-15-19W	1949	40	805	805		1	Arbuckle	3,697
Beeching	34-15-16W	1943	500	14,102	195,508		6	K.C.-Lans.	3,156

TABLE 44.—*Oil and gas production in* ***Kansas, continued***

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Bemis-Shutts	16-11-17W	1935	15,000	4,550,355	59,447,412			525	Arbuckle	3,380
Bemis South	2-12-17W	1938		combined with Bemis-Shutts						
Blue Hill	14-12-16W	1937	1,000	166,110	1,575,784			22	Topeka	3,030
									K.C.-Lans.	3,072
									Gorham	3,348
									Arbuckle	3,360
Burnett*	1-11-18W	1937	6,200	2,679,375	33,581,216			247	K.C.-Lans.	3,093
									Arbuckle	3,570
Burnett Northwest*	3-11-18W	1946	770	321,844	1,170,038			22	K.C.-Lans.	3,450
									Arbuckle	3,617
Burnett Southwest	22-11-18W	1946	1,590	760,039	1,559,697			70	Shawnee	3,074
									K.C.-Lans.	3,207
									Arbuckle	3,633
Canyons	11-12-17W	1948	40	1,813	6,259			1	K.C.-Lans.	3,361
Catharine	3-13-17W	1936	400	40,987	198,604			10	K.C.-Lans.	3,262
									Arbuckle	3,516
Catharine Northwest	4-13-17W	1944	320	70,692	290,695			11	K.C.-Lans.	
									Arbuckle	3,590
Catharine South	15-13-17W	1946	350	132,608	428,781			17	Arbuckle	3,555
Catharine Townsite	9-13-17W	1949	40	no report	none				Arbuckle	3,585
Chrisler	22-11-16W	1949	40	5,977	5,977			1	K.C.-Lans.	3,100
Christina	22-12-16W	1949	40	no report	none				K.C.-Lans.	3,272
Dreiling	21-14-16W	1949	60	6,123	6,123			2	Arbuckle	3,367
Ellis*	31-12-20W	1942	700	68,356	654,900			11	Arbuckle	3,832
Emmeram	4-13-16W	1937	160	13,003	218,150			5	K.C.-Lans.	3,262
Emmeram Northeast	27-12-16W	1949	40	2,353	2,353			1	Arbuckle	3,541
Fairport*	8-12-15W	1923	950	120,074	1,669,948			20	K.C.-Lans.	2,950
									Gorham	3,211
									Arbuckle	3,312
									Reagan	3,350
Haller	10-11-18W	1936	40	620	24,463			1	Topeka	3,045
Herzog	30-13-16W	1940	470	116,900	793,475			13	K.C.-Lans.	3,232
									Arbuckle	3,450
Irvin	6-14-19W	1946	350	74,557	215,305			8	Arbuckle	3,860
Koblitz	23-12-18W	1937	500	93,875	774,547			14	Arbuckle	3,694
Kraus	22-14-19W	1936	100	13,575	112,787			3	Sooy	3,735
									Arbuckle	3,732
Krueger*	35-10-16W	1948	220	54,925	55,979			13	K.C.-Lans.	3,552
Leiker	14-15-18W	1943	100	12,187	87,483			2	K.C.-Lans.	3,292
									Arbuckle	3,591
Madden	26-15-18W	1948		combined with Schoenchen						
Meistrell	3-11-18W	1949	40	24,857	24,857			3	Arbuckle	3,532

Nicholson	30-11-20W	1945	250	39,873	191,897	6	Arbuckle	3,842
Penny-Wann	13-15-20W	1936	120	7,679	141,870	2	Sooy	3,653
Pleasant	2-14-20W	1944	1,000	137,654	734,835	17	Arbuckle	3,833
							Reagan	3,877
Pleasant North	26-13-20W	1946	40	1,044	2,168	1	Arbuckle	3,798
Polifka	7-13-17W	1948	40	10,787	11,688	1	Arbuckle	3,640
Reed	5-13-17W	1949	40	1,508	1,508	1	K.C.-Lans.	3,424
Riverview	19-11-18W	1943	940	172,439	1,247,643	22	Arbuckle	3,610
Ruder	17-15-18W	1935	620	31,600	1,019,219	5	K.C.-Lans.	3,422
							Arbuckle	3,572
Schmeidler	28-12-17W	1944	400	60,443	241,043	9	Arbuckle	3,625
Schoenchen	21-15-18W	1946	850	189,993	399,032	21	Arbuckle	3,569
Solomon	28-11-19W	1936	360	42,915	179,647	8	Arbuckle	3,629
Solomon Northeast	22-11-19W	1946	combined with Solomon					
Sugarloaf	17-13-17W	1941	120	22,718	216,362	3	Arbuckle	3,645
Sugarloaf Southeast	28-13-17W	1941	120	13,762	95,016	3	K.C.-Lans.	3,312
Toulon	3-14-17W	1935	680	31,067	409,164	7	K.C.-Lans.	3,298
							Arbuckle	3,512
Ubert	12-13-18W	1936	160	11,905	263,685	3	K.C.-Lans.	
							Arbuckle	3,707
Upper Turkville	9-11-17W	1948	40	no report	770		K.C.-Lans.	3,114
Walter	2-12-18W	1936	1,660	379,538	4,631,830	52	Topeka	3,160
							Arbuckle	3,619
Warren	12-11-20W	1949	40	6,166	6,166	1	K.C.-Lans.	3,458
Weigel	19-12-16W	1948	40	no report	1,171		K.C.-Lans.	3,368
Wheatland	18-15-17W	1949	40	no report	none		Arbuckle	3,571
Younger	6-14-17W	1944	330	31,333	148,515	7	Arbuckle	3,574
Younger North	32-13-17W	1947	combined with Younger				Arbuckle	3,580
Totals for Ellis County			38,150	10,556,821	113,095,315	1,202		

Ellsworth County

Bloomer*	36-17-11W	1936	2,830	882,093	9,817,660	90	K.C.-Lans.	3,044
							Arbuckle	3,257
Edwards*	3-18-8W	1936	1,900	933,046	11,322,131	103	Arbuckle	3,278
Heiken	25-17-10W	1930	300	565	46,850	1	Arbuckle	3,269
Heiken North	24-17-10W	1942	180	13,547	152,615	3	Arbuckle	3,212
Kraft-Prusa*	10-17-11W	1937	300	14,949	609,475	5	Shawnee	2,885
							K.C.-Lans.	3,160
							Gorham	3,335
							Arbuckle	3,281
							Reagan	3,310

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Lorraine	13-17-9W	1934	2,000	153,035	10,149,789			37	K.C.-Lans. Arbuckle	3,060 3,200
Palacky	31-16-10W	1949	60	5,326	5,326			2	K.C.-Lans. Arbuckle	3,148 3,390
Stoltenberg	22-16-10W	1931	13,500	2,114,118	29,654,796			343	K.C.-Lans. Arbuckle	3,260 3,333
do	18-17-9W	1947	100			126,467	144,784	2	Shawnee	2,728
Vacek	32-15-10W	1944	200	10,749	53,611			2	Arbuckle	3,315
Wilkens Southeast	32-17-9W	1942	300	34,479	362,004			6	Arbuckle	3,220
Total Ellsworth County oil			21,570	4,161,907	62,174,257			592		
Total Ellsworth County gas			100			126,467	144,784	2		
Finney County										
Hugoton					See Hugoton field					
Nunn	27-21-34W	1938	1,230	253,831	1,299,643			25	K.C. Marmaton Cherokee "Miss. lime"	 4,550 4,654
Franklin County										
LeLoup	15-20E		500	400					"Squirrel"	750
Paola-Rantoul*	17-21E	1860							Knobtown‖	300
1			600	1,008				14	Hepler	400
2			1,200	19,310				120	"Prue"	500
3			3,300	220,210				302	"Squirrel"	600
4			900	6,839				73	"Bartlesville"	700
5			300	513				4		
6			1,800	7,487				29		
Totals for Franklin County			8,400	255,767				542		
Graham County										
Alda	15-7-22W	1944	40	1,302	23,740			1	K.C.-Lans.	3,518
Faulkner	27-10-22W	1945	200	29,126	141,905			4	K.C.-Lans.	3,629
Gettysburg	7-8-23W	1941	80	8,114	43,011			2	K.C.-Lans.	3,725
Houston	9-6-22W	1947	40	no report	6,835				K.C.-Lans.	3,506
Luck	13-8-22W	1945	40	no report	12,765				K.C.-Lans.	3,418

Morel	15-9-21W	1938	4,440	1,393,238	8,813,894	125	Sooy Arbuckle	3,712 3,718
Morel East	13-9-21W	1949	80	no report	none		Arbuckle	3,729
Morel West	18-9-21W	1949	80	no report	none		Arbuckle	3,824
Morlan	23-10-21W	1949	120	32,433	32,433	5	Arbuckle	3,778
Muilenburg	1-10-21W	1949	80	3,725	3,725	2	Arbuckle	3,839
Penokee	11-8-24W	1940	120	27,380	91,878	3	K.C.-Lans.	3,750
Ray*	32-5-20W	1949	40	no report	none		K.C.-Lans. Arbuckle Reagan	3,297 3,575 3,540
Teall	9-10-21W	1949	40	4,230	4,230	1	K.C.-Lans.	3,528
Totals for Graham County			5,360	1,499,548	9,174,416	143		

Grant County (See Hugoton field)

Greenwood County

Atyeo*	30-21-10E	1925	150	15,663	15	"Bartlesville"	2,250
Beaumont	27-8E		500	37,165	21	"Peru" Mississippian Arbuckle	1,830 2,445 2,740
Beaumont North	27-9E		20	518	1	Mississippian Ordovician	2,477 2,800
Beaumont South	2-28-8E	1935	100	10,695	5	Mississippian	2,500
Blackwell	16-24-13E	1925	450	972		Mississippian	1,650
Blankenship*	26-8E	1921	250	4,508	9	"Bartlesville"	2,650
Brinegar	26-13E		350	6,643	20+		
Browning	22-10E	1924	1,300	113,234	99+	"Bartlesville"	2,314
Burkett	24-23-10E	1923	1,800	445,392	129+	"Bartlesville"	2,000
Burt	8-26-11E	1949	160	4,995	5	Mississippian	1,860
Climax	27-11E	1925	250	10,064	5+	Mississippian	1,900
Demalorie-Souder	22-10E	1924	3,500	162,664	3+	"Bartlesville"	2,150
Dunaway*	34-22-13E	1922	1,800	50,977		Mississippian	1,800
Eureka	31-25-11E		1,400	89,395	33	Fort Scott Mississippian	1,750 2,000
Eureka West	33-25-10E	1949				Mississippian	1,980
Fankhouser*	4-22-12E	1926	800	212,873	7+	"Bartlesville"	1,850
Gaffney	18-24-11E	1926	100	8,591		"Bartlesville	1,850
Gilroy	12-25-12E	1928	80	859	2	Mississippian	1,600
Hamilton	7-24-12E	1925	3,500	397,198	48+	"Bartlesville" Mississippian	1,650 1,800
Hinchman	17-24-13E	1927	250	3,522	1+	Mississippian	1,615
Hollis	16-23-10E	1927	80	2,577	2	"Bartlesville"	2,150
Jackson	25-8E		80	1,460	2	"Bartlesville"	

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Jobes	10-24-13E		200	177						
Lamont	29-22-13E	1926	3,100	138,961				48+	"Bartlesville"	1,700
Madison	14-22-11E		2,200	74,926				90+	"Bartlesville"	1,800
Petterson	19-27-11E	1944	80	2,127				2	Arbuckle	2,400
Pixlee	7-22-10E	1923	1,250	57,721				38	"Bartlesville" Mississippian	2,350 2,400
Polhamus	25-9E	1922	1,200	41,299					"Bartlesville"	2,180
Quincy*	31-24-12E	1926	1,400	7,896				18	"Bartlesville" Mississippian	1,500 1,720
Reese	24-26-9E		1,300	48,451				31	Kansas City Mississippian	1,380 2,100
Sallyards	25-8E		2,500	435,245				50+	"Bartlesville"	2,350
Scott	24-23-8E	1925	1,400	71,796				66	"Bartlesville"	2,525
Seeley-Wick	28-23-11E		7,500	1,514,132				205+	"Bartlesville"	1,930
Severy*	8-28-11E		600	18,049				15+	Kansas City	1,200
Stanhope	15-26-8E		200	9,234				6	Mississippian	2,450
Teeter*	16-23-9E	1920	3,100	179,907				129+	"Bartlesville"	2,400
Teichgraber	25-8E		800	13,290				17	"Bartlesville"	2,750
Thrall-Aagard	14-24-9E		3,500	480,830				98+	"Bartlesville"	2,170
Toronto*	16-26-13E	1913	300	4,254				9	"Peru" "Bartlesville"	1,000 1,700
				Incl. Woodson Co. production						
Virgil	14-24-12E	1916	4,800	162,938				39+	"Bartlesville" Mississippian	1,550 1,700
Virgil North*	22-23-13E	1920	6,700	284,285				4+	"Bartlesville" Mississippian	1,585 1,840
Wiggins	30-24-11E	1925	1,900	26,080				49	"Bartlesville"	1,860
Wilkerson	6-25-9E	1926	300	13,267				13	"Bartlesville"	2,200
Willard	7-27-11E		150	24,118				6	Miss. "Chat"	1,900
Miscellaneous				890						
Totals for **Greenwood** County			61,800	5,189,838				1,340+		
Hamilton County (See Hugoton field)										
Harper County										
Grabs	13-31-9W	1949	40	1,424	1,424			1	Mississippian	4,400

Harvey County

Brandenberger	12-24-3W	1946	40	no report	238				Viola	3,875
Burrton*	1-23-4W	1931	3,450	Included with Reno Co.					Mississippian	3,266
									"Hunton"	3,583
do*	23-23-4W	1930	150			722,576 est.		40 est.	Mississippian	3,298
Graber*	32-21-1W	1934	560	7,081	136,024			2	"Misener"	3,323
									"Hunton"	3,274
Halstead	36-22-2W	1929	1,500	41,657	1,819,708			14	"Chat"	3,005
Hollow-Nikkel*	30-22-3W	1931	2,000	130,932	20,462,813			51	"Chat"	3,195
				Incl. McPherson Co. production					"Hunton"	3,507
									Simpson	3,500
Jester Creek	3-24-1E	1949	40	no report	none				K.C.-Lans.	2,687
Jones	21-23-3W	1949	80			no report	none		Mississippian	3,260
Jones Northeast	15-23-3W	1949	300			no report	none		Mississippian	3,280
Sperling	23-22-2W	1935	250	13,841	562,829			5	"Hunton"	3,279
do	23-22-2W	1935	250			40,200	6,475,321	2	"Chat"	2,955
Stucky	3-23-3W	1942	40	155	1,827			1	"Chat"	3,224
Stucky South	10-23-3W	1944	200			184,257	619,991	4	Mississippian	3,269
Total Harvey County oil			7,880	193,666	22,983,439			73		
Total Harvey County gas			980			947,033	7,095,312	46		

Haskell County (See Hugoton field)

Hugoton field (Finney, Grant, Hamilton, Haskell, Kearny, Morton, Seward, Stanton, and Stevens Counties)

Hugoton	3-35-34W	1922	2,005,568			221,420,225	1,149,167,123	1,847	Herington	
									Krider	
									Winfield	
									Fort Riley	
									Florence	

Jefferson County

McLouth	4-10-20E	1939	800	73,204				16	McLouth	1,450
									Mississippian	1,550
McLouth North	29-9-20E	1941	900	2,254				6	McLouth	1,450
									Mississippian	1,500
Miscellaneous						81,827				
Total Jefferson County oil			1,700	75,458				22		
Total Jefferson County gas						81,827				

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Johnson County										
Miscellaneous						4,341				
Kearny County										
Hugoton						See Hugoton field				
Patterson	23-22-38W	1941	200	30,599	293,615			3	"Patterson sand"	4,748
Kingman County										
Cunningham*	7-28-11W	1931	740	31,057	2,807,173			35	K.C.-Lans.	3,390
do*	7-28-11W	1931	740			209,420		5 est.	Viola	4,278
									Arbuckle	4,094
Pat Creek	20-28-9W	1946	120	17,022	91,762			3	Viola	4,406
Total Kingman County oil			860	48,079	2,898,935			38		
Total Kingman County gas			740			209,420		5		
Kiowa County										
Alford	14-30-19W	1944	160			no report	none		Spergen	5,040
Brenham	29-28-17W	1947	400			no report	none		"Miss. chert"	4,841
Excel	20-30-20W	1948	40	12,463	16,580			1	"Miss. lime"	5,126
Total Kiowa County oil			40	12,463	16,580			1		
Total Kiowa County gas			560			no report	none			
Labette County										
Chetopa	36-34-20E	1936	300	3,100					Arbuckle	850
Coffeyville-Cherryvale*	32-17E		600	3,189				16	"Wayside"	400
									Fort Scott	600
									"Bartlesville"	1,000
Mound Valley	32-18E		400	375					"U. Bartlesville"	630
									"L. Bartlesville"	700
									Mississippian	900
Price	33-18E	1917	700	2,349					"Bartlesville"	600
Miscellaneous						2,000				
Total Labette County oil			2,000	9,013				16		
Total Labette County gas						2,000				

Leavenworth County

Ackerland	12-10-20E	1941	400	2,131		4	McLouth	1,370
Banker's Life*	3-10-20E	1941	400	9,587		7	McLouth	1,450
"Linwood"					6,827			
Total Leavenworth County oil			800	11,718		11		
Total Leavenworth County gas					6,827			

Linn County

Blue Mound (9)	23-21E		300	2,524		9	Mississippian	800
Centerville*	10-21-22E	1920	2,400			74+	"Squirrel"¶	480
6				624			"Bartlesville"	720
7				5,763				
8				532				
Goodrich-Parker*	25-20-21E	1922	1,300			70+	"Squirrel"¶	600
4				2,098			"Bartlesville"	700
5				25,670				
LaCygne-Cadmus	20-24E		1,400			26+	Bandera¶	150
1				102		59+	Labette	200
2				8,249				
3				1,728				
Miscellaneous					11,969			
Total Linn County oil			5,400	47,290		238+		
Total Linn County gas					11,969			

Lyon County

Atyeo*	30-21-10E	1925	900	391,013		45	"Bartlesville"	2,200
Fankhouser*	4-22-12E	1926	900	28,224			"Bartlesville"	1,850
Rock Creek	32-21-11E	1947	200	4,371	14,355	4	"Bartlesville"	1,900
Totals for Lyon County			2,000	423,608		49		

McPherson County

Battle Hill	24-18-1W	1945	40	5,282	33,555	1	"Chat"	2,825
Battle Hill North	13-18-1W	1948	80	11,860	22,287	2	"Miss. lime"	2,811
Bitikofer	1-20-1W	1940	200	8,468	194,702	5	"Chat"	2,885
Bitikofer North	25-19-1W	1946	40	1,721	6,805	1	"Miss. lime"	2,892
Bonaville	33-17-2W	1949	60	4,499	4,499	2	Simpson	3,557
Bornholdt*	30-20-5W	1937	3,080	331,846	11,006,466	113	"Chat"	3,292
Burk	7-18-1W	1948	200	20,766	41,741	5	Mississippian	2,781
Canton North	26-18-1W	1936	500	55,855	490,058	14	"Chat"	2,803
Chindberg	18-19-2W	1929	700	22,833	1,703,955	18	K.C.-Lans.	2,363
							"Chat"	3,007

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Coons	13-19-1W	1940	200			Incl. with Ritz-Canton			"Chat"	2,897
Crowther	26-17-1W	1942	1,500	258,745	2,378,693			50	"Chat"	2,778
Doles Park*	12-19-1W	1947	160			Incl. with Ritz-Canton			"Chat"	2,843
Georob	31-17-1W	1947	1,500	216,996	532,715			24	"Chat"	2,665
Graber*	32-21-1W	1934	2,380	250,396	8,977,854			117	"Misener" "Hunton"	3,323 3,274
Gypsum Creek	4-17-1W	1944	400	47,324	266,987			12	"Chat"	2,619
Henne	21-17-1W	1940	900	70,951	1,274,590			22	"Chat"	2,658
Hoffsommer	6-18-1W	1947		combined with Georob						
Hollow-Nikkel*	30-22-3W	1931	640	Incl. with Harvey Co.					"Chat" "Hunton" Simpson	3,195 3,507 3,500
Jenday	1-19-2W	1944	1,000	59,730	673,724			30	"Chat"	2,984
Johnson	35-19-3W	1932	1,000	42,337	3,161,366			11	"Chat"	3,032
Lindsborg	8-17-3W	1938	5,400	497,789	5,272,627			105	Viola Simpson	3,352 3,360
McPherson	29-18-2W	1926	1,500	84,600	1,333,721			31	K.C.-Lans. "Chat" Viola	2,340 2,967 3,140
do	29-18-2W	1926	200			Incl. with Ritz-Canton			K.C.-Lans. "Chat" Viola	2,340 2,967 3,140
Maxwell	17-18-1W	1948	80	4,585	5,952			2	"Miss. lime"	2,846
Paden	10-18-1W	1943	630	347,042	1,652,594			42	"Chat" Viola	2,752 3,153
Reuben	17-18-2W	1949	40	2,094	2,094			1	Simpson	3,675
Ritz-Canton	1-20-2W	1929	12,500	563,618	41,161,000			195	"Chat" Viola	2,935 3,412
do	12-20-2W	1929	2,000			419,027		8	"Chat"	2,935
Roxbury	18-17-1W	1938	1,050	123,345	2,722,038			34	"Chat" Simpson	2,684 3,278
Roxbury South	30-17-1W	1942	240	22,795	274,031			4	"Chat"	2,658
Roxbury Southeast	20-17-1W	1943	40	3,064	24,060			2	"Chat"	2,665
Twin Mounds	1-18-2W	1948		combined with Georob						
Voshell	9-21-3W	1929	3,500	297,702	27,586,023			66	"Chat" Viola	3,095 3,301
Total McPherson County oil			39,200	3,356,243	110,804,137			909		
Total McPherson County gas			2,560			419,027		8		

Marion County

Antelope	33-18-4E	1947	80	597	1,266			2	Miss. "chat"	2,380
Antelope North	28-18-4E	1948	40	407	1,057			1	Kansas City	1,840
Covert-Sellers	28-21-4E	1920	1,200	104,824				19+	Viola	2,400
Elbing*	18-23-4E	1918	200	7,601					Kansas City	2,120
									Mississippian	2,400
									Viola	2,530
Elbing North	27-22-4E	1947	200	22,528	27,220			4	Miss. "chat"	2,439
Fanska	6-17-1E	1943	200	19,547				24	Miss. "chat"	2,680
Florence	18-21-5E	1920	1,800	16,116				6	Viola	2,300
Hillsboro	7-19-3E	1928	500	22,034				8	Mississippian	2,470
									Viola	2,820
Lehigh	27-19-1E	1946	300	14,121	50,345			6	Mississippian	2,800
Lost Springs*	22-17-4E	1926	5,500	254,676				141	Mississippian	2,365
Lost Springs East	35-17-4E	1942	200	7,697				6	Miss. "chat"	2,350
Lost Springs SE	10-18-4E	1948	40	465	465			1	Mississippian	2,345
Peabody	9-22-4E	1920	1,400	33,588				8	Viola	2,500
Wenger	11-21-4E	1947	500	184,766	188,573			15+	"Hunton"	2,770
Miscellaneous						213,104				
Total Marion County oil			12,160	688,967				241+		
Total Marion County gas						213,104				

Meade County

Adams Ranch	8-35-30W	1948	40	465	812			1		
do	8-35-30W	1945	460			no report	162,343		Mississippian	5,850
Adams Ranch East	36-34-30W	1947	2,500			no report	none		Morrowan ss.	5,874
									Mississippian	5,904
Total Meade County oil			40	465	812			1		
Total Meade County gas			2,960				162,343			

Miami County

Block (16)			20	1,700				9	"Squirrel"	440
Louisburg	17-25E		900						Knobtown¶	270
14				977				13	"Peru"	430
15				3,848				29	"Squirrel"	600
Paola-Rantoul*	17-23E	1860	14,700						Knobtown¶	300
1 "Big Lake"				68,850				251	Hepler	400
2				22,112				60	"Peru"	500
3 "Pressonville"				101,557				158+	"Squirrel"	600
4				3,620				11	"Bartlesville"	700
5				28,324				72+		
6 "Pressonville"				580				8		
7 "Pressonville"				39,310				62		
8 "Rantoul'				339				12		

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
9 "Stanton"				44,315				164+		
10 "Osawatomie"				3,400				8+		
11 "Osawatomie"				283						
12				4,550						
13 "Osawatomie"				41,619				89+		
Miscellaneous						120,000+				
Total Miami County oil			15,620	365,384				946+		
Total Miami County gas						120,000+				
Montgomery County										
Brewster	32-16E		600						"Bartlesville"	900
14				1,870						
15				20,374				3		
Caney (31)	35-14E		600	7,441				25	"Bartlesville"	1,320
Coffeyville-Cherryvale*	33-17E	1902	7,200			2,000			"Wayside"¶	400
1				2,022				20+	Fort Scott	600
2				177				9	"Bartlesville"	1,000
3				1,056				6	Arbuckle	1,300
4				8,386				17		
5				2,372				1+		
6				5,426				15+		
7				20,997				24+		
8				22,475				88		
9				605						
10				660						
Coleman (24)	28-32-14E	1921	40	5,828				1	Arbuckle	1,700
"Dearing"						334,057		24		
"Graham"						80,375				
Jefferson-Sycamore	18-33-15E	1903	15,000			25,154			"Weiser"¶	800
16				1,506				10+	"Bartlesville"	1,200
17				113				31		
18				84,772						
19				480,008				234+		
20				3,114				5+		
21				2,361				24		
22				3,900				34		
23				16,652				21+		
Neodesha*	31-16E		1,000						"Bartlesville"	950
11				1,355				3		
12				2,073				12		
13				145						
Sorghum Hollow (25)	32-14E		2,100	7,685				63	"Weiser"	800

Tyro (30)	13-35-14E	1904	4,700	25,515				"Bartlesville"	1,250
Wayside-Havana*	34-14E	1904	11,200					"Wayside"¶	575
26				749			10	"Weiser"	700
27				140,500			736+	"Bartlesville"	1,200
28				1,345			9		
29				3,575			47		
Miscellaneous				3,310			2+		
Total Montgomery County oil			42,440	878,367			1,474+		
Total Montgomery County gas					441,586				
Morris County									
Burdick	15-17-5E	1949	40	1,216	1,216		1	Mississippian	2,220
Nelson	30-17-5E	1928	40	85			1	Miss. "chat"	2,300
Miscellaneous					65,984		22		
Total Morris County oil			80	1,301			24		
Total Morris County gas					65,984				
Morton County									
Hugoton					See Hugoton field				
Richfield	17-32-40W	1948	40	581	581		1	Basal Penn. (Atoka)	4,990
do	17-32-40W	1948	640		no report	none			
Nemaha County									
Strahm	27-2-14E	1948	40	3,312	4,312		1	"Hunton"	2,879
Neosho County									
Erie	28-20E	1903	6,100					"Bartlesville"	650
11				3,639					
12				15,992			36+		
Humboldt-Chanute*	27-18E		16,500					"Bartlesville"	700
1				459					
2				24,402					
3				17,338					
4				428,568			307+		
5				287					
6				5,462					
Morehead (16)	30-30-18E		150	2,865				"Bartlesville"	850
St. Paul-Walnut*	29-21E		1,200					"Bartlesville"	550
7				5,556					
8				120					
9				1,358					
10				2,456					
Thayer (15)	29-17E		300	269				"Bartlesville"	850

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Urbana (13, 14)	28-18E		500	5,001					"Bartlesville"	750
Miscellaneous				798		72,958		4		
Total Neosho County oil			24,750	514,570				347+		
Total Neosho County gas						72,958				
Ness County										
Aldrich	7-18-25W	1929	4,900	233,091	1,864,117			29	"Warsaw"	4,428
Arnold	22-16-25W	1943	300	36,244	244,585			5	Fort Scott	4,436
									"Warsaw"	4,528
Kansada	23-17-26W	1944	200	no report	7,581				"Warsaw"	4,450
Manteno	31-19-25W	1945	160	5,640	41,235			3	"Warsaw"	4,549
Totals for Ness County			5,560	274,975	2,157,518			37		
Norton County										
Hewitt	11-4-21W	1941	40	no report	32,054				K.C.-Lans.	3,404
Ray*	32-5-20W	1940	300	29,444	133,031			5	K.C.-Lans.	3,297
									Arbuckle	3,575
									Reagan	3,540
Ray West	26-5-21W	1945	80	11,997	63,616			2	Arbuckle	3,650
Totals for Norton County			420	41,441	228,701			7		
Pawnee County										
Ash Creek*	31-20-15W	1947	850	82,897	173,654			16	Arbuckle	3,787
do*‡	31-20-15W	1948	50			559,000 est.			Arbuckle	3,769
Ash Creek SW	11-21-16W	1947	100	20,008	63,242			2	Arbuckle	3,779
Benson	30-23-15W	1945	200	26,086	124,888			5	K.C.-Lans.	3,853
Benson Southeast	32-23-15W	1946	160			no report	none		Arbuckle	4,048
Garfield	17-23-17W	1947	40	1,786	7,309			1	Kinderhookian	4,276
Larned	28-21-16W	1949	40	565	565	no report	none	1	Arbuckle	3,877
Pawnee Rock*	13-20-16W	1936	2,000	231,962	2,084,848			39	Arbuckle	3,832
do*‡	19&20-15&16W	1936	420			4,695,600 est.				
Pawnee Rock West	23-20-16W	1949	200	15,121	15,121			4	Arbuckle	3,760
Rutherford	8-20-16W	1946	300	40,294	179,792			7	Arbuckle	3,815

Ryan*	35-19-16W	1945	550	24,528	334,056			12	Arbuckle 3,656
do*‡	35-19-16W		50			559,000 est.			
Ryan Southeast	12-20-16W	1945	300	40,283	207,676			9	Arbuckle 3,688
Shady	35-22-16W	1948	60	3,291	3,552			3	Arbuckle 4,067
do	34-22-16W	1945	600			694,105	2,751,988	3	Arbuckle 4,063
Zook	16-23-16W	1942	80	no report	7,016				Arbuckle 4,066
do	16-23-16W	1942	320			1,231,465	7,338,893	13	Arbuckle 4,066
Misc. gas wells								22	
Total Pawnee County oil			4,720	486,821	3,201,719			99	
Total Pawnee County gas			1,600			7,739,170	10,090,881	38	

Phillips County

Bow Creek	25-5-18W	1939	40	2,450	42,646			1	K.C.-Lans. 3,111
Dayton	36-2-19W	1941	1,600	54,361	862,684			21	K.C.-Lans. 3,430
Dayton North	13-2-19W	1943	1,000	101,512	575,318			23	K.C.-Lans. 3,406
Hansen	14-5-20W	1943	800	250,734	1,167,192			29	K.C.-Lans. 3,363 Arbuckle 3,530
Huffstutter	6-2-18W	1949	550	22,624	22,624			9	K.C.-Lans. 3,444
Logan	3-5-20W	1945	420	58,711	206,732			10	K.C.-Lans. 3,149 Arbuckle 3,381
Ray*	32-5-20W	1940	3,500	1,218,939	9,525,379			130	K.C.-Lans. 3,297 Arbuckle 3,575 Reagan 3,540
Totals for Phillips County			7,910	1,709,331	12,402,575			223	

Pratt County

Carmi	29-26-12W	1942	4,400	721,030	7,768,260			103	K.C.-Lans. Viola 4,104 Simpson 4,195 Arbuckle 4,271
do	29-26-12W	1942	80			no report	127,339		Viola 4,122
Chance	4-27-13W	1946	550	123,052	263,866			19	Simpson 4,380 Arbuckle 4,432
Chitwood	23-28-12W	1943	1,700	671,528	5,168,685			74	K.C.-Lans. Viola Simpson 4,396 Arbuckle
do	23-28-12W	1943	400			467,915	5,922,437	2	Viola 4,340
Clara*	36-29-14W	1948	100	46,510	56,844			4	Simpson 4,472
Coats	24-29-14W	1944	400	42,147	313,087			8	Simpson 4,402 Arbuckle
Cunningham*	7-28-11W	1931	3,560	267,812	4,098,562			85	K.C.-Lans. 3,390
do*	7-28-11W	1931	3,560			1,118,731		24 est.	Viola 4,278 Arbuckle 4,094

Incl. Cairo pool production

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Frisbie	5-26-13W	1943	400	34,995	249,885			4	K.C.-Lans.	3,947
Frisbie Northeast	4-26-13W	1948	80	47,188	67,954			6	K.C.-Lans.	3,788
Iuka	11-27-13W	1937	2,000	161,109	1,469,957			18	Simpson	4,292
									Arbuckle	4,354
Ludwick	4-29-13W	1944	80	1,186	25,139			1	Simpson	4,490
Moore	1-26-14W	1949	40	6,651	6,651			1	Simpson	4,348
Shriver	33-29-14W	1944	300	75,878	390,900			7	Simpson	4,557
do	27-29-14W	1949	100			93,073	93,073	2		
Stark	18-26-11W	1941	850	34,868	784,669			13	K.C.-Lans.	3,601
									Viola	4,121
do	13-26-12W	1941	50			Incl. with Carmi			Viola	4,121
Stoops	7-29-12W	1946	160	10,313	68,747			4	Viola	4,446
Stoops Southwest	24-29-13W	1946	40	2,007	10,077			1	Viola	4,483
Ward	11-26-12W	1941	160			no report			Viola	4,129
Total Pratt County oil			14,660	2,246,274	20,743,283			348		
Total Pratt County gas			4,350			1,679,719	6,142,849	28		

Reno County

Abbyville	24-24-8W	1927	1,000	52,992	643,352			14	K.C.-Lans.	3,540
Albion	14-26-6W	1948	100	9,128	15,282			3	K.C.-Lans.	3,342
									"Chat"	3,654
Buhler	25-22-5W	1938	640	44,554	642,276			7	Viola	3,890
									Simpson	3,897
Burrton*	1-23-4W	1931	11,550	1,217,007	44,323,051			355	Mississippian	3,266
				Incl. Harvey Co. production					"Hunton"	3,583
do*	23-23-4W	1930	450			2,167,731		40 est.	Mississippian	3,298
Hilger	16-26-4W	1934	1,660	193,529	4,233,168			27	Viola	4,062
Lerado Southwest	21-26-9W	1944	200	14,293	95,764			4	Viola	4,177
Morton	17-24-8W	1942	40	3,235	32,528			1	K.C.-Lans.	3,180
Yoder	34-24-5W	1935	300	2,637	92,348			5	"Chat"	3,450
do	34-24-5W	1936	200			660,179		10	"Chat"	3,402
Zenith-Peace Creek*	21-23-10W	1941	11,100	685,123	16,449,088			174	Viola	3,773
do*	23-24-11W	1937	150			153,337		10 est.	Viola	3,860
Total Reno County oil			26,590	2,222,498	66,526,857			590		
Total Reno County gas			800			2,981,247		60		

Rice County

Alden	22-21-9W	1937	400			no report	13,801,113		"Misener"	3,317
Bloomer*	36-17-11W	1936	1,400	863,947	10,574,782			74	K.C.-Lans.	3,044
									Arbuckle	3,257
Bowman North	16-19-10W	1948	80	4,102	8,351			2	Arbuckle	3,331
Bornholdt*	30-20-5W	1937	1,180	280,762	1,512,430			23	"Chat"	3,292
Bredfeldt	7-18-9W	1948	100	19,655	45,915			2	Arbuckle	3,226
Bredfeldt West	12-18-10W	1939	80	2,778	55,854			1	Arbuckle	3,260
Chase	32-19-9W	1931	20,420	3,280,001	53,382,630			534	K.C.-Lans.	2,942
									"Wilcox"	3,260
									Arbuckle	3,246
do	6-19-9W	1936	100			no report	116,785		Arbuckle	3,192
Click	3-18-7W	1943	40	no report	5,632				"Misener"	3,182
Click Southeast	11-18-7W	1947	40	3,651	9,662			1	K.C.-Lans.	3,065
Cow Creek	28-18-9W	1946	40	no report	765				Arbuckle	3,249
Edwards*	3-18-8W	1936	530	15,536	78,797			4	Arbuckle	3,278
Engelland	34-20-7W	1949	40	2,985	2,985			1	Conglomerate	3,348
Gemeinhardt	18-18-10W	1948	40	9,915	13,399			1	Arbuckle	3,293
Geneseo	25-18-8W	1934	5,700	1,865,315	26,034,383			194	K.C.-Lans.	2,787
									Arbuckle	3,132
Heinz	8-18-10W	1938	80	3,742	89,020			2	K.C.-Lans.	3,000
									Arbuckle	3,254
Keller	3-19-9W	1943	40	2,750	36,271			1	Sooy	3,240
Lyons	14-20-8W	1949	160	16,611	16,611			2	K.C.-Lans.	3,226
									"Misener"	3,315
do	35-19-8W	1888	1,100			48,802	12,306,111	1	Simpson	3,290
									Arbuckle	3,277
Odessa	32-18-6W	1949	160	3,337	3,337			1	K.C.-Lans.	3,092
Odessa South	9-19-6W	1949	80	3,389	3,389			1	K.C.-Lans.	3,069
Orth	27-18-10W	1932	1,500	195,994	1,989,266			46	Shawnee	
									K.C.-Lans.	2,915
									Sooy	3,187
									Pre-Cambrian	3,240
do	27-18-10W	1933	160			128,621		2	K.C.-Lans.	2,906
Orth West	21-18-10W	1944	360	115,010	180,887			13	Shawnee	2,688
									Arbuckle	3,235
Pioneer	25-19-10W	1942	160	19,485	109,853			5	Arbuckle	3,281
Ploog	33-18-9W	1930	400	25,789	1,514,723			5	Arbuckle	3,252
Ponce	28-21-7W	1936	40	2,469	52,722			1	Sooy	3,388
Proffitt	13-20-10W	1949	100	8,625	8,625			2	Arbuckle	3,340
Prosper	6-18-9W	1948	80	3,078	6,892			2	Arbuckle	3,232
Quivira	36-19-9W	1947				no report	211,244		Tarkio	2,117
Raymond	21-20-10W	1929	2,600	495,171	12,193,027			82	Wabaunsee	2,285
									K.C.-Lans.	3,130
									Arbuckle	3,330

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Rick*	1-19-11W	1936	40	2,410	43,045			1	K.C.-Lans. Arbuckle	3,106 3,355
Rick Southeast	18-19-10W	1947	100	14,455	40,646			3	Arbuckle	3,334
Rickard	22-18-9W	1935	200	7,861	169,038			4	Arbuckle	3,324
Ringwald	32-18-10W	1949	120	31,816	31,816			7	K.C.-Lans. Pre-Cambrian	2,947 3,072
Silica*	12-20-11W	1931	11,800	561,659	26,436,880			277	K.C.-Lans. Arbuckle	2,955 3,328
Silica South*	24-20-11W	1935	300	105,054	764,610			11	K.C.-Lans. Arbuckle	3,035 3,268
Smyres	36-19-6W	1942	1,240	201,594	1,759,416			33	"Chat"	3,339
Volkland	27-18-9W	1943	400	55,489	477,256			7	Arbuckle	3,221
Welch	35-20-6W	1924	2,600	261,971	5,464,667			68	"Chat"	3,370
Welch East	1-21-6W	1941	80	1,551	30,699			1	"Chat"	3,341
Welch North	23-20-6W	1937	160	4,730	90,670			3	"Chat"	3,334
Welch West	6-21-6W	1948	80	17,128	21,969			3	"Miss. lime"	3,498
Wherry	11-21-7W	1933	7,200	289,533	10,543,497			67	Sooy	3,358
Wherry North	35-20-7W	1947	250	69,260	195,357			7	Sooy	3,423
Total Rice County oil			60,020	8,868,608	153,999,774			1,492		
Total Rice County gas			1,760			177,423	26,435,203	3		
Rooks County										
Alcona	14-7-20W	1946	40	no report	3,232				Arbuckle	3,499
Barry	11-9-19W	1942	1,280	544,803	3,824,232			43	K.C.-Lans. Arbuckle	3,435
Barry East	6-9-18W	1947	360	110,501	218,408			9	K.C.-Lans. Arbuckle	3,280 3,489
Barry Southeast	13-9-19W	1946	600	219,934	777,205			24	Arbuckle	3,479
Barry West	4-9-19W	1948	combined with Webster							
Baum	10-10-16W	1942	40	1,721	13,993			1	K.C.-Lans.	3,057
Belmont	28-7-19W	1949	40	1,894	1,894			1	K.C.-Lans.	3,337
Berland	19-10-19W	1948	2,400	322,347	343,257			54	K.C.-Lans. Arbuckle	3,596 3,802
Berland North	18-10-19W	1949	combined with Berland							
Berland Northeast	17-10-19W	1949	combined with Berland							
Berland Southwest	26-10-20W	1949	40	no report	none				Arbuckle	3,728
Burnett*	1-11-18W	1937	200	67,081	869,402			7	K.C.-Lans. Arbuckle	3,093 3,570

Burnett Northwest*	3-11-18W	1946	200	51,503	195,281	5	K.C.-Lans. Arbuckle	3,450 3,617
Chandler	14-9-19W	1948	800	231,012	295,229	17	Arbuckle	3,455
Dopita	31-8-17W	1934	1,200	79,070	614,598	20	K.C.-Lans. Arbuckle	3,212 3,409
Dorr	20-9-16W	1942	640	119,808	433,350	17	K.C.-Lans.	3,230
Eagle Creek	2-10-20W	1949	40	5,286	5,286	1	Arbuckle	3,822
Erway	2-10-16W	1941	60	6,765	63,078	1	K.C.-Lans.	3,136
Finnesy	14-10-18W	1947	40	3,806	8,968	1	K.C.-Lans.	3,419
Gick	30-9-19W	1947	80	21,653	49,067	2	Arbuckle	3,578
Gra-Rook	30-9-20W	1948	200	60,844	63,283	4	Arbuckle	3,869
Hayden	31-8-19W	1949	200	32,460	32,460	5	Arbuckle	3,513
Hobart	33-8-18W	1944	80	no report	36,200		K.C.-Lans.	3,209
Jelinek	23-9-19W	1947	600	133,020	206,308	16	Arbuckle	3,537
Krueger*	35-10-16W	1948	220	32,003	37,248	5	K.C.-Lans.	3,552
Laton	11-9-16W	1927	4,350	253,623	3,488,538	106	K.C.-Lans.	3,228
Locust Grove	8-7-19W	1949	40	4,589	4,589	1	Arbuckle	3,450
Lone Star	4-8-17W	1948	100	4,855	8,993	2	Arbuckle	3,382
McClellan	9-9-19W	1945	120	5,110	40,479	2	K.C.-Lans.	3,343
McHale	8-9-18W	1948	320	61,137	66,578	8	Arbuckle	3,494
McHale South	17-9-18W	1949	40	3,699	3,699	1	Arbuckle	3,615
Marc	18-9-19W	1948	60	5,738	8,605	2	K.C.-Lans.	3,370
Marcotte	15-10-20W	1943	640	123,465	757,354	16	Arbuckle	3,752
Nettie	34-9-17W	1948	40	11,215	11,435	1	K.C.-Lans.	3,243
Northampton	26-9-20W	1948	800	338,107	489,690	26	Arbuckle	3,803
Nyra	16-9-17W	1946	320	34,244	69,047	11	K.C.-Lans. Arbuckle	3,429 3,501
Palco	5-10-20W	1943	700	250,875	555,566	25	Arbuckle	3,824
Palco Southeast	3-10-20W	1949	200	3,077	3,077	2	Arbuckle	3,827
Palco Townsite	20-9-20W	1945	40	3,099	13,232	1	Arbuckle	3,847
Paradise Creek	21-9-18W	1947	1,000	276,490	905,189	31	Arbuckle	3,576
Plainville	31-9-17W	1948	40	3,389	4,923	1	K.C.-Lans. Arbuckle	3,477 3,613
Ray Southeast	9-6-20W	1942	40	5,220	64,404	1	Reagan	3,600
Silvers	21-8-19W	1947		combined with Webster				
Stockton	35-7-17W	1937	300	15,485	86,094	6	Shawnee K.C.-Lans.	2,692 3,180
Vohs	14-10-19W	1945	900	202,402	905,043	21	K.C.-Lans.	3,365
Vohs Northwest	9-10-19W	1947	80	20,064	53,111	2	K.C.-Lans.	3,446
Vohs South	23-10-19W	1947	40	3,069	9,138	1	K.C.-Lans.	3,303
Webster	27-8-19W	1946	1,800	477,715	1,092,905	51	Arbuckle	3,403
Westhusin	11-9-17W	1936	1,680	192,172	1,390,888	41	K.C.-Lans. Arbuckle	3,231 3,408
Yohe	4-9-18W	1949	100	11,745	11,745	3	K.C.-Lans.	3,266

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Zurich	26-10-19W	1935	600	13,438	240,026			5	K.C.-Lans.	3,340
Zurich Townsite	27-9-19W	1944	300	67,921	156,477			7	Arbuckle	3,647
Zurich Townsite South	34-9-19W	1949		abandoned during 1949						
Totals for Rooks County			24,010	4,437,454	18,532,804			607		
Rush County										
Loretto	21-16-17W	1945	40	no report	none				K.C.-Lans.	3,280
Otis-Albert*	10-18-16W	1934	2,150	52,807	4,432,990			39	Reagan	3,527
do*	11-18-16W	1930	7,000			1,399,778		36	Neva Reagan	3,507
Rush Center	16-18-18W	1947	40	1,715	8,716			1	Arbuckle	3,836
Ryan*	35-19-16W	1945	1,740	241,155	857,672			47	Arbuckle	3,656
do*‡	35-19-16W		320			3,577,577				
Weitzel	1-16-20W	1947	80	5,330	27,701			2	Gorham	3,674
Misc. gas wells								22		
Total Rush County oil			4,050	301,007	5,327,079			89		
Total Rush County gas			7,320			4,977,355		58		
Russell County										
Atherton	30-13-14W	1935	1,900	165,876	2,308,749			39	Arbuckle	3,284
Atherton North	7-13-14W	1945	160	4,587	55,990			2	Arbuckle	3,195
Atherton West	23-13-15W	1945	60	no report	629				K.C.-Lans.	3,269
Beisel	15-14-12W	1944	40	2,533	16,978			1	Arbuckle	3,266
Big Creek	36-14-15W	1935	6,800	759,081	11,156,240			166	K.C.-Lans. Gorham Arbuckle Reagan	2,908 3,152 3,171 3,200
Boxberger	36-15-15W	1935	160	6,435	213,498			4	K.C.-Lans.	3,147
Bunker Hill	31-13-12W	1935		abandoned during 1949						
Claussen	27-12-14W	1944	80	6,671	15,752			2	K.C.-Lans.	2,855
Claussen North	22-12-14W	1949	40	no report	none				K.C.-Lans.	2,956
Claussen West	29-12-14W	1949	40	580	580			1	K.C.-Lans.	2,841
Davidson*	4-16-11W	1930	1,150	7,057	151,799			2	K.C.-Lans. Sooy Arbuckle	3,016 3,317 3,314
Dillner Northwest	27-13-15W	1947	80	2,511	6,393			3	Arbuckle	3,318

Donovan	10-15-15W	1935	200	11,056	191,871	3	K.C.-Lans.	3,193
							Arbuckle	3,216
Donovan North	3-15-15W	1945	40	no report	none			
Driscoll	30-15-11W	1940	280	no report	65,007		Arbuckle	3,255
Dubuque	34-15-12W	1935	640	57,256	578,232	11	K.C.-Lans.	3,275
							Arbuckle	3,330
Ely	15-15-13W	1949	40	2,180	2,180	1	Shawnee	2,946
Eulert	35-11-15W	1949	200	5,785	5,785	4	Arbuckle	3,316
Fairport*	8-12-15W	1923	4,000	791,943	19,316,895	165	K.C.-Lans.	2,950
							Sooy	3,137
							Gorham	3,211
							Arbuckle	3,312
							Simpson	3,316
							Reagan	3,350
Forest Hill	29-15-12W	1941	1,800	359,832	2,074,327	44	Shawnee	2,560
							K.C.-Lans.	2,918
							Arbuckle	3,320
Forest Hill North	20-15-12W	1947	200	14,684	23,551	3	Shawnee	2,640
							Arbuckle	3,270
Gideon	8-15-14W	1930	abandoned during 1949					
Gorham	32-13-15W	1926	7,700	1,453,135	35,934,899	250	Shawnee	2,765
							Arbuckle	3,289
							Reagan	3,299
Gustason	14-15-12W	1941	260	23,698	135,169	7	Shawnee	2,924
							K.C.-Lans.	3,050
Gustason Northwest	15-15-12W	1943	580	107,071	449,583	12	K.C.-Lans.	3,021
							Arbuckle	3,322
Hall-Gurney	30-14-13W	1931	21,500	3,393,143	40,642,062	741	Indian Cave	1,985
							Wabaunsee	2,400
							Topeka	2,675
							Oread	2,813
							K.C.-Lans.	2,985
							Gorham	3,165
							Arbuckle	3,192
							Pre-Cambrian	3,156
Homer	17-14-13W	1949	60	5,637	5,637	1	Tarkio	2,396
Homer Southeast	16-14-13W	1949	40	115	115	1	Tarkio	2,408
Janne	24-15-12W	1943	500	22,391	118,043	8	K.C.-Lans.	
							Arbuckle	3,319
Jerry	4-15-14W	1942	320	3,243	49,598	2	Wabaunsee	
							K.C.-Lans.	2,985
							Arbuckle	
Kaufman*	33-15-12W	1947	40	12,044	37,470	1	Arbuckle	3,311
Lewis	28-14-12W	1940	40	no report	12,753		Wabaunsee	2,317
Mahoney	8-14-12W	1940	40	no report	44,489		K.C.-Lans.	2,977
Meier	30-15-12W	1948	60	29,197	33,769	3	Arbuckle	3,325
Ney	31-15-12W	1948	200	41,482	71,140	5	K.C.-Lans.	3,240
							Arbuckle	3,350
Parker	18-15-12W	1948	380	35,278	35,278	8	Shawnee	2,957
							Arbuckle	3,259

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Parker Northwest	7-15-12W	1949		combined with Parker						
Piester	24-15-13W	1949		combined with Trapp						
Russell	22-13-14W	1934	2,200	393,387	8,364,889			69	K.C.-Lans. Arbuckle	3,195 3,280
Russell East	25-13-14W	1949	100	7,628	7,628			3	Arbuckle	3,273
Russell North	15-13-14W	1942	40	no report	21,103				K.C.-Lans.	2,978
Smoky Hill	2-15-14W	1938	100	no report	124,429				K.C.-Lans.	2,950
Strecker	21-15-14W	1943	120	3,406	42,125			2	Arbuckle	3,342
Trapp*	23-15-14W	1936	22,000	5,394,829	73,652,370			832	Shawnee Dodge K.C.-Lans. Arbuckle	2,889 2,966 3,062 3,252
Trapp East	14-15-13W	1949	40	1,621	1,621			1	Arbuckle	3,277
Totals for Russell County			74,230	13,125,372	195,968,626			2,397		
Saline County										
Hunter	20-16-1W	1943	850	86,565	867,382			19	"Chat"	2,681
Hunter North	8-16-1W	1948	160	10,436	14,024			4	"Miss. lime"	2,674
Mentor	13-15-3W	1944	40	2,218	11,285			1	Viola	3,258
Olsson	10-16-3W	1929	320	27,258	108,385			6	Viola	3,303
Salina	30-14-2W	1943	1,410	93,129	604,093			22	Viola	3,223
Salina South	32-14-2W	1946	300	22,684	82,124			7	Viola	3,246
Totals for Saline County			3,080	242,290	1,687,293			59		
Scott County										
Shallow Water	15-20-33W	1935	1,000	41,858	1,727,511			9	Marmaton "Miss. lime" Ste. Genevieve	4,286 4,660 4,670
Sedgwick County										
Bartholomew	30-27-4W	1948	320	41,004	53,077			7	"Miss. lime"	3,732
do	30-27-4W	1946	80			no report	none		"Miss. lime"	3,732
Bartholomew North	30-27-4W	1949		combined with Bartholomew						
Chambers	10-29-2W	1948	60	6,546	10,643			2	"Miss. lime"	3,540

Clearwater	22-29-2W	1944	200	8,540	79,612			4	K.C.-Lans. 2,913
Cross	27-25-1W	1929	160	2,096	75,138			1	K.C.-Lans. 2,690
Curry	11-27-1W	1947	200	38,471	66,471			6	K.C.-Lans. 2,715
Derby	32-28-2E	1937				no longer productive; used for gas storage only.			"Stalnaker" 2,215 K.C.-Lans. 2,228
Eastborough	19-27-2E	1929	870	68,083	8,686,335			26	"Chat" 2,956 Viola 3,238
Fairview	8-26-2E	1948	600	56,942	72,252			9	K.C.-Lans. 2,500 "Burgess sand" 2,960
Fairview North	5-26-2E	1948	combined with Fairview						
Goodrich	16-25-1E	1928	780	97,843	4,416,138			28	K.C.-Lans. 2,614 "Chat" 3,010 Kinderhookian 3,334 Arbuckle 3,339
Greenwich	14-26-2E	1929	800	183,778	10,910,056			31	"Chat" 2,885 Viola 3,321
Greenwich South	22-26-2E	1945	80	no report	9,232				"Chat" 2,896
Hinkle	1-27-1E	1946	80	276	10,153			2	"Burgess" 2,980
Hohn	22-27-1W	1945	80	29,290	44,233			3	K.C.-Lans. 2,779
Petrie	36-26-1W	1945	40	9,452	50,239			1	Viola 3,387
Robbins	20-28-1E	1929	1,060	80,271	2,530,138			52	"Miss. lime" 3,090
Schulte	7-28-1W	1947	300	29,100	134,663			7	Mississippian 3,349 Simpson 3,658
do	7-28-1W	1949	80			166,952	166,952	1	
Valley Center	1-26-1W	1928	2,150	111,403	21,764,049			51	K.C.-Lans. 2,860 Kinderhookian 3,380 Viola 3,366
White Cotton	30-26-2E	1948	320	60,036	67,223			12	"Burgess" 2,957
Total Sedgwick County oil			8,100	823,131	48,979,652			242	
Total Sedgwick County gas			160			166,952	166,952	1	

Seward County

Hugoton*						See Hugoton field			
Kismet	23-33-31W	1948	160	5,369	12,680			1	Marmaton 5,095
Liberal	3-35-34W	1947	2,200			424,043	1,290,376	6	Permian 2,800
Liberal Southeast	15-35-33W	1947	420	12,114	34,616			2	Penn. sandstone 6,202
do	15-35-33W	1947	860			1,525,785	3,926,079	3	Penn. sandstone 6,202
Total Seward County oil			580	17,483	47,296			3	
Total Seward Co. gas (excl. Hugoton)			3,060			1,949,828	5,216,455	9	

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Sheridan County										
Adell	11-6-27W	1944	1,200	379,597	1,610,023			38	K.C.-Lans.	3,755
Studley	23-8-26W	1943	340	39,426	299,585			6	K.C.-Lans.	3,810
Studley Southwest	32-8-26W	1945	40	5,551	31,512			1	K.C.-Lans.	3,758
Totals for Sheridan County			1,580	424,574	1,941,120			45		
Stafford County										
Ahnert	26-22-13W	1941	40	2,277	38,799			1	Arbuckle	3,784
Bedford	21-23-12W	1940	850	68,916	1,304,561			14	Arbuckle	3,859
Black Cloud	3-21-12W	1949		combined with Workman SE and later with Bryant						
Bradbridge*	6-24-15W	1948	80			no report	none		Arbuckle	4,020
Brock	12-23-12W	1944	640	38,446	277,454			10	Arbuckle	3,680
Bryant*	4-21-12W	1949	320	16,732	16,732			4	Arbuckle	3,383
Byron	4-21-12W	1943	40	no report	11,146				Arbuckle	3,460
Cadman	4-25-13W	1944	40	no report	4,571				Viola	4,064
Copeland	30-24-13W	1948	60	no report	none				K.C.-Lans.	3,752
Curtis	6-22-13W	1942	400	72,328	443,615			9	Arbuckle	3,693
Drach	12-22-13W	1937	2,560	474,553	3,750,455			50	Arbuckle	3,690
Drach Northwest	11-22-13W	1944	250	21,041	65,131			6	Arbuckle	3,738
Drach West	14-22-13W	1938	160	7,323	108,061			2	Arbuckle	
Farmington	34-24-15W	1943	850	89,694	834,621			17	Kinderhookian Arbuckle	4,417
do	27-24-15W	1948	50			490,353	691,757	3	Mississippian	4,207
Fischer	31-21-12W	1938	160	12,562	318,586			3	Arbuckle	3,641
Fischer Northwest	36-21-13W	1948	430	242,174	261,943			14	Arbuckle	3,639
Gates	27-21-13W	1933	760	295,504	1,858,097			31	Arbuckle	3,679
Gates South (Revived)	3-22-13W	1949	60	5,206	5,206			1	Arbuckle	3,748
Gray	11-24-13W	1946	120	4,831	31,595			3	K.C.-Lans.	3,762
Grow	16-21-13W	1949	160	13,051	13,051			4	Arbuckle	3,705
Grunder	11-25-15W	1943	40	1,788	17,878			1	K.C.-Lans.	3,945
Hart	36-22-14W	1949	60	5,064	5,064			2	Arbuckle	3,830
Hazel	21-21-13W	1942	250	13,192	228,841			6	Arbuckle	3,692
Heyen	24-22-12W	1943	800	117,925	344,317			17	Arbuckle	3,652
Hildebrand	2-24-12W	1948	160	20,830	20,830			6	Viola	3,771
Hildebrand South	11-24-12W	1949		combined with Hildebrand					Viola	3,810

Hufford	33-21-13W	1948	300	72,374	113,408			9	Arbuckle	3,755
Jordan	15-25-14W	1936	300	25,160	666,699			7	K.C.-Lans.	3,722
Kelly	35-23-12W	1948	40	1,883	4,204			1	Arbuckle	3,870
Kenilworth	15-22-13W	1947	300	78,757	137,377			9	K.C.-Lans. Arbuckle	3,505 3,808
Kipp	27-25-14W	1937	500	23,089	567,955			11	K.C.-Lans.	3,827
Kipp Northeast	23-25-14W	1946	120	26,011	126,708			3	K.C.-Lans.	3,844
Leesburgh	12-25-13W	1938	700	113,980	2,238,145			16	Arbuckle	4,153
McCandless	30-25-13W	1944	280	52,702	261,184			6	Simpson	4,251
Macksville	3-24-15W	1947	160			748,629	1,479,320	7	K.C.-Lans.	
Max	35-21-12W	1938	3,600	349,411	3,061,380			57	K.C.-Lans. Arbuckle	3,356 3,570
Merle	32-23-13W	1949	300	48,861	48,861			8	K.C.-Lans.	3,669
Moon	4-22-13W	1948	40	3,696	4,066			1	K.C.-Lans.	3,530
Mueller	29-21-12W	1938	1,780	249,448	2,365,875			50	Arbuckle	3,594
Mueller West	24-21-13W	1949	40	930	930			1	Arbuckle	3,658
Nellie	28-22-14W	1948	40	8,131	15,831			1	K.C.-Lans.	3,696
Neola	15-25-11W	1948	40	6,463	10,850			1	Viola	3,921
O'Connor	8-24-15W	1948	40	2,057	3,527			1	K.C.-Lans.	3,768
do	16-24-15W	1947	160			no report	none		Arbuckle	4,061
Oscar	24-22-14W	1949	60	2,913	2,913			1	K.C.-Lans. Arbuckle	3,503 3,798
Prairie Home	2-21-13W	1949	40	5,516	5,516			2	Arbuckle	3,514
Pundsack	19-21-13W	1947	80	32,704	58,070			4	Arbuckle	3,735
Rattlesnake	13-24-14W	1938	80	13,620	102,655			2	K.C.-Lans.	3,608
Rattlesnake West	11-24-14W	1944	40	3,994	21,934			1	K.C.-Lans.	3,759
Richardson	36-22-12W	1930	1,240	596,686	9,936,819			62	Arbuckle	3,537
Richland	27-24-14W	1944	200	12,106	171,203			5	Arbuckle	4,232
Riley	28-23-11W	1940	120	6,695	119,216			2	K.C.-Lans.	3,323
Rothgarn	10-21-13W	1943	640	47,740	125,221			8	Arbuckle	3,569
Rothgarn East	11-21-13W	1948	combined with Rothgarn							
St. John	23-24-13W	1935	980	86,321	2,392,981			20	K.C.-Lans. Arbuckle	3,588 4,075
St. John Townsite	33-23-13W	1944	380	29,833	250,788			9	K.C.-Lans. Arbuckle	3,919
Sandago	12-21-12W	1947	250	22,961	86,585			6	Arbuckle	3,480
Sand Hills	19-21-11W	1944	80	5,697	40,941			2	Arbuckle	3,548
Saundra	14-21-12W	1946	300	20,936	99,497			7	Arbuckle	3,546
Shaeffer	3-21-13W	1941	300	15,174	296,171			4	K.C.-Lans. Arbuckle	3,404 3,546
Silver Bell	10-22-13W	1949	100	5,427	5,427			2	Arbuckle	3,774
Sittner	33-21-12W	1937	400	141,131	558,006			12	K.C.-Lans. Arbuckle	3,278 3,600
Sittner South	3-22-12W	1938	combined with Max							
Snider	3-21-11W	1936	400	20,474	379,068			2	Simpson	3,362

TABLE 44.—*Oil and gas production in Kansas, continued*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Snider South	16-21-11W	1938	580	98,348	912,114			12	Simpson Arbuckle	3,402
Spangenberg	21-22-12W	1943	40	6,099	68,700			1	Arbuckle	3,691
Stafford	15-24-12W	1940	800	161,507	2,646,703			21	Viola Arbuckle	3,836 3,945
Syms	20-21-12W	1943	200	27,625	127,555			2	Arbuckle	3,580
Syms East	21-21-12W	1947	40	1,960	4,378			1	Arbuckle	3,565
Van Lieu	20-24-13W	1943	120	11,289	185,530			3	Arbuckle	4,069
Zenith-Peace Creek*	23-24-11W	1937	8,500	429,997	19,696,110			177	Viola	3,860
do*	23-24-11W	1937	340			347,340		8 est.	Viola	3,860
Total Stafford County oil			33,600	4,393,143	57,881,655			751		
Total Stafford County gas			790			1,586,322	2,171,077	18		
Stanton County (See Hugoton field)										
Stevens County (See Hugoton field)										
Sumner County										
Alton	10-35-2W	1949	40	1,669	1,669			1	Simpson	4,711
Anness	2-30-4W	1937	40	13,253	138,893			1	Simpson	4,394
Anson	35-30-2W	1948	40	16,423	25,922			3	"Miss. lime"	3,742
Bellman	15-30-1E	1945	300	27,464	186,332			4	Simpson	3,798
Caldwell	17-35-3W	1929	200	35,247	1,352,065			3	Simpson	4,765
Chandler	4-35-2E	1942	40	150	9,451			1	"Miss. lime"	3,450
Churchill	25-31-2E	1926	800	602,067	16,673,031			34	"Stalnaker" Arbuckle	1,820 2,632
Corbin	23-34-2W	1948	60	32,024	32,514			1	Simpson	4,475
Latta	9-30-2W	1927	500	32,310	1,104,504			10	K.C.-Lans.	3,042
Margaret	36-32-2E	1946	300	12,550	81,926			6	Arbuckle	3,474
Murphy*	7-35-3E	1933	80	see Cowley County						
Oxford	14-32-2E	1927	800	134,113	15,786,670			35	Hoover "Stalnaker" "Layton" Arbuckle	1,930 2,020 2,510 2,890
Oxford West	17-32-2E	1926	240	35,658	612,042			6	Simpson Arbuckle	3,681

Padgett	22-34-2E	1925	2,000	80,533	1,845,196		23	"Miss. lime" Simpson	3,474 3,744
do	23-34-2E	1924	640			no report		"Miss. lime"	3,474
Perth	12-33-2W	1945	600	116,250	377,017		12	"Wilcox"	4,264
Rainbow Bend West*	24-33-2E	1925	160	no report	453,000			Arbuckle	
Rutter	21-33-2E	1926	80	no report	96,734			"Miss. lime"	3,315
Val Verde	23-33-2E	1945	40	642	3,913		1	"Bartlesville"	3,280
Vernon North	15-35-2E	1930	1,860	59,609	781,745		23	"Miss. lime"	3,443
do	15-35-2E	1915	640			no report			
Wellington	33-31-1W	1929	2,500	308,586	7,133,412		133	"Chat"	3,655
do	33-31-1W	1929				no longer productive; used for gas storage only.		"Chat"	3,655
Zyba	7-30-1E	1937	600	33,557	251,370		8	Simpson	3,866
Zyba Southwest	22-30-1W	1944	400	100,939	145,470		10	Simpson	3,918
Total Sumner County oil Total Sumner County gas			11,680 1,280	1,643,044	47,092,876		315		

Trego County

Cotton	15-12-21W	1945	40	3,468	21,633	1	Arbuckle	3,958
Cotton East	14-12-21W	1947	80	9,220	23,270	2	Arbuckle	3,942
Ellis*	31-12-20W	1942	390	35,757	252,267	4	Arbuckle	3,832
Ellis Northwest	26-12-21W	1944	450	16,561	144,977	5	Arbuckle	3,925
Riga	20-13-21W	1947	40	no report	16,045		Marmaton	3,902
Wakeeney	14-11-23W	1934	640	37,852	741,696	5	K.C.-Lans.	3,619
Wakeeney East	13-11-23W	1949	40	3,764	3,764	1	K.C.-Lans.	3,576
Totals for Trego County			1,680	106,622	1,203,652	18		

Wabaunsee County

Davis Ranch	33-13-10E	1949	320	46,659	46,659		9	Viola	3,201

Wilson County

Altoona (6)	10-29-16E	1903	900	2,424				"Squirrel" "Bartlesville"	650 900
Altoona East* (9)	29-17E		400	3,869				"Bartlesville"	900
Benedict	28-15E		300					"Bartlesville"	1,000
7				1,154					
8				299					
Buffalo* (3)	27-16E	1924	450	3,770				"Bartlesville" Cherokee	1,025 1,150
Coyville*	27-14E		?	110				Mississippian	1,340

TABLE 44.—*Oil and gas production in Kansas, concluded*

Pool or Field	Location†	Discovery year	Area, acres	1949 oil production, bbls.	Cumulative oil production, bbls.	1949 gas production, M cu. ft.	Cumulative gas production, M cu. ft.	No. producing wells	Producing zone	Depth to producing zone, ft.
Fredonia	29-15E	1890	800						"Burgess"	1,050
14				120						
15				4,164						
Humboldt-Chanute* (4)	28-17E		300	1,278					"Bartlesville"	850
Neodesha*	30-16E		10,500						"Bartlesville"	950
10				9,556						
11				546						
12				477						
13			10,500	25,748				157+		
Vilas	27-17E	1905	350						"Bartlesville"	1,000
1				1,913						
2				5,233						
"Wiggins" (5)	28-17E		300	4,253					"Bartlesville"	850
Miscellaneous				30		148,722				
Total Wilson County oil			14,300	64,944						
Total Wilson County gas						148,722		157+		
Woodson County										
Batesville (18)	34-25-14E	1934	200	5,901				3+	"Bartlesville"	1,450
Batesville SW (20)	32-25-14E	1949		not recorded					Lansing	680
Big Sandy (23)	23-26-14E	1923	600	28,589				1+	"Bartlesville"	1,230
Buffalo* (21)	26-16E	1924	400	2,199					"Bartlesville"	950
									Cherokee	1,150
Evans* (5)	21-23-15E	1938	80	2,002				2	Mississippian	1,540
Hoagland (7)	2-24-14E	1929	950	33,604				23	Mississippian	1,635
Humboldt-Chanute*	25-17E		700						"Bartlesville"	900
14				2,386						
15				654				4+		
"Keowen" (11)	34-24-17E		250	911				6		
Neosho Falls*	31-23-16E	1928	3,200							
1				2,114				9+	"Squirrel"	950
2				25,910				17	Mississippian	1,200
Piqua (10)	22-24-17E	1938	500	2,793				10	Mississippian	1,190
Quincy* (19)	14-25-13E	1932	2,600	131,805				72+	"Bartlesville"	1,500
Silver City (22)	19-26-15E	1946	100	148					"Bartlesville"	1,400
Toronto*	16-26-13E	1913		Incl. in Greenwood Co.						
Vernon	23-16E		80					2	Mississippian	1,420
3				643						
4				82						
Virgil North* (9)	22-23-13E	1920	900	27,809				4+	"Bartlesville"	1,585
									Mississippian	1,840

Weide (6)	31-23-15E	1937	160	2,954		4	Mississippian	1,570
Winterscheid* (8)	23-14E		9,300	326,820		94+	"Bartlesville"	1,630
							Mississippian	1,750
Wissman (12)	3-24-15E	1936	250	3,540		8	Mississippian	1,520
Yates Center	28-25-15E		1,200			1+	Mississippian	1,480
16				11,013				
17				502				
Zlab (13)	9-24-14E	1949					Mississippian	1,656
Miscellaneous				1,651	1,376			
Total Woodson County oil			21,470	614,030		260+		
Total Woodson County gas					1,376			

Wyandotte County

Roberts-Maywood*	11-23E				37,303			

Miscellaneous Eastern Kansas

5,209

* Field extends into adjacent county or counties.
¶ Production in numbered areas of the field may come from one or more of these producing zones.
† Where section is given reference is to discovery well. Where only T. and R. are given reference is to field location.
‡ Producing gas wells under Pawnee Rock, Ryan, Ash Creek, and Behrens pools, totaling 66, are divided equally among Barton, Pawnee, and Rush Counties.
§ Area from which the production comes is not definitely known.

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