

Petroleum Production in Indiana

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Indiana is at present experiencing its second major oil boom. The first, reaching its peak in 1904, occurred in the Trenton Field of northeastern Indiana. The present boom, which began in 1937, is generally confined to southwestern Indiana, the eastern portion of the Illinois Coal Basin. The increase in activity in Indiana's petroleum fields promises to more than triple the state's oil output for 1940 over that of 1936.

The search for petroleum is not a new venture in southwestern Indiana. This district was the scene of the state's first oil discovery which occurred about 1865 when developments in Pennsylvania stimulated prospecting throughout northeastern United States. Production of petroleum in commercial quantities, however, did not occur until 1888 when a pool was discovered in the vicinity of Terre Haute. The productivity of this pool resulted in an intensive search for oil but no further important discoveries were made until 1903 when the Princeton Pool in Gibson County was developed.

During this period the probable output of the fields of southwestern Indiana did not exceed 10,000 barrels annually and the district was completely overshadowed by the Trenton Field. Northeastern Indiana's Trenton Field produced about 150,000 barrels in 1890. Five years later the annual production was 4,500,000 barrels. The upward trend in Trenton output continued until 1904 when the peak production of 11,339,000 was reached. Its decline was as precipitous as its rise and six years after the peak, production had fallen to about 1,000,000 barrels annually. In 1930, northeastern Indiana production amounted to less than 100,000 barrels annually.

During this period of rapid decline in the Trenton Field, the fields of southwestern Indiana were increasing in importance and by 1910 their production about equaled that of the Trenton Field. The discovery of the Oakland City Pool in Pike County in 1907, the Edwards Field in 1911 and others, mainly in Sullivan, Daviess, Gibson and Pike counties, brought southwestern Indiana's production from about 10,000 barrels annually to 800,000 barrels annually, near which level the output held until the present boom got under way. It is estimated that for the past twenty-five years about 90 per cent of Indiana's total production has been from the southwestern fields.

During the period between 1905 and 1910 in which oil production in southwestern Indiana increased from a few thousand barrels annually to approximately 800,000 barrels annually, a parallel development was taking place across the Wabash River in southern Illinois. From practically nothing in 1905, Illinois oil production soared to over 30,000,000 in 1908, 1909, 1910 and 1911. The decline of the Illinois fields was gradual and by 1930 had fallen to the 5,000,000-barrel level where it remained until 1937. Since 1937, new discoveries in Illinois have resulted

in a spectacular increase in oil production in that state. 92,000,000 barrels of petroleum were produced in 1939 and production for the first six months of 1940 indicates that the yield for this year will approach 150,000,000 barrels. This production places Illinois in fourth position in the United States, outranked only by Texas, California, and Oklahoma.

The discovery of new and spectacular oil producing horizons in Illinois had a stimulating effect on the oil industry of southwestern Indiana. The first effect on Indiana was the beginning of a "lease play" which started in the latter months of 1937. Leasing activity reached its maximum intensity in 1938 and by January, 1939, it is estimated that 90 per cent of the southwestern counties of Indiana were under lease. Another estimate places the leased acreage at between 3,000,000 and 5,000,000 acres, for which the landowners had received more than \$1,000,000. Independent producers and speculators as well as many of the major oil companies were engaged in this leasing activity. By July, 1939, 1,147,000 acres were held by twenty of the major producing companies, five of which held more than 100,000 acres each. The maximum holding for any one company was 460,000 acres.

During the early stages of leasing in 1937 the prices paid for oil leases seldom exceeded 10 cents per acre with 25 cents per acre annual delay rentals. As competition increased, prices increased to \$1.00 per acre with \$1.00 per acre annual delay rentals. By the end of 1938 as much as \$25.00 per acre was required to secure unproven acreage in favored districts. After the discovery of the Griffin Pool, prices rose as high as \$100.00 per acre in that district. Over the region as a whole, however, exploratory work in the first years of the boom was not overly encouraging and prices remained generally less than \$1.00 per acre.

The first year and one-half of the present oil boom was featured largely by leasing activity and exploratory work. Not until the early months of 1939 did the number of well completions show a noticeable increase (Figure 1). In 1937, oil wells completed numbered thirty-nine, and dry holes numbered fifty. In 1938, the oil wells completed were forty-four in number and the dry holes fifty-four. These figures compare favorably with those for 1935 and 1936, years prior to the boom, when the oil well completions were forty-eight and forty-five, respectively.

An interesting part of the exploratory work carried on in the first two years of the present boom was the use of geophysical methods. The seismograph was used by most of the large operating companies. In general the most intensive surveys were made in the extreme southwest or deeper part of the Illinois Basin. One company, however, worked on the outer rim of the Basin in Martin, Lawrence and Orange counties. By the middle of 1939, exploratory work utilizing the seismograph was largely completed. Gravimeter crews, employed by two of the major producers, worked the entire Basin rather thoroughly. Core drilling also played an important part in the exploratory work.

The entire economic life of southwestern Indiana has been quickened by the tide of men and money associated directly or indirectly with the oil boom. The picture, however, is not without its darker side. Many of the smaller communities have found their municipal organizations

inadequate to cope with the increased population and related problems. Particularly serious are the matters of housing, water supply, sanitation and school facilities. These towns and villages, realizing the nature of the oil industry, hesitate to make permanent improvements to meet demands that may prove to be transitory.

Following the initial leasing and exploratory phases of the oil boom came the increase in the number of wells being drilled in southwestern Indiana (Figure 1). The results of this drilling activity became apparent in April and May, 1939, when the number of completions rose sharply. Oil wells completed in 1938 numbered 44; in 1939, 170; and in the first eight months of 1940, 163 oil wells were completed. Figure 2 shows the location of the oil wells and dry holes completed in southwestern Indiana for the three-year period ending October, 1940.

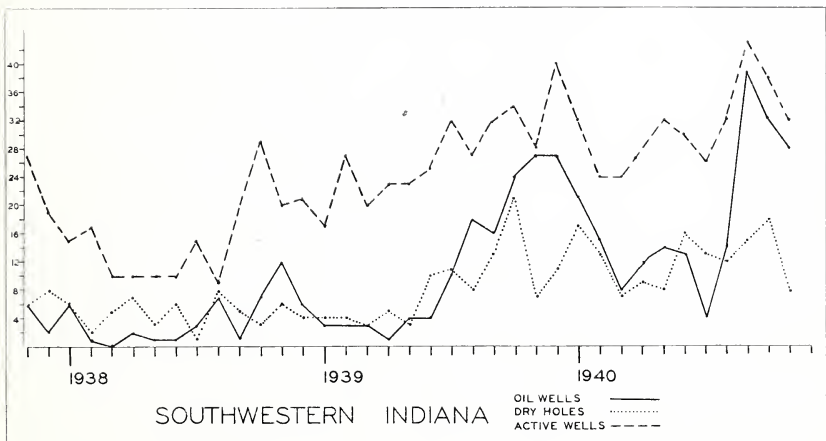


Fig. 1. Oil wells and dry holes completed and wells actively drilling in southwestern Indiana, for the three year period ending October, 1940.

The most important discovery up to the present time is the Griffin Pool, located in the southwest corner of Gibson County. The discovery well was brought in in December, 1938, with a production of 604 barrels of oil per day. Although flood waters of the Wabash retarded work in the spring of 1939, eight months after the completion of the discovery well there were thirty-seven producing wells in the field.

On October 1, 1940, 179 wells with an average daily production of seventy-six barrels each were producing about 13,000 barrels of oil per day. In the light of present information as to the proven area and the nature of the producing horizons, it has been estimated that the probable reserves of the pool amount to some 13,000,000 barrels, or a producing life of more than thirty years at the present rate of recovery. Extension of the proven area and discovery of deeper producing horizons are possibilities that may increase greatly the importance of the Griffin Pool.

The Heusler Field, in southeastern Posey County, was brought into production in June, 1938. The discovery well was rated as pumping

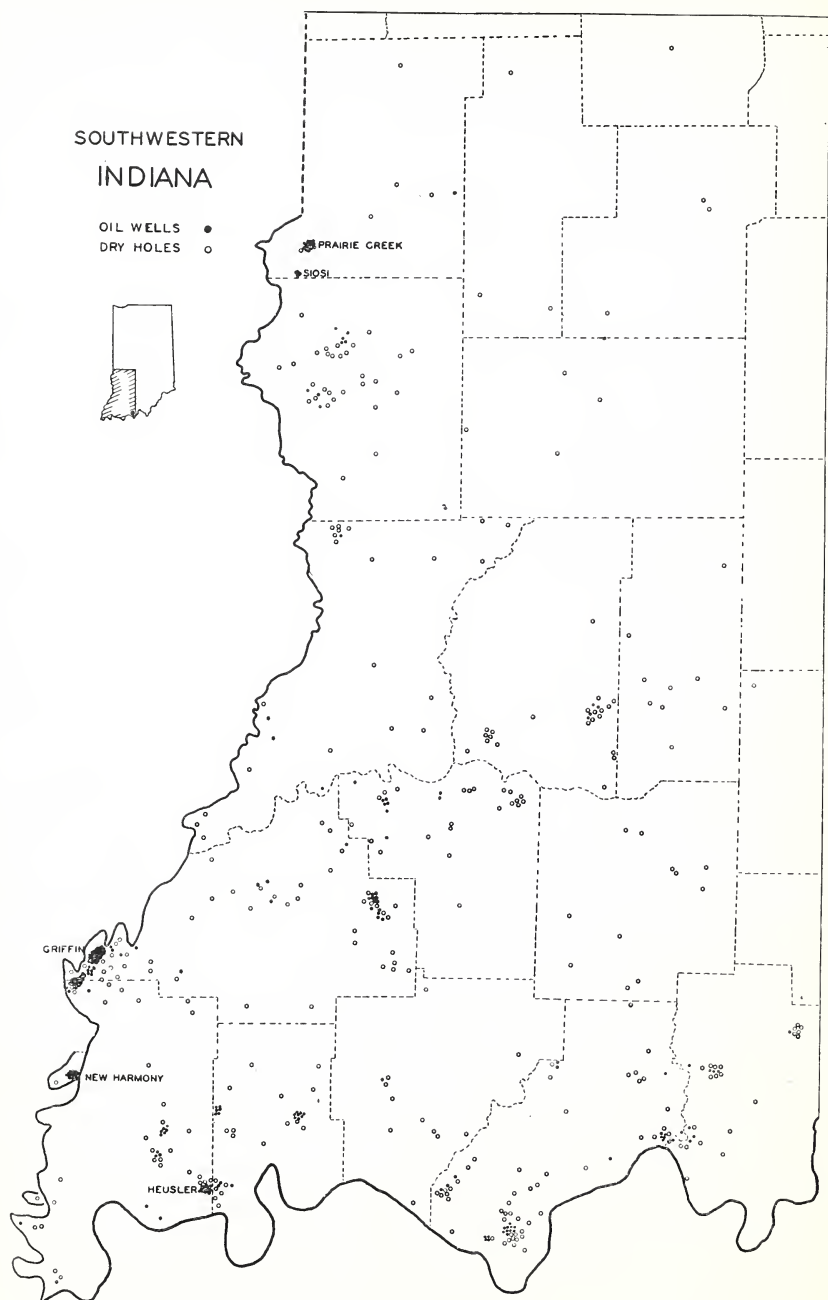


Fig. 2. Location of oil wells and dry holes completed in southwestern Indiana in the three year period ending October, 1940.

twenty-three barrels of oil per day. At present there are thirty wells with an average daily production totaling 600 barrels.

The discovery well of the New Harmony Field, southwest of the town of New Harmony in Posey County, was completed in June, 1939, with an average daily production of 252 barrels of oil daily. This is one of the fields that was located by seismic exploration. The field is completely owned by one company and has been systematically developed on a ten acres spacing plan. The estimated area of the field is 250 acres and by the end of August, 1940, twenty-four wells had been drilled. The average daily output of these wells totals 2,161 barrels and at this rate of production the field has an estimated productive life of about six years.

Other important developments have taken place in the Siosi and Prairie Creek fields of Vigo County. The five fields, Griffin, Heusler, New Harmony, Siosi and Prairie Creek, produced in August, 1940, from 386 wells, a total of about 16,000 barrels of oil per day. In the same month the 1,010 wells in the so-called old fields in southwestern Indiana produced 1,100 barrels of oil per day. Production for the state has increased steadily from 822,000 barrels in 1936 to 1,436,000 barrels in 1939, and 1,725,000 barrels for the first six months of 1940.

To date the state of Indiana has made no provision to insure maximum recovery of its newly found petroleum resources or maximum life for this rejuvenated industry. Orderly development is taking place in at least two of the new fields by virtue of the fact that they are completely owned by single companies. In general, the petroleum industry in Indiana is wide open and the stage set for a repetition of the boom and disaster type of exploitation which occurred in the Trenton Field thirty-five years ago.