Press Bulletin Series For The Oil And Gas Industry

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
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No. 25 ILLINOIS PETROLEUM July 21, 1934

Oil and Gas Development in Illinois in 1933*

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(Presented before the American Institute of Mining and Metallurgical Engineers, New York Meeting February, 1934)

Continued low prices and restricted markets for crude oil discouraged drilling activity in Illinois oil fields during 1933. Only 36 wells were completed in the state, the smallest number since 1904, and of these the majority were scattered wildcat wells, only 10 having been drilled in producing fields (Table 2). Production was curtailed approximately 40 per cent for the first half of the year. During July, August, and the early part of September there was no restriction on production. On Sept. 8, under the "code of fair competition for the petroleum industry," the quota of allowable production for Illinois was fixed at 12,000 bbl. per day. The state's production in 1933 was 9 per cent less than in 1932. What it would have been had there been no curtailment of production and if economic conditions had permitted a normal amount of cleaning out and repairs to wells, it is not possible to estimate, but it would no doubt have been considerably more than the actual figure. No new pools or new producing horizons were discovered in 1933, but the deepening of a Robinson sand well in Crawford County to the McClosky "sand" horizon (St. Genevieve limestone of the Lower Mississippian) resulted in a production of 3 bbl. per day (Fred Patchel, Savilla Shipman No. 5, NE. ¼, SW. ¼, sec. 26, T.6N., R.13W., deepened from 1122 to 1388 ft., August, 1933). Considerable parts of the Crawford County field remain to be tested to the McClosky horizon, and, owing to the rapid variations in porosity within short distances, as shown in the Lawrence County field to the south, one test may not be considered as proving or condemning any large area.

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* Reprinted from *Trans.* A.I.M.E. (1934) **107**, 205–217.

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The average price of Illinois crude oil in 1933, calculated from the posted prices as published in the *Oil and Gas Journal* and *Oil Weekly*, was $0.862 per barrel. This compares with a calculated average price of $1.032 in 1932 and 0.852 in 1931. The total value of Illinois crude oil produced in 1933 obtained by multiplying the average price (0.862) by the total production (4,227,000 bbl.) was $3,643,674.

Of the 26 wildcat wells drilled in 1933, only one was drilled on known favorable structure. This was the Walmar Oil Company's William Pepple well No. 1, sec. 12, T.4N., R.12W., Hancock County, which tested the Warsaw anticline.[1] The lowest horizon tested was the St. Peter sandstone, and fresh water was found in the "Trenton." The total depth was 901 feet.

In the southeastern Illinois field, which has yielded 97 per cent of the state's total production to date, only seven wells were drilled. Six were oil producers having a total initial production of 32 bbl.; one was a gas producer. During 1933 this field produced 90 per cent of the state's total.

The southeastern Illinois field has produced 400,000,000 bbl. of oil and ranks fifth in total production to date in the United States. Available data indicate that probably four-fifths of the original oil is still underground, which would mean a total reserve of 1,600,000,000 bbl. Undoubtedly a substantial quantity will be recoverable by improved methods, possibly as much as 50 per cent of the amount already produced, or 200,000,000 bbl. Increasing attention is being given by the industry to improved recovery methods.

On May 12, 1933, the First Annual Petroleum Conference of Illinois, sponsored by the Illinois-Indiana Petroleum Association, the Illinois State Geological Survey, and the Illinois Chamber of Commerce, was held at Robinson. This conference was devoted to the discussion of improved recovery methods, including air and gas repressuring, and water-flooding. The results of certain studies by the State Geological Survey on these subjects have been published, and the preparation of reports for additional publications is in progress.

The existence of natural water drives in certain areas that resulted in substantial increases in the rate of production on leases located in the path of the advancing flood suggests that artificial water-flooding, such as is practiced in the Bradford field, Pennsylvania, may be applicable to parts of the southeastern Illinois oil field. However, since previously existing statutes required that fresh water be prevented from entering oil sands, new legislation was necessary before tests of artificial water-flooding could be made legally. On June 8, 1933, an amendment to the statute was enacted which permits the injection of water or other fluid into an oil sand for the purpose of recovering oil.

[1] A. H. Bell: Oil Possibilities of the Warsaw Area, Hancock County, Illinois. Ill. State Geol. Survey Press Bull. Ser., Ill. Petr. No. 24 (Dec., 1932).

Two actual tests of artificial water-flooding were begun in 1933, one in the Carlyle oil field, Clinton County, by the Ohio Oil Co. and the other in the main Crawford County field (sec. 12, T.7N., R.14W., Oblong Township) by the Tidewater Oil Co. An increased rate of production from three wells surrounding the input well has already been noted in the latter locality.

No new repressuring plants were installed in Illinois fields during 1933, but all of the existing plants continued in operation. As soon as economic conditions permit, probably there will be a considerable number of new installations. Compressers are now being installed by the Ohio Oil Co. in the Colmar-Plymouth field in McDonough County.

The figures for production by fields (Table 1) were estimated after taking into consideration the state totals as published by the Bureau of Mines, unpublished statistics on production by company and by county in the files of the Illinois State Geological Survey, for the years 1914–1926 inclusive, and estimated productions for various fields in 1932 and 1933 furnished by the Ohio Oil Co. and Illinois Pipe Line Co.

Some of the data on the Wamac field, Marion, Washington and Clinton counties, were furnished by Mr. H. A. Wheeler, Petro Oil Co., St. Louis, Mo. Data on wells and gas production in the Spanish Needle Creek and Gillespie areas were furnished by the Illinois Power and Light Corporation, Hillsboro, Ill. The figures given for maximum and minimum gravity of oil by fields (Table 1) were from a list of gravities by leases determined in November, 1925, furnished by the Illinois Pipe Line Co., and a weighted average for each field has been estimated. There has been a decrease in average gravity of Illinois oil from 33.2° A.P.I. in 1925 to 31.7° A.P.I. in 1933.

The great majority of Illinois oil wells have also produced casinghead gas and, although the gas pressure is now very low, many wells still produce some gas. In the early life of the southeastern Illinois field gas was supplied for municipal use to about 20 towns and villages in the area, but in recent years the available gas has been used only for power on the leases and for making natural-gas gasoline. It is not possible now to ascertain accurately the extent of the areas that produced casinghead gas, and accordingly the acreage productive of oil only and of oil and gas is combined in Table 1.

The total amount of natural-gas gasoline produced in Illinois to the end of 1932 was 118,902,000 gal. (U. S. Bureau of Mines statistics) and the average yield was 2.3 gal. per 1000 cu. ft. This gives a total amount of gas treated, to the end of 1932, of 51,800,000,000 cu. ft. and compares with a total of 104,586,000,000 cu. ft. of natural gas produced in Illinois for the same period. This total is supposed to include gas used for power on leases but does not include gas wasted.

The total production of natural gas in Illinois according to the definition adopted in this symposium is not known.

TABLE 1.—*Oil and Gas Production in Illinois*

Line Number	Field, *County*	Age, Years to End of 1933	Year Abandoned	Area Proved, Acres			Total Oil Production, Bbl.			Daily Average during Nov., 1933
				Oil + Oil and Gas	Gas	Total	To End of 1933	During 1932	During 1933	
1	Warrenton-Borton, *Edgar*....	27		100	0	100	25,000±	*y*	730±	2
2	Westfield (Parker Twp.), *Clark, Coles*.....	29		9,000	50	9,050	*x*	*x*	*x*	*x*
3				850	70	920	*x*	*x*	*x*	*x*
4				9,000	0	9,000	*x*	*x*	*x*	*x*
5				1,500	0	1,500	*x*	*x*	*x*	*x*
6	Siggins (Union Twp.), *Cumberland, Clark*.....	27		3,580	75	3,655	*x*	*x*	*x*	*x*
7				3,135	55	3,190	*x*	*x*	*x*	*x*
8				435	15	450	*x*	*x*	*x*	*x*
9				855	105	960	*x*	*x*	*x*	*x*
10	York, *Cumberland*.....			310	40	350	*x*	*x*	*x*	*x*
11	Casey, *Clark*.....	27		1,925	55	1,980	*x*	*x*	*x*	*x*
12				190	15	205	*x*	*x*	*x*	*x*
13				400	0	400	*x*	*x*	*x*	*x*
14				1,525	15	1,540	*x*	*x*	*x*	*x*
15	Martinsville, *Clark*.....	26		710	155	865	*x*	*x*	*x*	*x*
16				15	20	35	*x*	*x*	*x*	*x*
17				275	35	310	*x*	*x*	*x*	*x*
18				105	0	105	*x*	*x*	*x*	*x*
19				170	0	170	*x*	*x*	*x*	*x*
20				195	0	195	*x*	*x*	*x*	*x*
21				5	0	5	*x*	*x*	*x*	*x*
22	North Johnson, *Clark*.....	26		1,320	20	1,340	*x*	*x*	*x*	*x*
23				1,115	0	1,115	*x*	*x*	*x*	*x*
24				160	0	160	*x*	*x*	*x*	*x*
25				820	5	825	*x*	*x*	*x*	*x*
26				215	0	215	*x*	*x*	*x*	*x*
27	South Johnson, *Clark*.....	26		1,715	65	1,780	*x*	*x*	*x*	*x*
28				185	5	190	*x*	*x*	*x*	*x*
29				295	0	295	*x*	*x*	*x*	*x*
30				1,675	35	1,710	*x*	*x*	*x*	*x*
31				845	5	850	*x*	*x*	*x*	*x*
32	Bellair, *Crawford, Jasper*.....	26		1,300	5	1,305	*x*	*x*	*x*	*x*
33				1,165	0	1,165	*x*	*x*	*x*	*x*
34				315	0	315	*x*	*x*	*x*	*x*
35				910	0	910	*x*	*x*	*x*	*x*
36	Clark County Division[1].....			19,960	465	20,425	50,000,000	541,000	475,000	1,500
37	Main,[9] *Crawford*.....	27		35,135	515	35,650	*x*	*x*	*x*	*x*
38				340	0	340	*x*	*x*	*x*	*x*
39				33,795	515	34,310	*x*	*x*	*x*	*x*
40				1,000	0	1,000	*x*	*x*	*x*	*x*
41	New Hebron, *Crawford*.....	24		1,350	210	1,460	*x*	*x*	*x*	*x*
42	Chapman, *Crawford*.....	19		1,045	515	1,560	*x*	*x*	*x*	*x*
43	Parker, *Crawford*.....	26		1,310	30	1,340	*x*	*x*	*x*	*x*
44	Allison-Weger, *Crawford*.....	*y*		1,075	20	1,095	*x*	*x*	*x*	*x*
45	Flat Rock,[10] *Crawford*.....	*y*		1,375	545	1,820	*x*	*x*	*x*	*x*
46	Birds, *Crawford, Lawrence*....	*x*		4,370	115	4,485	*x*	*x*	*x*	*x*
47	Crawford Co. Division[6].....	27		45,655	1,945	47,600	136,000,000	1,532,000	1,471,000	4,650

[1] Total of lines 1, 2, 6, 10, 11, 15, 22, 27, 32.
[6] Total of lines 37, 41, 42, 43, 44, 45, 46.
[9] Includes Kibbie, Oblong, Robinson and Hardinsville
[10] Includes Swearingen Gas.

TABLE 1.—(*Continued*)

Line Number	Field, *County*	Age, Years to End of 1933	Year Abandoned	Area Proved, Acres			Total Oil Production, Bbl.			Daily Average during Nov., 1933
				Oil + Oil and Gas	Gas	Total	To End of 1933	During 1932	During 1933	
48	Lawrence, *Lawrence* and *Crawford*	27		24,150	1,550	25,700	*x*	*x*	*x*	*x*
49				5,015	35	5,050	*x*	*x*	*x*	*x*
50				2,240	0	2,240	*x*	*x*	*x*	*x*
51				135	1,095	1,230	*x*	*x*	*x*	*x*
52				15,690	220	15,910	*x*	*x*	*x*	*x*
53				4,815	200	5,015	*x*	*x*	*x*	*x*
54				6,370	0	6,370	*x*	*x*	*x*	*x*
55	St.			420	0	420	*x*	*y*	*y*	*y*
56	Lawrence County Division[7]			24,570	1,550	26,120	214,000,000	1,980,000	1,650,000	5,250
57	Allendale, *Wabash*	21		1,660	0	1,660	3,500,000±	240,000±	220,000±	604
58	Total Southeastern Illinois Field[8]			91,845	3,960	95,805	403,500,000	4,293,000	3,816,000	12,304
59	Colmar-Plymouth, *McDonough, Hancock*	19 5		2,450	0	2,450	1,800,000	91,200	93,900	257
60	Pike County Gas, *Pike*	28	1920±	0	8,960	8,960	0	0	0	0
61	Jacksonville Gas, *Morgan*	23		30	1,290	1,320	2,100	0	0	0
62	Carlinville, *Macoupin*	24	1925±	30	50	80	*x*	0	0	0
63	Spanish Needle Creek, *Macoupin*	18		0	80	80	0	0	0	0
64	Gillespie (Wyen), *Macoupin*	18		40	0	40	*x*	1,825	1,095	3
65	Gillespie-Benld Gas, *Macoupin*	10		0	80	80	0	0	0	0
66	Staunton, *Macoupin*	17	1919	0	400	400	0	0	0	0
67	Litchfield, *Montgomery*	54	1904	100	0	100	22,000	0	0	0
68	Collinsville, *Madison*	24	1921	40	0	40	715	0	0	0
69	Ayers Gas, *Bond*	11		0	280	280	0	0	0	0
70	Greenville Gas, *Bond*	23	1926±	0	160	160	0	0	0	0
71	Carlyle, *Clinton*	22		915	0	915	3,200,000±	23,712	22,427	60
72	Frogtown, *Clinton*	15		300	0	300	*x*	0	0	*x*
73	Sandoval, *Marion*	24		770	0	770	2,500,000±			
74	Centralia, *Marion*	23		175	0	175	*x*	66,300±	59,800±	160
75	Wamac, *Marion, Clinton, Washington*	12		250	0	250	300,000±			
76	Dupo, *St. Clair*	5		670	0	670	733,000	117,000	150,000	400
77	Waterloo, *Monroe*	13	1930	125	0	125	166,000	0	0	0
78	Sparta Gas, *Randolph*	45	*x*	65	100	165	*x*	0	0	0
79	Ava-Campbell Hill, *Jackson*	16		70	370	440	25,000	0	0	0
80	Total Illinois[11]			97,875	15,730	113,605	412,276,000	4,673,000	4,227,000	12,933

[7] Total of lines 48 and 55. [8] Total of lines 36, 47, 56 and 57. [11] Total of lines 58 to 79, inclusive.

TABLE 2.—*Summary of Drilling Operations in Illinois*
(Figures in body of tabulation represent number of holes.)

County	Completed Prior to Jan. 1, 1934									Completed during 1933				
	Dry and/or Near-dry Holes								Productive Wells (For Details, See Table 1)	Dry and/or Near-dry Holes				Productive Wells (For Details, See Table 1)
	Total Depths, Ft.									Total Depths, Ft.				
	Less 1,000	1,000–2,000	2,000–3,000	3,000–4,000	4,000–5,000	5,000–6,000	Unknown	Total		Less 1,000	1,000–2,000	2,000–3,000	Total	
Adams	0	8	1	0	0	0	0	9	0	0	0	0	0	0
Alexander	0	3	0	0	0	0	0	3	0	0	0	0	0	0
Bond	5	27	8	0	0	0	0	40	14	1	2	0	3	0
Boone	0	2	1	0	0	0	0	3	0	0	0	0	0	0
Brown	5	0	1	0	0	0	0	6	0	0	0	0	0	0
Bureau	0	8	2	0	0	0	0	10	0	0	0	0	0	0
Calhoun	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Carroll	0	2	1	0	0	0	0	3	0	0	0	0	0	0
Cass	0	3	0	0	0	0	0	3	0	0	0	0	0	0
Champaign	3	11	0	0	0	0	0	14	0	0	0	0	0	0

TABLE 1.—(*Continued*)

Line Number	Average Oil Production, Bbl.			Total Gas Production, Millions Cu. Ft.				Number of Oil and/or Gas Wells							
									During 1933		At End of 1933				
	Per Acre to End of 1933[a]	Per Acre-foot to End of 1933[a]	Per Well Daily during Nov., 1933	To End of 1933	During 1932	During 1933	Maximum Daily during 1933	Completed to End of 1933	Completed	Abandoned	Temporarily Shut Down	Producing Oil Only or Oil and Gas	Producing Oil and Gas[c]	Producing Gas Only	Total Producing
1	250	x	0.2	0	0	0	0	22	0	0	0	12	0	0	12
2	x	x	x	x	0	0	0	1,607	3		0	382	0	0	382
3	x	x	x	x	0	0	0	184	3		0	y	0	0	y
4	x	x	x	x	0	0	0	1,428	0		0	y	0	0	y
5	x	x	x	x	0	0	0	12	0		0	y	0	0	y
6	x	x	x	x	0	0	0	995	0		0	919	y	0	919
7	x	x	x	x	0	0	0	854	0		0	y	y	0	y
8	x	x	x	x	0	0	0	90	0		0	y	y	0	y
9	x	x	x	x	0	0	0	192	0		0	y	y	0	y
10	x	x	x	x	0	0	0	70	0		0	44	y	0	44
11	x	x	x	x	0	0	0	530	0		0	512	0	0	512
12	x	x	x	x	0	0	0	41	0		0	y	0	0	y
13	x	x	x	x	0	0	0	80	0		0	y	0	0	y
14	x	x	x	x	0	0	0	319	0		0	y	0	0	y
15	x	x	x	x	0	0	0	212	0		0	171	0	0	171
16	x	x	x	x	0	0	0	7	0		0	y	0	0	y
17	x	x	x	x	0	0	0	62	0		0	y	0	0	y
18	x	x	x	x	0	0	0	21	0		0	y	0	0	y
19	x	x	x	x	0	0	0	34	0		0	y	0	0	y
20	x	x	x	x	0	0	0	39	0		0	y	0	0	y
21	x	x	x	0	0	0	0	1	0		0	y	0	0	y
22	x	x	x	x	y	y	y	484	0		0	430	y	0	430
23	x	x	x	0	y	y	y	296	0		0	y	y	0	y
24	x	x	x	x	y	y	y	32	0		0	y	y	0	y
25	x	x	x	x	y	y	y	177	0		0	y	y	0	y
26	x	x	x	x	y	y	y	43	0		0	y	y	0	y
27	x	x	x	x	y	y	y	533	0		0	505	y	0	505
28	x	x	x	x	y	y	y	38	0		0	y	y	0	y
29	x	x	x	x	y	y	y	59	0		0	y	y	0	y
30	x	x	x	x	y	y	y	401	0		0	y	y	0	y
31	x	x	x	x	y	y	y	170	0		0	y	y	0	y
32	x	x	x	x	y	y	y	485	0		0	409	0	0	409
33	x	x	x	x	y	y	y	309	0		0	y	0	0	y
34	x	x	x	x	y	y	y	63	0		0	y	0	0	y
35	x	x	x	x	y	y	y	182	0		0	y	0	0	y
36	2,530	80	0 4	x	y	y	y	4,938	3	10	0	3,384	0	0	3,384
37	x	x	x	x	y	y	y	7,309	2	y	0	5,896	0	0	5,896
38	x	x	x	x	y	y	y	68	0	0	0	y	0	0	y
39	x	x	x	x	y	y	y	7,131	1	y	0	y	0	0	y
40	x	x	x	x	y	y	y	108	1	x	x	x	x	x	
41	x	x	x	x	y	y	y	295	0	x	0	203	0	0	203
42	x	x	x	x	y	y	y	193	0	y	0	94	0	0	94
43	x	x	x	x	y	y	y	255	0	x	0	226	0	0	226
44	x	x	x	x	y	y	y	146	0	x	0	77	0	0	77
45	x	x	x	x	y	y	y	280	0	x	0	164	0	0	164
46	x	x	x	x	y	y	y	682	0	x	0	486	0	0	486
47	3,000	120	x	x	y	y	y	9,160	2	17	0	6,948	0	0	6,948
48	x	x		x	y	y	y	4,381	1	x	x	3,438	y	0	3,438
49	x	x	x	x	y	y	y	1,228	0	x	x	x	x	x	x

[b] Footnotes to column headings and explanations of symbols are on page 14.

TABLE 1.—(*Continued*)

Line Number	Average Oil Production, Bbl.			Total Gas Production, Millions Cu. Ft.				Number of Oil and/or Gas Wells							
									During 1933		At End of 1933				
	Per Acre to End of 1933[b]	Per Acre-foot to End of 1933	Per Well Daily during Nov., 1933	To End of 1933	During 1932	During 1933	Maximum Daily during 1933	Completed to End of 1933	Completed	Abandoned	Temporarily Shut Down	Producing Oil Only or Oil and Gas	Producing Oil and Gas[c]	Producing Gas Only	Total Producing
50	*x*	*x*	*x*	*x*	*y*	*y*	*y*	473	0	*x*	*x*	*x*	*x*	*x*	*x*
51	*x*	*x*	*x*	*x*	*y*	*y*	*y*	201	0	*x*	*x*	*x*	*x*	*x*	*x*
52	*x*	*x*	*x*	*x*	*y*	*y*	*y*	2,978	0	*x*	*x*	*x*	*x*	*x*	*x*
53	*x*	*x*	*x*	*x*	*y*	*y*	*y*	820	0	*x*	*x*	*x*	*x*	*x*	*x*
54	*x*	*x*	*x*	*x*	*y*	*y*	*y*	832	1	*x*	*x*	*x*	*x*	*x*	*x*
55	*y*	*x*	*x*	0	0	0	0	54	0	*y*	*x*	45	*x*	*x*	45
56	8,850							4,435	1	36	*x*	3,483	*y*	*y*	3,483
57	2,100	105±	1.73	0	0	0	0	405	0	3	0	355	0	0	355
58	4,390		0.87	*x*	*y*	*y*	*y*	18,938	6	66		14,170	*y*	0	14,170
59	735	35	0.75	0	0	0	0	450	0	0	0	343	0	0	343
60				*x*	0	0	0	68	0	0	0	0	0	0	0
61	70	14±	0	*x*	*x*	*x*	*x*	53	3	*y*	*y*	0	0	*y*	*y*
62	*x*	*x*	0	*x*	0	0	0	8	0	0	0	0	0	0	0
63	0	0	0	14.44	3.43	0±	0±	7	0	0	0	0	0	0	0
64	*x*	*x*	0.75	0	0	0	0	11	0	0	0	4	0	0	4
65	0	0	0	135.8	14.6	6.53	0.06	4	0	0	0	0	0	0	0
66	0	0	0	1,050	0	0	0	18	0	0	0	0	0	0	0
67	220	*x*	0	*x*	0	0	0	17	0	0	0	0	0	0	0
68	*x*	*x*	0	0	0	0	0	5	0	0	0	0	0	0	0
69	0	0	0	*x*	*y*	*y*	*y*	10	0	0	0	0	0	7	7
70	0	0	0	*x*	0	0	0	4	0	0	0	0	0	0	0
71	3,500±	175±	0.6	0	0	0	0	164	0	0	0	98	0	0	98
72	*x*	*x*	0	0	0	0	0	12	0	0	0	0	0	0	0
73	3,250±	162±	*y*	0	0	0	0	122	0	0	13	40	0	0	40
74	*x*	*x*	*y*	0	0	0	0	22	0	*x*	*x*	*x*	0	0	*x*
75	1,200±	60±	1±	0	0	0	0	103	0	25	0	60	0	0	60
76	1,100	22	7.0	0	0	0	0	225	0	15	0	57	0	0	57
77	1,328	*y*	0	0	0	0	0	23	0	0	0	0	0	0	0
78	*x*	*x*	0	*x*	0	0	0	20	0	0	0	0	0	0	0
79	35	*x*	0	*x*	0	0	0	35	0	0	0	0	0	0	0
80	4,220		0.87	*x*	*y*	*y*	*y*	20,319	9	106	*y*	14,772	*y*	7±	14,779

TABLE 2.—(*Continued*)

County	Completed Prior to Jan. 1, 1934								Completed during 1933				
	Dry and/or Near-dry Holes								Dry and/or Near-dry Holes				
	Total Depths, Ft.								Total Depths, Ft.				
	Less 1,000	1,000-2,000	2,000-3,000	3,000-4,000	4,000-5,000	5,000-6,000	Unknown	Total	Productive Wells (For Details, See Table 1)	Less 1,000	1,000-2,000	2,000-3,000	Total	Productive Wells (For Details, See Table 1)
Christian	1	6	1	0	0	0	0	8	0	0	0	0	0	0
Clark	332	13	9	1	0	0	507	862	3,330	0	1	0	1	3
Clay	0	3	6	0	0	0	0	9	0	0	0	0	0	0
Clinton	6	83	3	0	0	0	2	94	180	0	0	0	0	0
Coles	20	9	6	0	0	0	4	39	127	1	1	0	2	0
Cook	0	183	34	0	0	0	0	217	0	0	0	0	0	0
Crawford	212	261	3	0	1	0	914	1,391	9,544	0	7	0	7	3
Cumberland	68	8	4	0	0	0	27	107	974	0	0	0	0	0
De Kalb	0	8	1	0	0	0	0	9	0	0	0	0	0	0
De Witt	0	1	0	0	0	0	0	1	0	0	0	0	0	0

TABLE 1.—(*Continued*)

Line Number	Average Depth, Ft.		Oil Production Methods at End of 1933					Pressure, Lb. per Sq. In.[c]			Character of Oil,[f] Approx. Average					Character of Gas Approx. Average during 1933	
			Number of Wells						Average at End of		Gravity A. P. I. at 60° F.						
	Bottoms of Productive Wells	To Top of Productive Zone[c]	Flowing	Pumping	Gas-lift	Air-lift	Injection into Reservoir[d]	Initial	1932	1933	Maximum	Minimum	Weighted Average	Sulfur, Per Cent	Base[f]	B.t.u. per Cu. Ft.	Gal. Gasoline per M. Cu. Ft.
1	215	159	0	12	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*y*			
2			0	382	0	0		200±	*x*	*x*	38.4	28.3	34.0	*y*	M	*x*	*x*
3	376	281	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	30.0	*y*	M	*x*	*x*
4	446	334	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	33.5	*y*	M	*x*	*x*
5	2,568	2,265	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	37.0	*y*	M	*x*	*x*
6			0	919	0	0	A2	*x*	*x*	*x*	36.9	27.4	33.0	*y*	M	*x*	*x*
7	465	367	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(34.0)	*y*	M	*x*	*x*
8	562	478	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(33.6)	*y*	M	*x*	*x*
9	590	556	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(25.7)	*y*	M	*x*	*x*
10	680	588	0	44	0	0		*x*	*x*	*x*	33.9	30.0	(30.3)	*y*	M	*x*	*x*
11			0	512	0	0	[2]	*x*	*x*	*x*	37.2	27.2	29.2	*y*	M	*x*	*x*
12	358	263	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(31.9)	*y*	M	*x*	*x*
13	426	309	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(30.1)	*y*	M	*x*	*x*
14	505	444	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(33.6)	*y*	M	*x*	*x*
15			0	171	0	0	A2	*x*	*x*	*x*	37.5	30.2	36.8	*y*	M	*x*	*x*
16	411	255	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
17	511	449	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
18	506	477	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
19	1,418	1,340	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(38.9)	*y*	M	*x*	*x*
20	1,596	1,553	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
21	2,830	2,708	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(39.6)	*y*	M	*x*	*x*
22			0	430	0	0		*x*	*x*	*x*	36.2	27.7	31.0	*y*	M	*x*	*x*
23	486	416	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
24	451	314	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
25	508	465	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
26	554	534	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
27			0	505	0	0		*x*	*x*	*x*	35.1	28.5	32.2	*y*	M	*x*	*x*
28	549	392	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
29	518	453	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
30	570	489	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
31	618	598	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(28.5)	*y*	M	*x*	*x*
32			0	409	0	0	AG2	*x*	*x*	*x*	35.6	27.3	33.7	*y*	M	*x*	*x*
33	726	561	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(32.4)	*y*	M	*x*	*x*
34	907	817	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	*y*	*y*	*y*	*x*	*x*
35	920	886	0	*y*	0	0		*x*	*x*	*x*	*y*	*y*	(37.0)	*y*	M	*x*	*x*
36			0	3,384	0	0	G1 A7 AG13	*x*	*x*	*x*	39.6	25.8	33.0			*x*	*x*
37			0	5,896	0	0	[3]	425±	*y*	*y*	36.8	25.1	33.0	*x*	M	960	2.5
38	822	508	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*y*	*y*	*y*	*x*	*y*	*x*	*x*
39	960	900	0	*y*	*y*	*x*	[4]	425±	*y*	*y*	36.8	25.1	32.8	*x*	M	960	2.5
40	1,416	1,337	0	108	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
41	975	940	0	203	0	0	G2	*x*	*x*	*x*	35.0	24.3	30.1	*x*	*x*	*x*	*x*
42	1,015	995	0	94	0	0	AG1	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
43	1,025	1,000	0	226	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
44	930	912	0	77	0	0		*x*	*x*	*x*	30.4	22.6	29.5	*x*	*x*	*x*	*x*
45	945	935	0	164	0	0		*x*	*x*	*x*	26.6	20.1	22.5	*x*	*x*	*x*	*x*
46	950	930	0	486	0	0	A7	*x*	*x*	*x*	34.1	26.5	31.3	*x*	*x*	*x*	*x*
47	*x*	*x*	0	6,948	0	0	[5]	425±	*y*	*y*	38.6	19.6	32.5	*x*	M	960	2.5

[2] G1, A3, AG11. G15, A24, AG20, W1. [4] G15, A24, AG20. [5] G17, A31, AG21, W1.

TABLE 1.—(*Continued*)

Line Number	Average Depth, Ft.		Oil Production Methods at End of 1933					Pressure, Lb. per Sq. In.[e]			Character of Oil,[l] Approx. Average					Character of Gas Approx. Average during 1933	
			Number of Wells						Average at End of		Gravity A. P. I. at 60° F.						
	Bottoms of Productive Wells	To Top of Productive Zone	Flowing	Pumping	Gas-lift	Air-lift	Injection into Reservoir[d]	Initial	1932	1933	Maximum	Minimum	Weighted Average	Sulfur Per Cent	Base[l]	B.t.u. per Cu. Ft.	Gal. Gasoline per M. Cu. Ft.
48			0	3,438	0	0	A1	650±	*x*	*x*	39.3	26.7	32.9	*x*	M	*x*	2.4
49	1,000	800	0	*x*	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
50	1,265	1,250	0	*x*	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
51	1,345	1,330	0	*x*	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
52	1,430	1,400	0	*x*	0	0		600	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
53	1,580	1,560	0	*x*	0	0		650	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
54	1,710	1,700	0	*x*	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
55	1,865	1,843	0	45	0	0		600	*x*	*x*	37.3	37.3	37.3	*x*	*x*	*x*	*x*
56				3,483													
57	1,460	1,425	0	355	0	0	G1	*x*	*x*	*x*	35.9	24.1	35.1	*x*	*x*		
58				14,170	0	0	G19 A38 AG34 W1	*x*	*x*	*x*	39.3	20.1	33.1	*y*	M	*y*	2.4
59	468	447	0	343	0	0		*x*	*x*	*x*	*x*	*x*	37.3	*x*	*y*		
60	275	265	0	0	0	0		*x*	*x*	*x*						*x*	*x*
61	330	335	0	0	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*y*	898	0.05
62	398	380	0	0	0	0		135	*x*	*x*	*x*	*x*	±27.7	*x*	*y*	*x*	*x*
63	405	385	0	0	0	0		*y*	*y*	*y*						*y*	*y*
64	670	650	0	4	0	0		*x*	*x*	*x*	*x*	*x*	29.2	*x*	*y*		
65	555	542	0	0	0	0		155	*y*	*y*						788	*y*
66	491	461	0	0	0	0		145	*x*	*x*						*x*	*x*
67	674	664	0	0	0	0		*x*	*x*	*x*	*x*	*x*	21.7	*x*	*y*	*x*	*x*
68	1,400	1,305	0	0	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
69	945	940	0	0	0	0		*x*	*y*	*y*						*x*	*x*
70	993	927	0	0	0	0		*x*	*x*	*x*						*x*	Dry
71	1,055	1,035	0	98	0	0	W3	*x*	*x*	*x*	37.0	34.2	35.2	*x*	*x*		
72	957	950	0	0	0	0		*x*	*x*	*x*	*y*	*y*	31.9	*x*	*x*		
73	1,560	1,540	0	40	0	0		*x*	*x*	*x*	35.1	32.7	34.5	*x*	*x*		
74	1,150	1,130	0	*x*	0	0		*x*	*x*	*x*	35.0	31.0	32.3	*x*	*x*		
75	760	720	0	60	0	0		*x*	*x*	*x*	30.8	29.3	30.2	*x*	P		
76	601	551	0	57	0	0		*x*	*x*	*x*	*y*	*y*	32.7	*x*	*x*		
77	460	410	0	0	0	0		*x*	*x*	*x*	30.1	29.5	30 0	*x*	*x*		
78	857	850	0	0	0	0		*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
79	798	780	0	0	0	0		115	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
80			0	14,772	0	0	G19 A38 AG34 W4										

[d,l] Footnotes to column headings are on page 14. Following are special definitions of *d* and *l* for application to this table.

[d] W, water; G, gas; A, air; AG, air-gas mixture. Numbers in this column indicate numbers of injection wells.

[l] All gravities given (except those in parentheses) were from data for the year 1925 furnished by the Illinois Pipe Line Co. Gravities in parentheses are for particular samples; see Illinois State Geol. Survey Bull. 54 Table 3. The values have been converted from Baumé to A.P.I. gravities.

TABLE 1.—(*Continued*)

Line Number	Producing Rock					Structure[f]	Number of Dry and/or Near-dry Holes to End of 1933	Deepest Zone Tested To End of 1933	
	Name	Age[g]	Character[h]	Porosity[i]	Net Thickness, Average Ft.			Name	Depth of Hole, Ft.
1	Unnamed	Pen	S	Por	x	ML	0	Pen.	715
2	See below					D	99	Trenton (Ord)	2,918
3	Shallow gas sand	Pen	S	Por	36	D			
4	Westfield lime	Mis L	L	Por, Cav	x	D			
5	Trenton	Ord	L	Por	x	D			
6	See below					D	28	Dev. limestone	2,010
7	First Siggins sand	Pen	S	Por	x	D			
8	Second and Third Siggins sand	Pen	S	Por	x	D			
9	Lower Siggins sand	Pen	S	Por	x	D			
10	York sand	Pen	S	Por	x	AM	2		960
11	See below					AM	20	Lower Miss.	808
12	Upper gas sand	Pen	S	Por	x	AM	5		
13	Lower gas sand	Pen	S	Por	x	AM	12		
14	Casey sand	Pen	S	Por	x	AM	20		
15	See below					D	5	Trenton (Ord)	2,830
16	Shallow sands	Pen	S	Por	x	D	1		
17	Casey sand	Pen	S	Por	x	D	5		
18	Martinsville "sand"	Mis L	L	Por	x	D	1		
19	Capper	Mis L	S	Por	x	D	1		
20	"Niagaran"	Dev	L	Por	x	D	3		
21	Trenton	Ord	L	Por	x	D	1		
22	See below					AM	16	Mis	965
23	Claypool sand	Pen	S	Por	x	AM	12		
24	Shallow	Pen	S	Por	x	AM	4		
25	Casey	Pen	S	Por	x	AM	12		
26	Upper Partlow	Pen	S	Por	x	AM	16		
27	See below					AM	29	Mis	1,160
28	Claypool sand	Pen	S	Por	x	AM	3		
29	Casey	Pen	S	Por	x	AM	11		
30	Upper Partlow	Pen	S	Por	x	AM	29		
31	Lower Partlow	Pen	S	Por	x	AM	10		
32	See below					AM	14	Lower Mis	1,471
33	"500-ft sand"	Pen	S	Por	x	AM	14		
34	"800-ft sand"	Pen	S	Por	x	AM	3		
35	"900-ft sand"	Mis U	S	Por	x	AM	12		
36					33±		213		
37	See below						200±	Trenton	4,620
38	Shallow sand	Pen	S	Por	x	ML	x		
39	Robinson sand	Pen	S	Por	25±	ML	167	Trenton	4,620
40	Oblong	Mis	S or L	Por	x	A, ML	23	Miss	1,479
41	Robinson sand	Pen	S	Por	x	ML	5	L. Miss	2,056
42	Robinson sand	Pen	S	Por	x	ML	10	Miss	2,279
43	Robinson sand	Pen	S	Por	x	ML	10	Pen?	1,127
44	Robinson sand	Pen	S	Por	x	ML	6	Pen	1,041
45	Robinson (Flat Rock)	Pen	S	Por	x	ML	8	Pen	1,032
46	Robinson sand	Pen	S	Por	x	ML	12	L. Miss	1,731
47	Robinson—Oblong—Shallow	Pen, Mis	S	Por	25±	ML	251	Trenton	4,620
48	See below					A	83	St. Peter	5,190
49	Bridgeport sand	Pen	S	Por	40	A	19		
50	Buchanan	Mis U	S	Por	15	A	3		
51	"Gas" sand	Mis U	S	Por	15	A	5		
52	Kirkwood	Mis U	S	Por	30	A	10		
53	Tracy	Mis U	S	Por	20	A	11		
54	McClosky	Mis L	L	Por	10	A	23		

TABLE 1.—(*Continued*)

Line Number	Producing Rock: Name	Age[g]	Character[h]	Porosity[i]	Net Thickness, Average Ft.	Structure[j]	Number of Dry and/or Near-dry Holes to End of 1933	Deepest Zone Tested To End of 1933: Name	Depth of Hole, Ft.
55	Kirkwood	Mis U	S	Por	22	ML	0	Miss	1,900
56							83		
57	Biehl sand	Pen	S	Por	35±	AM	43	Miss. (St. Gen.)	2,228
58							590		
59	Hoing sand, Devonian LS	Dev	S, H, LS	Por	21	A	0	Trenton (Ord)	805
60	Niagaran	Sil	L	Por	10	A	0	St. Peter	893
61	Gas sand	Pen, Mis	S, H, SL	Por	5	ML	8	Trenton	1,390
62	Unnamed	Pen	S	Por	*x*	A	0	Pen	410
63	Unnamed	Pen	S	Por	*x*	D	1	Pen	495
64	Unnamed	Pen	S	Por	*x*	T	9	Trenton	2,560
65	Unnamed	Pen	S	Por	*x*	A	0	Pen	575
66	Unnamed	Pen	S	Por	*x*	A	0	Trenton	2,371
67	Unnamed	Pen	S	Por	*x*	D	0	Pen	681
68	Trenton	Ord	L	Por	20	ML	0	Trenton	1,500
69	Unnamed	Mis U	S	Por	5	A	0	L. Mis	1,150
70	Lindley	Mis U	S	Por	66	A	0	Mis	1,065
71	Carlyle	Mis U	S	Por	20	A	17	Sil	2,620
72	Carlyle	Mis U	S	Por	7	D	0	Carlyle *y*	962±
73	Benoist	Mis U	S	Por	20±	D	7	Mis	1,732
74	Dykstra, Wilson, Benoist	Pen, Mis U	S	Por	20	D, ML	6	L. Mis	1,779
75	Petro	Pen	S	Por	20	D	0	Benoist	1,484
76	Trenton	Ord	L	Por, Cav	50	A	0	Trenton	819
77	Trenton	Ord	L	Por	50	A	19	Trenton	845
78	Sparta gas sand	Mis U	S	Por	7	D	4	U. Mis	985
79	Unnamed	Mis U	S	Por	18	A	*y*	Dev	2,530
80							661±		

TABLE 2.—(*Continued*)

County	Completed Prior to Jan. 1, 1934: Dry and/or Near-dry Holes: Total Depths, Ft.: Less 1,000	1,000–2,000	2,000–3,000	3,000–4,000	4,000–5,000	5,000–6,000	Unknown	Total	Productive Wells (For Details, See Table 1)	Completed during 1933: Dry and/or Near-dry Holes: Total Depths, Ft.: Less 1,000	1,000–2,000	2,000–3,000	Total	Productive Wells (For Details, See Table 1)
Douglas	11	7	1	0	0	0	0	19	0	0	0	0	0	0
Du Page	0	7	14	0	0	0	0	21	0	0	0	0	0	0
Edgar	8	6	4	0	0	0	0	18	22	0	0	0	0	0
Edwards	0	7	3	0	0	0	0	10	0	0	0	0	0	0
Effingham	1	5	1	0	0	0	0	7	0	0	0	0	0	0
Fayette	0	8	3	0	0	0	0	11	0	0	0	0	0	0
Franklin	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Fulton	2	11	3	0	0	0	0	16	0	0	0	0	0	0
Gallitin	1	14	1	2	0	0	0	18	0	0	0	0	0	0
Greene	0	5	0	0	0	0	0	5	0	0	0	0	0	0
Grundy	0	4	1	0	0	0	0	5	0	0	0	0	0	0
Hamilton	0	2	1	0	0	0	0	3	0	0	0	0	0	0
Hancock	0	3	0	0	0	0	0	3	17	1	0	0	1	0
Hardin	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Henderson	0	2	0	0	0	0	0	2	0	0	0	0	0	0
Henry	2	17	3	0	0	0	0	22	0	0	0	0	0	0

TABLE 2.—(*Continued*)

County	Completed Prior to Jan. 1, 1934									Completed during 1933				
	Dry and/or Near-dry Holes								Productive Wells (For Details, See Table 1)	Dry and/or Near-dry Holes				Productive Wells (For Details, See Table 1)
	Total Depths, Ft.									Total Depths, Ft.				
	Less 1,000	1,000–2,000	2,000–3,000	3,000–4,000	4,000–5,000	5,000–6,000	Unknown	Total		Less 1,000	1,000–2,000	2,000–3,000	Total	
Iroquois	2	4	0	0	0	0	0	6	0	0	0	0	0	0
Jackson	22	32	2	0	0	0	0	56	35	0	0	0	0	0
Jasper	4	11	2	0	0	0	0	17	17	0	0	0	0	0
Jefferson	0	7	5	0	0	0	0	12	0	0	0	0	0	0
Jersey	0	2	0	0	0	0	0	2	0	0	0	0	0	0
Jo Daviess	0	2	0	0	0	0	0	2	0	0	0	0	0	0
Johnson	0	3	2	0	0	0	0	5	0	0	0	0	0	0
Kane	0	10	11	0	0	0	0	21	0	0	0	0	0	0
Kankakee	1	4	0	0	0	1	0	6	0	0	0	0	0	0
Kendall	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Knox	1	10	3	0	0	0	0	14	0	0	0	0	0	0
Lake	0	27	7	0	0	0	0	34	0	0	0	0	0	0
La Salle	0	19	7	0	0	0	0	26	0	0	0	0	0	0
Lawrence	83	301	69	0	0	1	56	510	4,519	0	0	0	0	1
Lee	0	9	1	0	0	0	0	10	0	0	0	0	0	0
Livingston	0	10	3	0	0	0	0	13	0	0	0	0	0	0
McDonough	0	5	1	0	0	0	0	6	433	0	0	0	0	0
McHenry	0	3	3	0	0	0	0	6	0	0	0	0	0	0
McLean	0	3	2	0	0	0	0	5	0	0	0	0	0	0
Macon	0	6	7	0	0	0	0	13	0	0	0	0	0	0
Macoupin	24	0	4	0	0	0	0	28	48	0	0	0	0	0
Madison	2	13	0	4	0	0	0	19	5	0	0	0	0	0
Marion	3	28	4	0	0	0	0	35	240	1	0	0	1	0
Marshall	0	2	0	0	0	0	0	2	0	0	0	0	0	0
Mason	0	2	0	0	10	0	0	2	0	0	0	0	0	0
Mercer	0	4	0	2	0	0	0	6	0	1	0	0	1	0
Monroe	19	2	1	0	0	0	0	22	23	0	0	0	0	0
Montgomery	5	7	2	1	0	0	0	15	17	0	0	0	0	0
Morgan	21	6	0	1	0	0	0	28	53	1	0	0	1	3
Moultrie	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Ogle	0	4	2	0	0	0	0	6	0	0	0	0	0	0
Peoria	0	8	0	0	0	0	0	8	0	0	0	0	0	0
Perry	0	20	0	2	0	0	0	22	0	0	0	0	0	0
Piatt	0	4	1	0	0	0	0	5	0	0	0	0	0	0
Pike	12	0	0	0	0	0	0	12	68	0	0	0	0	0
Pope	1	2	0	2	0	0	0	5	0	0	0	0	0	0
Pulaski	0	2	1	0	0	0	0	3	0	0	0	0	0	0
Putnam	0	4	0	0	0	0	0	4	0	0	0	0	0	0
Randolph	10	12	0	0	0	0	0	22	20	0	0	0	0	0
Richland	4	2	0	0	0	0	0	6	0	0	0	1	1	0
Rock Island	1	10	4	0	0	0	0	15	0	0	0	1	1	0
St. Clair	15	3	0	0	0	0	0	18	225	0	0	0	0	0
Saline	0	19	6	1	0	0	0	26	0	0	0	0	0	0
Sangamon	1	2	2	0	0	0	0	5	0	2	0	0	2	0
Schuyler	23	10	0	0	0	0	0	33	0	0	1	0	1	0
Scott	2	1	0	0	0	0	0	3	0	0	0	0	0	0
Shelby	0	11	0	0	0	0	0	11	0	0	1	0	1	0
Stark	0	0	2	0	0	0	0	2	0	0	0	0	0	0
Stephenson	0	2	0	0	0	0	0	2	0	0	0	0	0	0
Tazewell	0	2	2	0	0	0	0	4	0	0	0	0	0	0
Union	0	3	4	0	0	0	0	7	0	0	0	0	0	0
Vermilion	2	10	0	0	0	0	0	12	0	0	0	0	0	0
Wabash	2	167	10	0	0	0	145	324	405	0	0	1	1	0
Warren	0	2	2	0	0	0	0	4	0	0	0	0	0	0
Washington	4	14	0	0	0	0	0	18	3	0	0	0	0	0
Wayne	0	5	0	0	0	0	0	5	0	0	0	0	0	0
White	0	4	2	0	0	0	0	6	0	0	0	0	0	0
Whiteside	0	6	0	0	0	0	0	6	0	0	0	0	0	0
Will	0	32	0	0	0	0	0	32	0	1	1	0	2	0
Williamson	0	6	0	0	0	0	0	6	0	0	0	0	0	0
Winnebago	0	15	1	0	0	0	0	16	0	0	0	0	0	0
Woodford	0	3	2	0	0	0	0	5	0	0	0	0	0	0
Total	941	1,658	294	16	1	2	1,655	4,567	20,319	9	15	3	26	10

TABLE 3.—*Production of Crude Oil in Illinois in* 1933 *by Months*[a]
Thousands of Barrels

	Total	Per Day
January	297	10
February	263	9
March	314	11
April	284	9
May	313	11
June	357	12
July	404	14
August	411	14
September	412	14
October	406	14
November	388	13
December	378	13
Total	4227	11.6
Year 1932	4673	12.8

[a] U. S. Bureau of Mines.

The number of natural gasoline plants operating in Illinois was 79 on Jan. 1, 1932, all being of the compression type. (U. S. Bureau of Mines *Inf. Circ.* 6635.) A number of these plants are now shut down or converted into repressuring plants. Approximately 45 are now in operation to produce natural gasoline.

The oil and gas pools of Illinois are listed in Table 1 in geographical order from north to south, except that the southeastern Illinois field is separated from the remainder of the state and appears first.

Chapter IV. Production

Introduction

By Frank A. Herald,* Fort Worth, Texas

Through the generous cooperation of the authors of the papers in this chapter, a great wealth of fundamental data is being made available. The same plan of securing and submitting data will be carried forward next year, with the hope of making a nearer approach to complete presentation of the data contemplated in the plan.

In order to conserve space, we are printing below such footnotes as have general application to Table 1 in the papers in this chapter:

Footnotes to Column Headings

Table I

[a] In areas where both oil and gas are produced, unless gas is marketed outside the field, such areas are included in column headed "Oil." Manufacture of casinghead gasoline and carbon black is interpreted as outside marketing of gas.

[b] Production per acre is determined by dividing into the number of barrels of oil the sum of the number of acres assigned to "Oil" plus such number of acres of the total assigned to "Oil and gas" as represents the portion thereof occupied by oil.

[c] Wells producing both oil and gas are classified as "Producing oil only" unless gas from them is marketed off the lease.

[d] W, water; G, gas; A, air.

[e] Bottom-hole pressures are preceded by "e." All other figures represent pressures at casinghead with well closed.

[f] P, paraffin; A, asphalt; M, mixed.

[g] Cam, Cambrian; Ord, Ordovician; Sil, Silurian; Dev, Devonian; Mis, Mississippian; MisL, Lower Mississippian; MisU, Upper Mississippian; Pen, Pennsylvanian; Per, Permian; Tri, Triassic; Jur, Jurassic; CreL, Lower Cretaceous; CreU, Upper Cretaceous; Eoc, Eocene; Olig, Oligocene; Mio, Miocene; Pli, Pliocene.

[h] S, sandstone; SH, sandstone, shaly; Ss, soft sand; H, shale; L, limestone; LS, limestone, sandy; C, chalk; A, anhydrite; D, dolomite; Da, arkosic dolomite; GW, granite wash; P, serpentine.

[i] Figures are entered only for fields where the reservoir rock is of pore type. Figures represent ratio of pore space to total volume of net reservoir rock expressed in per cent. "Por" indicates that the reservoir rock is of pore type but said ratio is not known by the author. "Cav" indicates that the reservoir rock is of cavernous type; "Fis," fissure type.

[j] A, anticline; AF, anticline with faulting as important feature; Af, anticline with faulting as minor feature; AM, accumulation due to both anticlinal and monoclinal structure; H, strata are horizontal or near horizontal; MF, monocline-fault; MU, monocline-unconformity; ML, monocline-lens; MC, monocline with accumulation due to change in character of stratum; MI, monocline with accumulation against igneous barrier; MUP, monocline with accumulation due to sealing at outcrop by asphalt; D, dome; Ds, salt dome; T, terrace; TF, terrace with faulting as important feature; N, nose; S, syncline.

[k] Information will be found in text as indicated by symbols; A, name of author, other than above, who has compiled the data on the particular field; C, chemical treatment of wells; G, gas-oil ratios; P, proration; U, unit operation; R, references; W, water; O, other information.

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* Consulting Petroleum Geologist and Engineer; Vice-chairman for Production, A. I. M. E. Petroleum Division, 1933 and 1934.

Interpretations

The following paragraphs from my Circular to Authors, dated July 7, 1933, will facilitate a proper interpretation of the data presented by the various authors.

As to each space in the tabulation, it is either (1) not applicable, (2) the proper entry is not determinable, (3) the proper entry is determinable, but not determinable from data available to the author, (4) the proper entry is determinable by the author. In spaces not applicable, the author will please draw horizontal lines; in spaces where the proper entries are not determinable, the author will please insert *x*; in spaces where the proper entries are determinable but not determinable from data available to the author, the author will please insert *y*; in spaces where the proper entries are determinable by the author he will, of course, make such entries. Generally, *y* implies a hope that in some future year a definite figure will be available.

Inability to determine precisely the correct entry for a particular space should not lead the author to insert merely *y*. Contributions of great value may be made by the author in many cases where entries are not subject to precise determination. In such cases the author should use his good judgment and make the best entry possible under the circumstances. For many spaces, the correct entries represent the opinion of the author (for example, "Area Proved") and in such cases the entries need not be hedged to such extent as in cases where the quantities are definite yet can be ascertained only approximately by the author.

In cases under definite headings but where figures are only approximate, the author may use *x*. For example, if the total production of a field is known to be between 1,800,000 and 1,850,000, the author may report 1,8*xx*,*xxx*; or if the production is between 1,850,000 and 1,900,000, the author may report 1,9*xx*,*xxx*.

Where a numeral is immediately to the left of *x* or *y*, such numeral represents the nearest known number in that position.

As to quantity of gas produced from many fields the question will arise as to whether the figures should include merely the gas marketed or should include also estimates of gas used in operations and gas wasted. Although rough approximations may be involved, our figures should represent as nearly as possible the total quantity of gas removed from the reservoir.

While we have not provided a column for showing the thickness of the productive zone, generally the difference between average depth to bottoms of productive wells and average depth to top of productive zone will represent approximately the average thickness of the productive zone. For fields where this is not true because of unusually high dips, or for other reasons, it is suggested that the authors indicate in their texts the approximate average thickness of the productive zone.

The figure representing net thickness of producing rock should correspond to the total of the net portions of the producing zone which actually yield oil into the drill hole. It is recognized that for some fields the authors can make only rough guesses—so rough that figures would be of no value. In such cases the authors should enter either *x* or *y*, whichever is more appropriate. Production per acre-foot will have to be treated, of course, in the same manner for the corresponding fields.

Please note that the heading "Number of Dry and/or Near-dry Holes" is intended to cover only such holes as are within the limits of the defined fields. The holes entered here will be distributed in Table 2 by counties and by depths.