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DEVELOPMENTS IN ILLINOIS AND INDIANA IN 1953

BY

ALFRED H. BELL AND T. A. DAWSON

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DEVELOPMENTS IN ILLINOIS AND INDIANA IN 1953[1]

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Urbana, Illinois, and Bloomington, Indiana

ABSTRACT

In Illinois and Indiana, 3,473 wells were drilled for oil and gas in 1953, as compared with 3,357 in 1952, an increase of 3 per cent. Total oil production decreased ½ of 1 per cent, from 72,008,000 barrels in 1952 to 71,606,000 barrels in 1953. Exploratory drilling decreased from 1,181 completions in 1952 to 949 in 1953. Forty-nine new pools, 63 extensions, and 20 new producing zones were discovered in the two states in 1953.

As in previous years, most of the discoveries in 1953 were in Mississippian formations. Six new pools produced from Pennsylvanian sandstones, 3 from Devonian or Silurian limestones, and 1 from Ordovician limestone.

INTRODUCTION

In Illinois and Indiana, 3,473 wells were drilled for oil and gas in 1953, as compared with 3,357 in 1952, an increase of 3 per cent. Total oil production decreased ½ of 1 per cent, from 72,008,000 barrels in 1952 to 71,606,000 barrels in 1953. Exploratory drilling decreased from 1,181 completions in 1952 to 949 in 1953. Forty-nine new pools, 63 extensions, and 20 new producing zones were discovered in the two states in 1953.

In the Illinois basin area (southern Illinois and southwestern Indiana) 39 out of 49 discovery wells of new pools produced from Mississippian formations (30 in the Chester series and 9 in the Lower Mississippian). Of the other 10 discovery wells of new pools, 6 produced from Pennsylvanian sandstone, 3 from Devonian or Silurian limestone, and 1 from Ordovician limestone.

ILLINOIS

By Alfred H. Bell

In Illinois 2,161 wells were drilled for oil and gas in 1953 as compared with 2,077 in 1952, an increase of 4 per cent. (These figures are exclusive of water- or gas-input wells, salt-water disposal wells, and old wells worked over.) This drilling resulted in 1,068 oil wells, 5 gas wells, and 1,088 dry holes.

Of the 2,161 wells drilled, 533 were wildcats, as compared with 663 in 1952, showing a decrease of 20 per cent in 1953. Of the wildcat wells in 1953, 169 were drilled more than 2 miles from production ("wildcats far"), of which 11, or 6.5 per cent, were successful. In 1952, 3.1 per cent were successful.

An effective new method of completing wells by hydraulic fracturing came into wide use in Illinois in 1953, when 54 per cent of all completed wells were reported to be so treated. To it is attributable, at least in part, the significant increase—from 3.1 per cent in 1952 to 6.5 per cent in 1953—of successful wildcat wells more than 2 miles from production and the rise in producers—from 39.5

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TABLE I. DISCOVERY WELLS OF NEW POOLS IN ILLINOIS IN 1953

Pool	*County*	*Company and Farm*	*Location*	*Total Depth (Feet)*	*Producing Formation*	*Depth to Top (Feet)*	*Initial Production (Bbl.)*[a]	*Date of Completion*	*No. Wells Producing in Pool Dec. 31, 1953*
1. Albion West	Edwards	W. H. Sloan 1 P. Hortin	10-3S-10E	3,420	McClosky	3,373	27;17	7-14	0
2. Amity South	Richland	Ervin Drlg. 1 E. Ernst	23-4N-14W	3,010	Rosiclare	2,889	30	8-18	0
3. Amity West	Richland	Illinois-Midcontinent 1 Vail Hrs.	22-4N-14W	3,100	Aux Vases	2,924	13; 20	8-11	1
4. Ashley	Washington	Ohio Oil 1 F. Sawyer	33-2S-1W	3,116; PB 1,440	Bethel	1,429	15; 7	9-22	2
5. Blackland	Macon	Sun Oil 1 J. F. Damery	5-15N-1E	3,780; PB 1,945	Silurian	1,912	10	7-7	1
6. Calhoun South	Wayne	Collins Bros. 1 Patton Est.	36-2N-9E	3,350; PB 3,195	Aux Vases	3,130	50; 20	9-22	1
7. Decatur	Macon	Harmon Oil 1 Trump	5-16N-2E	2,052	Dev.-Sil.	2,010	13; 12	9-8	1
8. Dudley West	Edgar	E. Zink 1 Lauher	7-13N-13W	428	Pennsylvanian	380	1,000,000 cu. ft.	8-25	1
9. Eldorado East	Saline	G. L. Reasor 1 J. H. Porter	23-8S-7E	2,915	Aux Vases	2,910	250	5-5	3
10. Elliottstown North	Effingham	T. Lindsay 1 Niemerg-Roepke Comm.	20-7N-7E	2,442	Cypress	2,432	21; 28	2-24	2
11. Huey South	Clinton	Shulman 3 Farrell	6-1N-2W	1,098	Cypress	1,092	9; 40	11-3	2
12. Irvington North	Washington	D. Hopkins 1 J. Nolting	34-1N-1W	1,485	Bethel	1,482	51	6-16	13
13. Junction East	Gallatin	McBride & Miller 1 Crane	1-9S-9E	2,890; PB 2,013	Waltersburg	2,000	34; 4	9-29	2
14. Kinmundy North	Marion	Texas 1 C. F. Garrett	10-4N-3E	2,295; PB 2,065	Bethel	2,036	10;18	6-23	1
15. Locust Grove South	Wayne	Slagter 1 I. F. Allen	8-1S-9E	3,394	Rosiclare	3,296	71	12-15	1
16. Louisville North	Clay	A. A. Richey 1 M. Green	11-4N-6E	2,977	Aux Vases	2,759	105; 50	10-27	1
17. Melrose	Clark	B. & G. Oil 1 O. Wells	13-9N-13W	867	Pennsylvanian	839	10; 1	2-17	1
18. Melrose South	Clark	Lewis & Dewey 1 H. Atkins	25-9N-13W	880	Pennsylvanian	865	5; 2	9-29	1
19. Mills Prairie North	Edwards	Paco Pet. 1 F. Knakmuhs	15-1N-14W	3,003	Lower Ohara	2,925	140	2-10	2
20. North City	Franklin	Nat'l. Assoc. Pet. 1 Epperson "D"	14-6S-1E	2,885; PB 2,725	Aux Vases	2,665	42; 24	12-8	1
21. Patoka South	Marion	C. R. Winn 1 O. G. Singer	4-3N-1E	1,355	Cypress	1,349	50	10-6	12
22. Posen North	Washington	E. A. Obering 1 Liszewski	9-3S-2W	4,112; PB 4,051	Trenton	4,016	4; 4	10-27	1
23. Prentice	Morgan	E. L. Wirth 1 T. A. Leahy	21-16N-8W	289	Pennsylvanian	247	6	12-8	2
24. Raleigh	Saline	George & Wrather 1 W. H. Lemons	2-8S-6E	3,101; PB 2,912	Cypress Aux Vases	2,552 2,907	42; 20	6-23	7
25. Toliver South	Clay	C. O. Smith 1 P. McCullum	1-4N-6E	2,880	Aux Vases	2,766	56; 100	12-8	1
26. Trumbull West	White	W. C. McBride 1 Jacobs	24-5S-8E	3,140	Aux Vases	3,122	35; 18	12-15	1
27. Wakefield North	Jasper	A. J. Slagter 1 C. Wilson	5-5N-9E	3,122	McClosky	3,107	283	6-9	1

[a] Oil and Water.

TABLE II. DISCOVERY WELLS OF EXTENSIONS TO POOLS IN ILLINOIS IN 1953

Pool	County	Company and Farm	Location	Total Depth (Feet)	Producing Formation	Depth to Top (Feet)	Initial Production (Bbls.)[a]	Date of Completion
1. Ab Lake West	Gallatin	Lewis & Clemens 1 M. Abell	30-8S-10E	2,945; PB 2,770	Aux Vases	2,748	65; 5	7-21
2. Albion Consol.	Edwards	N. V. Duncan 1 Maxwell-Mosbarger Comm.	15-3S-10E	3,226; PB 3,052	Bethel	3,012	120	2-17
3. Allendale	Lawrence	C. W. & J. E. Kendall 1 R. Ridgely	24-2N-12W	1,538	Tar Springs	1,537	2; 20	8-18
4. Assumption Consol.	Christian	Collins Bros. 1 E. Arthur	34-14N-1E	2,300	Devonian	2,283	14; 30	8-4
5. Assumption Consol.	Christian	Bertram & Szepelak 1 Rhoads	35-14N-1E	2,410; PB 2,352	Devonian	2,305	17; 20	12-8
6. Beaver Creek South	Clinton	B. W. Hess 1-A McQuade Comm.	10-3N-3W	1,083	Bethel	1,080	12; 3	6-9
7. Bungay Consol.	Hamilton	E. J. Cunningham 1 S. L. Moore	10-4S-7E	3,454; PB 3,348	Lower Ohara	3,336	40; 30	11-10
8. Cantrell Consol.	Hamilton	W. J. McGlasson 1 R. Johnson	8-7S-5E	3,337; PB 3,210	Aux Vases	3,190	101; 8	11-3
9. Cantrell Consol.	Hamilton	C. E. Brehm 1 W. Mace *et al.*	9-7S-5E	3,353	Aux Vases	3,330	178	8-4
10. Clay City Consol.	Clay	Nation Oil 1 H. Blair	17-3N-8E	3,080; PB 2,938	Aux Vases	2,926	15; 20	4-7
11. Clay City Consol.	Jasper	Cullum & Lawhead 1 B. Mattingly	31-6N-10E	2,968; PB 2,792	Aux Vases	2,765	35; 16	6-9
12. Clay City Consol.	Richland	Calvert Drlg. 1 A. Fulk	32-3N-9E	3,102; PB 3,035	McClosky	3,011	44; 3	1-20
13. Clay City Consol.	Wayne	W. Misener 1 Riley	26-1S-7E	3,401; PB 3,235	Aux Vases	3,210	35; 10	12-15
14. Clay City Consol.	Wayne	W. Misener 1 J. M. Taylor	12-1N-8E	3,185	Lower Ohara	3,126	125	1-6
15. Clay City Consol.	Wayne	P. Fulk 1 J. E. Liston	15-1S-7E	3,296; PB 3,160	Aux Vases	3,143	74; 10	5-5
16. Clay City West	Clay	J. W. Steele 1 B. Leonard	15-2N-7E	3,085	McClosky	3,079	71; 14	7-7
17. Concord South Consol.	White	Felmont 1 W. M. Ford *et al.*	9-7S-10E	3,056; PB 2,961	McClosky	2,950	5; 20	7-14
18. Dale Consol.	Hamilton	J. T. Turner 1 Johns	2-7S-5E	3,240	Aux Vases	3,230	35; 123	7-7
19. Dale Consol.	Hamilton	Calvert Drlg. 1 Williams-Davis Comm.	2-7S-5E	3,225	Aux Vases	3,210	125	9-1
20. Divide West	Jefferson	J. F. Dunnill 1 Tate-McDaniel Comm.	27-1S-3E	2,822	McClosky	2,789	111	7-21
21. Eldorado	Saline	H. E. Howard 1 C. Crawford	8-8S-7E	3,022; PB 2,948	Hardinsburg	2,361	226; 30	7-21
					Aux Vases	2,927		
22. Epworth Consol.	White	Herndon Drlg. 1 T. S. Land	25-5S-9E	3,115	Rosiclare	3,109	45	6-30
23. Evers	Effingham	Wm. D. Griffin 1 Hoelscher	33-8N-7E	2,670	Rosiclare	2,607	115; 15	12-15
24. Flannigan	Hamilton	Stewart 1 Culpepper	29-6S-5E	3,278	Aux Vases	3,254	20; 19	6-23
25. Flora	Clay	W. H. Krohn 1 Chamhliss	19-3N-7E	2,987	McClosky	2,981	128	11-10
26. Goldengate Consol.	Wayne	Nash Redwine 1 J. Felix	6-3S-9E	3,484; PB 3,382	Aux Vases	3,352	66; 40	5-19
27. Herald Consol.	White	C. E. Brehm 2 Bayley	16-7S-9E	2,906; PB 2,660	Cypress	2,606	144	1-27
28. Herald Consol.	White	E. J. Cunningham 1 L. Downen	5-7S-9E	3,197; PB 2,905	Bethel	2,894	68	1-20
29. Inman East Consol.	Gallatin	Coy Oil 1 M. S. Wiggers	33-7S-10E	2,920; PB 2,795	Aux Vases	2,775	16; 10	12-1
30. Iron Consol.	White	Calvert Drlg. 1 G. W. Mohley Comm.	25-6S-8E	3,111; PB 2,804	Tar Springs	2,332	70; 137	5-12
					Bethel	2,784		
31. Johnsonville Consol.	Wayne	Miami Oper. 1 B. Butcher	20-1S-6E	3,163	McClosky	3,154	98	6-23
32. Lawrence West	Lawrence	Big Four Oil 1 E. Staats	13-3N-13W	2,229; PB 2,120	Aux Vases	2,107	160	4-14
33. Maple Grove Consol.	Edwards	W. H. Bears 1 Bennett-Weber Comm	29-1N-10E	3,196	Aux Vases	3,181	64; 20	9-1
34. Maple Grove Consol.	Wayne	Boling *et al.* 1-A P. Weber	24-1N-9E	3,175	Aux Vases	3,146	80; 75	7-7
35. Maple Grove Consol.	Wayne	Don Slape 1 A. Eichmann	22-1N-9E	3,419; PB 3,220	Aux Vases	3,206	6; 80	7-7
36. Omaha South	Gallatin	D. Rotstein 1 C. Woolard	7-8S-8E	3,008; PB 2,960	Cypress	2,537	30; 100	2-3
37. Oskaloosa South	Clay	N. V. Duncan 1 R. Wyman *et al.*	8-3N-5E	2,773	McClosky	2,770	47	6-2
38. Parkersburg Consol.	Edwards	Calvert Drlg. 1 N. Johnson	1-1N-10E	3,354; PB 3,287	McClosky	3,251	71; 17	11-10
39. Prentice	Morgan	E. L. Wirth 1 Robinson	28-16N-8W	258	Pennsylvanian	255	1,048,000 cu. ft.	12-8
40. Raleigh	Saline	Brewer *et al.* 1 J. H. Massey	35-7S-6E	3,128; PB 2,610	Cypress	2,595	6; 10	10-6
41. Rural Hill West	Hamilton	C. E. Brehm 1 McFarland	4-7S-5E	3,220	Aux Vases	3,206	120; 40	9-15
42. Sailor Springs Consol.	Clay	Magnolia 1 H. G. King	22-3N-7E	2,981	Rosiclare	2,969	66	9-15
43. Sailor Springs Consol.	Clay	Shulman Bros. 1 S. Ross	28-3N-7E	2,993	Rosiclare	2,986	75	7-7
44. Sailor Springs Consol.	Clay	Calvert Drlg. 1 F. Berthold	18-5N-7E	2,932; PB 2,889	McClosky	2,812	10; 240	7-21
45. Sesser	Franklin	Artnell 1 Phillips "B"	16-5S-2E	2,863	Rosiclare	2,810	42	12-22
46. Storms Consol.	White	Calvert Drlg. 1 J. A. Bachman	1-6S-9E	3,257	McClosky	3,111	20; 30	1-13
47. Warrenton-Borten	Edgar	C. Watters 2 Jared	19-14N-13W	330	Pennsylvanian	250	5; 8	12-22

[a] Oil and water.

per cent in 1952 to 49.5 per cent in 1953—of total completions. Fracture treatment has resulted in commercial production from wells which could not otherwise have been operated profitably. However, the process is not always commercially successful; there are instances where there is not enough increased productivity to offset the cost of the treatment.

So far, the formation which seems to have responded best to fracture treatment is the Aux Vases sandstone, which is characteristically fine-grained and of low permeability. There were many completions of fracture-treated wells in the Aux Vases formation in a part of the Clay City Consolidated field east and northeast of Fairfield.

Of the 533 wildcat wells drilled, 23 discovered new pools, and 40 discovered extensions to pools (Tables I and II). Four new pools and 7 extensions were discovered by old wells worked over. In addition, 13 wells, most of which can not properly be classified as exploratory wells, discovered additional producing zones in known producing areas (Table III).

Most of the drilling for oil and gas in Illinois in 1953, as in previous years, was in the structural basin of southern Illinois. Wells were drilled in 47 of the state's 102 counties, and producing wells were drilled in 31 counties. More than half the wells completed in 1953 were concentrated in 6 counties: Wayne, 383; White, 247; Marion, 120; Clay, 119; Edwards, 119; and Wabash, 115. More producing wells were completed in Wayne County than total completions, including dry holes, in any other county.

There were no major pools among the 27 discovered in Illinois in 1953 (Table I). The largest pools were Irvington North, Washington County, with 13 wells at the end of the year, Patoka South, Marion County, with 12 wells at the end of the year, and Raleigh, Saline County, with 7 wells at the end of the year. Two pools were abandoned before the end of the year. The others had only from 1 to 3 wells each. Total number of wells in all the new pools was 62 on December 31, 1953.

Total oil production in Illinois in 1953 was 59,025,000 barrels as compared with 60,071,000 barrels in 1952, a decrease of 1.7 per cent. Average daily production was 162,000 barrels in 1953 as compared with 164,000 barrels in 1952.

EXPLORATORY DRILLING

Exploratory wells were drilled in 47 counties in Illinois in 1953 and new pools were discovered in 17 counties. All but 2 of the 47 counties in which exploratory wells were drilled are in the southern two-thirds of the state. Most of the new pools discovered in 1953 are within 2 or 3 miles of previous production. Exceptions are Decatur, Macon County (Table I, No. 7), 9 miles from previous production, Blackland, Macon County (Table I, No. 5), 9 miles from previous production, Prentice, Morgan County (Table I, No. 23), 4 miles from previous production, and Melrose, Clark County (Table I, No. 17), 6 miles from previous production.

Four new pools in Illinois produce from Pennsylvanian sandstones: Dudley

TABLE III. DISCOVERY WELLS OF ADDITIONAL PRODUCING ZONES IN POOLS IN ILLINOIS IN 1953

Pool	County	Company and Farm	Location	Total Depth (Feet)	Producing Formation	Depth to Top (Feet)	Initial Production (Bbl.)[a]	Date of Completion
1. Centerville	White	Q. B. Mitchell 1 Williams Hrs.	1-4S-9E	3,410; PB 3,355	Aux Vases	3,240	56[b]	9-8
2. Dix	Marion	Ashland 1 G. W. Hiltibidal "A"	28-1N-2E	2,140	McClosky	2,132	50; 60[c]	8-18
3. Eldorado	Saline	H. E. Howard 1 C. Crawford	8-8S-7E	3,022; PB 2,948	Hardinsburg	2,361	226; 30[c]	7-21
4. Ellery East	Edwards	Herndon Drlg. 1 Cowling Comm.	34-2S-10E	3,277	Aux Vases	3,205	102; 10	2-24
5. Lawrence West	Lawrence	Big Four Oil 1 E. Staats	13-3N-13W	2,229; PB 2,120	Aux Vases	2,107	160	4-14
6. Lawrence West	Lawrence	N. V. Duncan 1 Pepple	13-3N-13W	2,235	McClosky	2,221	90	4-14
7. Lexington	Wabash	A. Morris 1 Tanquary Bros.	26-1S-14W	2,595	Cypress	2,585	71	6-23
8. Merriam*	Wayne	Cullum & Lawhead 1 Hoffee	3-2S-8E	3,390; PB 3,203	Aux Vases	3,021	45; 45	4-7
9. New Harmony Consol.	White	Superior C-8 H. C. Ford	27-4S-14W	3,794	St. Louis	3,146	75[c]	2-10
10. Omaha South	Gallatin	D. Rotstein 1 C. Woolard	7-8S-8E	3,008; PB 2,690	Cypress	2,537	30; 100	2-3
11. Patoka East	Marion	J. L. Lester *et al.* 1 S. A. Clark "D"	34-4N-1E	3,078; PB 1,688	McClosky	1,639	18	2-24
12. Sesser	Franklin	Artnell 2 Phillips "B"	16-5S-2E	2,461	Cypress	2,456	28; 6	12-15
13. Weaver	Clark	W. W. Dayton 3 Cole	19-11N-10W	2,089; PB 1,620	Cole	1,564	20	11-24

[a] Oil and water.
[b] Producing from 3 pays.
[c] Producing from 2 pays.
* Now in Clay City Consol.

TABLE IV. SELECTED LIST OF DRY TESTS IN ILLINOIS IN 1953

Pool	County	Company and Farm	Location	Total Depth (Feet)	Deepest Formation	Depth to Top (Feet)	Date of Completion
1. Ayers	Bond	W. Duncan 1 L. B. Turner Comm.	20-6N-3W	2,325	Silurian	2,214	6-9
2.	Brown	Chas. Measley 1 F. H. Manny	19-1S-4W	968	Trenton	886	5-12
3.	Champaign	Chas. Bates 1 Cole	36-18N-8E	2,800	Shakopee	2,295	12-1
4. Clay City West	Clay	J. W. Steele 1 R. Leak	15-2N-7E	4,973	Devonian	4,738	10-20
5. Iola Consol.	Clay	P. D. Lynch 2 Wade	3-5N-5E	4,078	Devonian	4,002	2-3
6. Flat Rock	Crawford	R. M. Kintop 1 Butcher	25-6N-12W	3,107	Devonian	2,977	8-25
7. Bellair	Crawford	L. Harris 2 H. Short	13-8N-14W	2,686	Devonian	2,539	6-9
8.	Dewitt	R. J. Steven 1 Davenport-Jasper Comm.	12-19N-2E	1,628	Niagaran	1,210	10-20
9. Dudley	Edgar	M. L. Livingood 3 R. A. Stoneburner	3-13N-13W	1,348	Devonian	1,313	4-21
10.	Hardin	St. Joseph Lead Co. 1 H. Hamp, Jr.	30-11S-8E	2,948	Everton	1,991	4-14
11. Roaches North	Jefferson	Texas 11 E. Kasban	8-2S-1E	3,680	Devonian	3,586	12-1
12. Woodlawn*	Jefferson	Magnolia 9 Eubanks-Winesburg Unit	35-2S-1E	5,101	Plattin	5,074	1-6
13.	Knox	L. J. Heller 1 Norman	27-11N-4E	1,435	Glenwood	1,365	2-10
14. Blackland*	Macon	Sun Oil 1 J. F. Damery	5-15N-1E	3,780	Shakopee	3,116	5-12
15.	Macon	Sun Oil 1 W. W. Graves	3-16N-1W	2,746	St. Peter	2,622	11-24
16.	Macoupin	D. Gerhardt 1 M. T. Launer	23-12N-8W	1,390	Silurian	1,375	6-16
17. Waverly	Morgan	Panhandle Eastern 1 Doolin	16-13N-8W	2,071	Shakopee	2,064	12-1
18.	Peoria	Blue Ridge Oil 1 Connelly	3-11N-8E	1,365	Galena	1,285	4-7
19. Tamaroa*	Perry	Ted Glass 1 S. George	23-4S-1W	3,086	Devonian	2,942	1-13
20.	Perry	Jet Oil 1 Schwarz	25-5S-4W	2,834	Devonian	2,754	8-11
21. Olney South*	Richland	Sun Drlg. 1 R. Paddock "B"	9-3N-10E	4,910	Devonian	4,759	10-20
22.	St. Clair	W. G. Grossmann 1 Mueller-Miller Comm.	30-1S-8W	1,530	Trenton	1,448	2-24
23.	Vermilion	A. P. Lucht 1 E. Miller	12-17N-13W	2,515	Trenton	2,391	5-19
24. Dubois	Washington	J. L. Lester 1-T Bender	20-3S-1W	4,217	Plattin	4,212	12-1

* Plugged back to production.

West, Edgar County; Melrose and Melrose South, Clark County; and Prentice, Morgan County. Two new pools produce from Devonian or Silurian limestones, Blackland and Decatur, both in Macon County. One new pool, Posen North, Washington County, produces from the Trenton limestone. All the other new pools produce from the Mississippian.

Additional producing zones in pools in Illinois discovered in 1953 were all of Mississippian age (Table III). Of these, 8 were Chester sandstones and the remainder were Lower Mississippian limestones.

Some noteworthy exploratory wells which were non-productive in the deeper formations tested are listed in Table IV. The deepest of these, which reached a depth of 5,074 feet (Table IV, No. 12), tested the Plattin formation in the Woodlawn pool, Jefferson County. Four wells (Table IV, Nos. 3, 10, 14 and 17) were drilled to formations below the St. Peter sandstone. There were several dry Devonian tests in pools in the basin area (Table IV, Nos. 4, 5 and 21).

METHODS OF EXPLORATION

The principal methods used in locating exploratory wells continued to be subsurface geology and the reflection seismograph (Table V). The amount of seismograph work in 1953 was 50 crew-months as compared with 72 crew-months in 1952. Gravity-meter work decreased from 14 crew-months in 1952 to 2 crew-months in 1953.

Table V. Wildcat Wells Drilled in Illinois in 1953

Wildcat Near[a]			*Wildcat Far*[b]			*Total Wildcats*	*Total Producers*	*Percentage Successful*
Total	*Producers*	*Percentage Successful*	*Total*	*Producers*	*Percentage Successful*			
345	52	14.7	169	11	6.5	523	63*	12.0

[a] From ½ to 2 miles from production.
[b] More than 2 miles from production.
* Four of the discovery wells reported in Table I, and 7 of those in Table II were originally completed as dry holes and later reworked into producers.

Wildcat Far Wells Classified by Method of Location

Method of Location	*Total*	*Producers*	*Percentage Successful*
Geology	129	8	6.2
Geophysics	25	2	8.0
Non-scientific	15	1	6.7
Total	169	11	6.5

Table VI. Number of Geophysical and Core-Drilling Crews Active in Illinois During 1953 by Months

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
Seismograph	9	8	5	5	4	3	3	5	3	2	1	2
Gravity meter	0	0	0	0	0	0	0	0	0	0	1	1
Core drilling	1	1	1	1	1	1	1	1	1	2	2	0
Magnetometer	0	0	0	0	0	0	0	0	0	1	1	1

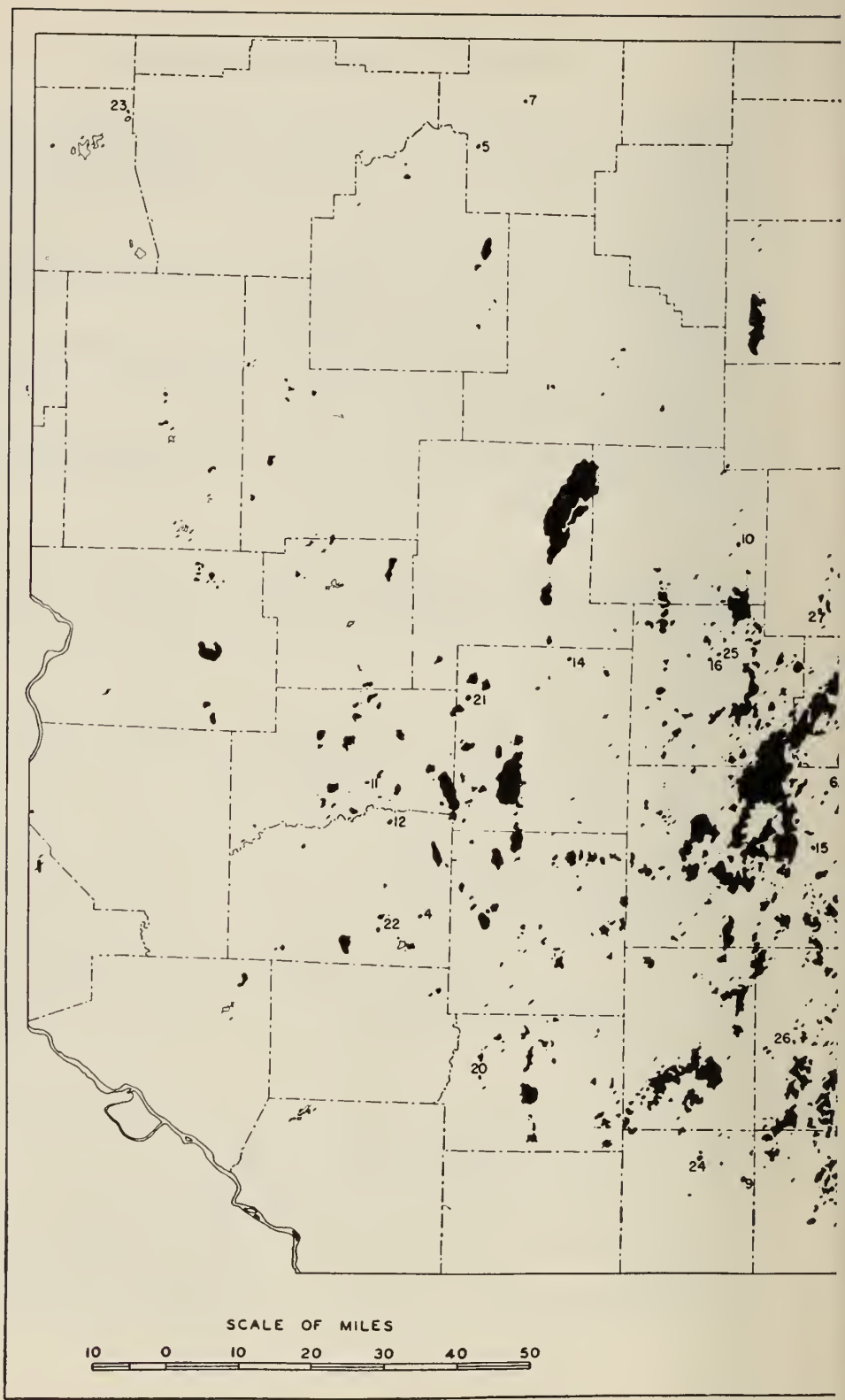
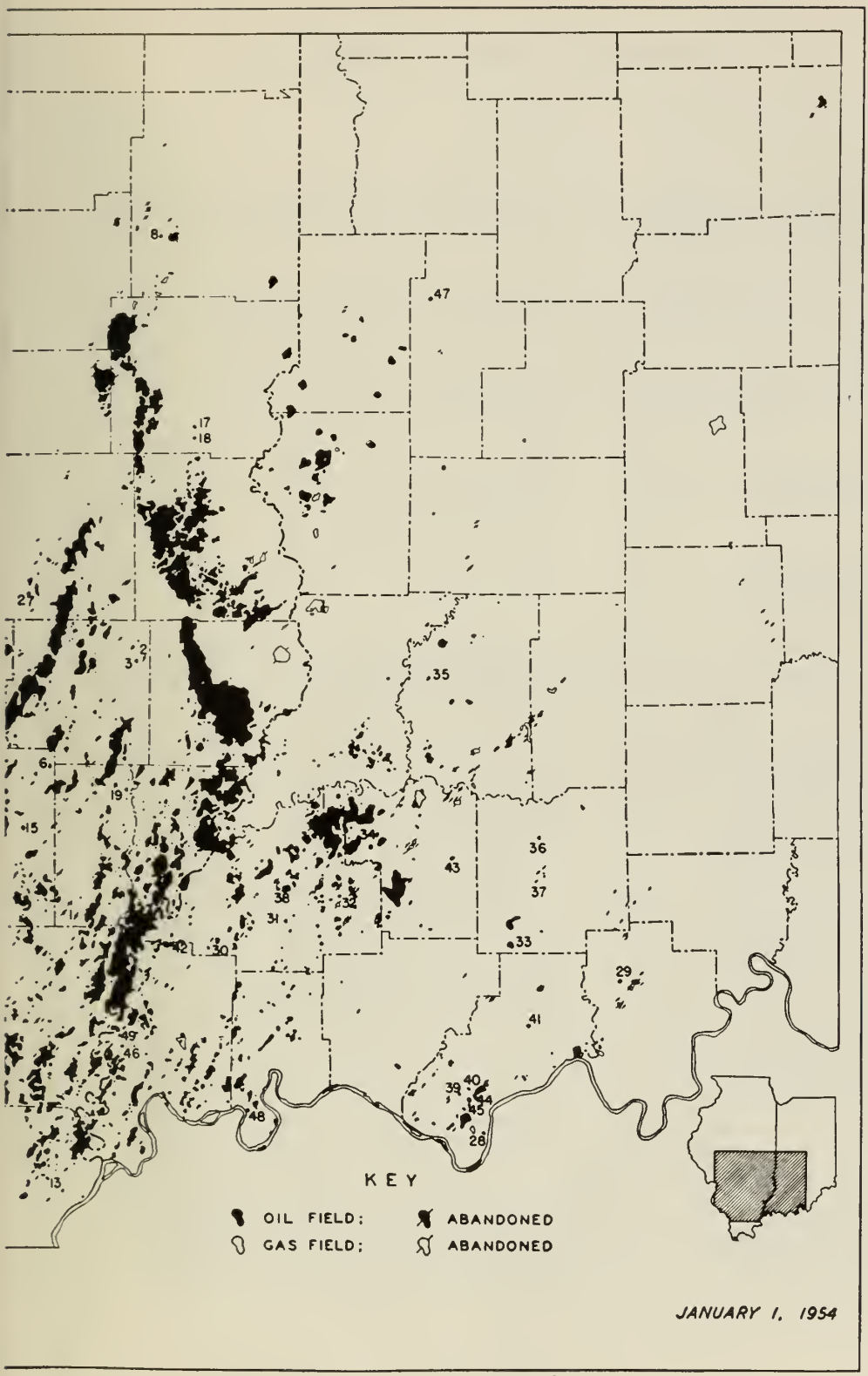


FIG. 1.—Oil and gas pools in Illinois and Indiana.



Numbers indicate new pools discovered in 1953 (see Tables I and VIII).

INDIANA

By T. A. Dawson

Oil production in Indiana during 1953 totaled 12,581,000 barrels as compared with 11,937,000[4] barrels during 1952. Thus, during 1953, production increased 644,000 barrels, or 5.4 per cent.

Drilling in Indiana during 1953 totaled 1,312 wells. Little change in either the totals or results of exploratory and development drilling occurred between 1952 and 1953 (Table VII). Of the 1,312 wells drilled, 416 were wildcats; 22 of the wildcat wells resulted in new-pool discoveries (Table VIII) and 16 resulted in extensions to pools (Table IX). In addition, 7 wildcat wells resulted in additional pay-zone discoveries in productive areas (Table X). During 1952, 416 wildcat wells were drilled, resulting in 21 new-pool discoveries, 17 extensions to pools, and 20 additional pay-zone discoveries. The percentage of wildcats that were successful in 1953 was 10.8, whereas in 1952 the percentage was 13.9 (Table VII). However, if additional pay-zone discoveries are excluded (and there is doubt that they should be classified as exploratory wells), approximately 9 per cent of all wildcat wells were successful in both 1952 and 1953.

Table VII. Completion Summary for Indiana for 1952 and 1953

	Oil	*Gas*	*Dry*	*Total*	*Percentage Successful*
1952 Exploratory wells	53	5	358	416	13.9
Development wells	382	19	465	866	47.5
Total	435	24	823	1,282	
1953 Exploratory wells	41	4	371	416	10.8
Development wells	417	27	452	896	49.6
Total	458	31	823	1,312	

Wells were drilled in 45 of the state's 92 counties. More than two-thirds of the wells, however, were drilled in five counties in the southwestern part of the state: 235 wells in Gibson County; 230 in Posey County; 185 in Pike County; 142 in Spencer County; and 104 in Dubois County. The only other counties that had more than 50 wells were Knox with 75 and Vigo with 61.

Although exploratory wells were drilled in 30 counties, in only 11 counties were the exploratory wells successful. Of the 45 successful exploratory wells, 32 were drilled in four counties. Posey and Spencer counties each had 10 successful exploratory wells; Gibson and Dubois each had 6; Pike had 4; Vanderburgh had 3; Boone had 2 (both gas); and Clay, Daviess, Knox, and Perry had 1 each.

Most of the successful exploratory wells were completed in beds of Mississippian age. Of the 22 new-pool discovery wells, 19 were completed in the Mississippian (15 in the Chester and 4 in the Ste. Genevieve), 1 in the Devonian, and 2 in the Pennsylvanian. Of the 16 extensions, 14 were completed in the Mississippian (9 in the Chester and 5 in the Ste. Genevieve), and 2 in the Trenton. All

[4] Does not include Trenton area.

Table VIII. Discovery Wells of New Pools in Indiana in 1953

Pool	County	Company and Farm	Location	Total Depth (Feet)	Producing Formation	Depth to Top (Feet)	Initial Production (Bbl.)[a]	Date of Completion	No. Wells Producing in Pool, Dec. 31, 1953
28. Africa	Spencer	J. Milliard Haynes 1 Ayer Bros.	3-8S-6W	997	Tar Springs	982	8	6-24	2
29. Bristow West	Perry	Ben H. Nation 1 Lee & Ruby Shelton	23-4S-3W	313	Jackson	305	3; tw	1-21	1
30. Fleener South	Gibson	Miami Operating Co. 1 Forman E. Knowles	33-3S-12W	1,910	Waltersburg	1,903	65; 15	7-15	1
31. Fort Branch West	Gibson	Ervin Drilling Co. 1 William Hofman	7-3S-10W	1,358	Pennsylvanian	1,343	16; tw	11-4	1
32. Francisco Central	Gibson	J. L. Black Oil Producers Inc. 1 Owen & Alice Hopkins	28-2S-9W	1,811	Ste. Genevieve	1,729 & 1,761	240	12-23	1
33. Huntingburg South	Dubois	Ed Steckler & Slim Rea Drlg. Co. 1 Frank Seufert	32-3S-5W	1,088	Ste. Genevieve	1,081	450	5-20	6
34. Glezen West	Pike	Harley R. Burton 1 Audrey & Delores Welton	19-1S-8W	1,502	Aux Vases	1,490	10; 10	12-23	3
35. Hyatt	Daviess	Graham Development Corp. 2 Homer E. Capehart	33-4N-7W	1,081	Ste. Genevieve	1,070	10; 12	8-12	1
36. Jasper North	Dubois	Elmer M. Novak 1 Edgar Fuhrman	13-1S-5W	750	Cypress	471 & 477	5	11-25	1
37. Jasper South	Dubois	Ben A. VonBurg 2 Gramelspacher Farms Inc.	13-2S-5W	833	Aux Vases	830	25; 8	10-1	1
38. King North	Gibson	C. S. Higgins 1 Comm. Wheeler; Bolin; Davis & Warren	19-2S-10W	2,051	Aux Vases	2,042	205	3-25	13
39. Lake Mills	Spencer	Oil Electronics Inc. 1 Comm. S. Q. Snyder & Allen Planes	7-7S-6W	1,541	Aux Vases	1,534	15	7-1	2
40. Lake Mills East	Spencer	A. B. Doty 1 F. D. Stallings	5-7S-6W	1,446	Aux Vases	1,434	20; 20	8-12	1
41. Liberal	Spencer	Walter Sargent 1 Oliver A. Criss	27-5S-5W	854	Jackson	837	12; 20	9-23	2
42. Mumford Hills East	Posey	E. F. Moran Inc. 1 Doll Heirs	35-3S-13W	2,833	Aux Vases	2,708	120	10-1	4
43. Noxid	Pike	M. W. Brewer 1 Oscar Kinsman & Ed Lemons	36-1S-7W	1,239	Aux Vases	1,232	12	6-3	2
44. Rock Hill South	Spencer	Stanoco Oil Co. 1 Louis E. Cooper	9-7S-6W	1,006	Tar Springs	918	50	5-6	2
45. Rock Hill West	Spencer	Ben A. Branch 1 J. Wesley Heuring	8-7S-6W	1,492	Bethel	1,372	20	8-19	2
46. Savah West	Posey	Peter Fox Drilling Co. 1 Herdis Clements	10-6S-14W	3,054	Tar Springs	2,238	58	10-7	1
47. Staunton	Clay	Carter Oil 1 George & Hattie Lehner	15-12N-7W	1,620	Devonian ls.	1,405	24; 12	6-24	2
48. Vaugbn West	Vanderburgh	Jones & Price 1 H. J. Hendricks	20-7S-11W	1,030	Pennsylvanian	1,016	5	10-20	1
49. Welborn North	Posey	Hartman & Jordan 1 Comm. Albert Aldrich & J. C. Ellis	33-5S-14W	3,205	Ste. Genevieve	3,084	48; 2	1-28	1

[a] Oil and water.

Table IX. Discovery Wells of Extensions to Pools in Indiana in 1953

Pool	County	Company and Farm	Location	Total Depth (Feet)	Producing Formation	Depth to Top (Feet)	Initial Production (Bbls.)[a]	Date of Completion
1. Barrett Mitchell Consol.	Gibson	Calvert Drilling Inc. 1 John G. Kohlmeyer	25-2S-10W	1,458	Hardinsburg	1,439	36; 70	7-29
2. Beaman South	Knox	Morris H. C. Johnson Jr. 1 Paul Klein	Sur. 32-3N-11W	1,929	Ste. Genevieve	1,844	14	6-10
3. *Black River	Posey	Calvert Drlg. Co. B-1 Hickam Elliott	19-4S-13W	2,982	Bethel	2,689	47; 158	1-14
4. Francisco	Gibson	Olds Oil Co. 1 Ira Wright	9-2S-9W	1,819	Ste. Genevieve	1,724	20	1-28
5. Huntingburg	Dubois	Mulzer Bros. 1 Walter H. Schmett	17-3S-5W	970	Aux Vases	968	120; 10	1-28
6. *Huntingburg South	Dubois	Wondrel Wise & David Caldemeyer 1 Luther Byers	29-3S-5W	825	Cypress	818	1,000 MCF	5-27
7. Rapture	Posey	Calvert Drilling Co. 1 A. L. Johnson	33-4S-13W	3,057	Waltersburg	2,130	10; 15	6-24
8. *Rock Hill	Spencer	Joe Simpkins 1 Wyman Bretz Sr.	3-7S-6W	953	Tar Springs	943	140	2-25
9. *Rock Hill South	Spencer	John W. Tuttle 1 Sebastian Lehr	16-7S-6W	1,458	Ste. Genevieve	1,452	14; 5	5-20
10. Rockport	Spencer	E. F. Moran Inc. 1 Clyde Mackey	31-7S-6W	1,760	Tar Springs	1,100	8; 20	11-25
11. Stacer	Vanderburgh	M. L. Vance 1 Leola Rustin	5-5S-10W	2,356	Ste. Genevieve	2,276	35; 20	4-8
12. Stooker	Posey	W. J. King 1-A William J. Hartmann	5-7S-12W	2,729	Ste. Genevieve	2,687	84; 2	9-9
13. Vernon Heights	Vanderburgh	The Superior Oil Co. 1 Glenard Kolb	28-6S-11W	2,632	Jackson	2,167	5; 12	1-7
14. Waugh	Boone	Wm. R. Moss Sr. 1 William Merrill	21-19N-2E	1,063	Trenton	1,057	476 MCF	1-14
15. Waugh	Boone	William R. Moss Sr. 1 Paul Cody	22-19N-2E	1,065	Trenton	1,060	20 MCF	8-19
16. Welborn Consol.	Posey	Lloyd E. Kennedy & Hayes Drlg. Co. 1 E. C. Culley	8-6S-14W	2,517	Tar Springs Cypress	2,141 2,509	70	5-20

* Also new pay.
[a] Oil and water.

TABLE X. DISCOVERY WELLS OF ADDITIONAL PRODUCING ZONES IN POOLS IN INDIANA IN 1953

Pool	*County*	*Company and Farm*	*Location*	*Total Depth (Feet)*	*Producing Formation*	*Depth to Top (Feet)*	*Initial Production (Bbl.)*[a]	*Date of Completion of Discovery Well*
1. Black River	Posey	Calvert Drlg. Co. 2 Hickman-Elliott	19-4S-13W	2,995	Degonia Palestine	1,847 1,932	71; 2	1-28
2. Glezen	Pike	Arthur Wilson & C. Bradshaw 3 Emma Welton	21-1S-8W	1,527	Aux Vases	1,431	30	1-21
3. Grafton South	Posey	G. L. Parris 1 Seward & Millspaugh	33-6S-14W	2,279	Hardinsburg	2,271	20; 14	8-26
4. Huntingburg	Dubois	Mulzer Bros. 12 W. E. Struckman	17-3S-5W	980	Jackson	775	1,000 MCF	5-20
5. Petersburg West	Pike	C. E. O'Neal & Co. 1 Comm. Nannie Barker	32-1N-8W	1,338	Bethel	1,314	360	2-25
6. Troy	Spencer	C. A. Busick 1 Gilbert J. Berg	11-6S-4W	1,533	Salem	1,530	50	10-1
7. Welborn Consol.	Posey	Magnolia Petroleum Co. 2 Louis E. Allyn	21-6S-14W	2,503	Tar Springs	2,160	312	3-4

[a] Oil and water.

TABLE XI. SELECTED LIST OF DRY TESTS IN INDIANA IN 1953

County	*Company and Farm*	*Location*	*Total Depth (Feet)*	*Deepest Formation Tested*
1. Spencer	Lohman-Johnson Drlg. Co. Inc. 1 Peter C. Bergenroth	2-6S-4W	2,348	Devonian ls.
2. Vigo	James G. Beard 1 Chicago, Milwaukee, St. Paul & Pacific Railroad	3-12N-9W	1,722	Silurian

7 new pays were completed in the Mississippian (6 in the Chester and 1 in the Salem).

Many of the successful exploratory wells resulted in only very limited development. However, 3 new pools, 2 extensions, and 1 new pay are noteworthy. Huntingburg South (new pool), with 6 wells producing from the Ste. Genevieve limestone, has a daily production of 82 barrels and a cumulative production of 35,370 barrels. King North (new pool), with 13 wells producing from the Aux Vases, has a daily production of 262 barrels and a cumulative production of 78,071 barrels. Mumford Hills East (new pool), with 4 wells producing from the Aux Vases, has a daily production of 179 barrels and a cumulative production of 21,774 barrels. Development in the extension area of Huntingburg resulted in 8 wells producing from the Aux Vases; these wells have a daily production of 142 barrels and a cumulative production of 60,139 barrels. Development in the extension area of Rock Hill resulted in 27 wells producing from the Tar Springs sand; these wells have a daily production of 284 barrels and a cumulative production of 53,332 barrels. Development in the new pay of Petersburg West resulted in 13 wells producing from the Bethel sand; these wells have a daily production of 183 barrels and a cumulative production of 101,034 barrels.

Few significant dry holes were drilled. Two, however, are worthy of mention (Table XI). The Lohman-Johnson Drilling Company's Peter C. Bergenroth No. 1 was a Devonian test in the Troy pool, and James G. Beard's Chicago, Milwaukee, St. Paul & Pacific Railroad's No. 1 was a Devonian test in the reef area of Vigo County. Both of these wells were drilled on structural features; the latter was drilled on a very pronounced reef structure. As all Devonian production in Indiana is associated with structure, these two wells probably will have a dampening influence on exploration for Devonian oil in the areas in which they were drilled.

Subsurface geology was the principal exploration tool used in Indiana. Nevertheless, core-drilling continued to be an important tool in areas where data indicate that structure is necessary to oil accumulation. Fairly large core-drilling programs were carried on in the reef area of Sullivan and Vigo counties and in the part of northern Indiana that lies within the Michigan basin. Little geophysical work was done.

Leasing activity increased appreciably in only two areas of Indiana—the Spencer-Dubois area, where successful exploratory drilling caused brisk lease plays, and the Michigan basin area, where several thousand acres are reported to have been leased in connection with core-drilling programs.

Drilling in Indiana would have slumped during 1953 had it not been for the greatly increased activity in Spencer and Dubois counties. Drilling in these two counties jumped from 47 wells in 1952 to 246 wells in 1953. Reservoir beds are shallower in the Spencer-Dubois area than in the Posey-Gibson area on the west. (Increased activity in this area of relatively shallow reservoirs is reflected in the average depth of all wells drilled; the 1,780-foot average for 1952 dropped to a

1,625-foot average for 1953.) Productivity of wells in the Spencer-Dubois area is very favorably comparable with that of wells in other areas; the average initial production of successful exploratory wells in the Spencer-Dubois area was 67 barrels as compared with 70 barrels for all successful exploratory wells. Moreover, a nearly complete Chester section, containing multiple potential reservoirs, is present in the Spencer-Dubois area. Because of shallow reservoirs, productive reservoirs, and multiple reservoirs, activity in the Spencer-Dubois area should remain relatively high and do much toward sustaining the drilling tempo in Indiana.

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