OIL AND GAS OPERATIONS

Oil and gas activities in Indiana during 1943 continued to decline at about the same rate as in 1942. New development, production, and prospecting all showed the results of Federal regulation, low price for crude oil and shortages of labor and materials. Several local stripper-well operations were shut down, but no large-scale abandonment has occurred as yet.

In Indiana 277 holes were drilled for oil and/or gas, of which 99 were completed as oil wells, 19 as gas wells and 159 were dry holes. This record was a decline of 21 per cent over last year in the total number of completed tests, 20 per cent in the number of oil wells and 9.5 per cent in the number of gas wells. As in the previous year, most of the drilling (82 per cent) was in the southwestern part of the State, Gibson County ranking first with 77 completions and 49 oil wells. Posey County was second with 59 completions and 20 oil wells. The remaining 18 per cent of the drilling was in the old Trenton oil and gas area. The total footage drilled during the year was 482,799 feet, a decline of 18 per cent from the previous year. Of this 146,559 feet was wildcat footage.

The total initial production of the oil wells completed was 6,362 barrels, and of the gas wells was 2,562,000 cu. ft.

Three tests in the old Trenton area were drilled into the Cambrian and reported nothing more than tar residue. A Devonian test was to be made in the Griffin field in the Wabash River, but did not get started in 1943.

The new discoveries in 1943 were virtually all in the southwestern part of the State, and all, so far, one-well pools, except the Owensville, North, pool, in Gibson County. The latter was brought in during the month of February and by the end of the year nine wells were producing in the pool, with a reported initial yield of 1,260 barrels per day. By the end of the year it had a daily average production of 401 barrels, and an accumulated production of 39,129 barrels. The average gravity of the oil is reported to be 35.6.

On the Ohio-Indiana state line, early in 1943, a new pool was opened up in the old Trenton area. The discovery well was on the Ohio side of the line. An offset well was completed on the Indiana side, with an initial yield of 64 barrels, and settled down to 5 barrels per day. This well produced 1,154 barrels up to December 31, 1943. There was no further development here, because of the Federal Conservation Order M-68, restricting drilling to one well on 40 acres. The development pattern usually followed in this area is one well to 5 acres.

The Rogers Pool was a new discovery, with one well, initial production 20 barrels.

Most of the developments in the oil-field pools during the year took place in the Kirksville pool, in Gibson County, and the Caborn pool in Posey County.

The crude oil production in 1943 was approximately 5,273,000 barrels, a decline of 29 per cent from the previous year. The Griffin field, of Gibson and Posey counties, which produced approximately 2,395,000 barrels of oil, accounted for nearly half of the total production of the State.

The price of crude oil was $1.22 a barrel for the old fields and $1.37 for the new fields in southwestern Indiana. In the old Trenton field in northeastern Indiana the producers received $1.60 a barrel for the crude, which was used as fuel oil.

Figures on the total production of natural gas in 1943, received to date are not complete, but the yield from the three largest gas fields in the State are as follows:

Rockport gas field in Spencer County, which is the largest in total yield, was 500,151,000 cu. ft.; Greensburg field in Decatur County, second largest, was 228,894,100 cu. ft., and Unionville field in Monroe County, third largest was 168,710,000 cu. ft. The total yield of these three fields show a decline of 15 per cent over their 1942 yields.

OFFICE WORK

Routine office work has consisted mainly of answering correspondence, identifying rocks and minerals brought or sent in by owners or finders, supplying information to many hundreds of geologists, oil and gas operators, and others interested in oil and gas production and prospecting.

Many hundreds of mineral specimens and rocks are identified each year by members of the Division. Such specimens, many of which the owners believe to contain valuable minerals, are usually rather common materials. They include calcite, quartz, iron ores, pyrite, mica, etc. The Division welcomes these requests and members of the staff are always glad to be of service.

Many requests are received each year from individuals and companies interested in developing, or, in the possibilities of development, of the various mineral resources of Indiana. These include stone, sand and gravel, coal, oil and natural gas, iron ore, marl, peat, ground water, mineral wool, moulding sands, clay, kaolin, dolomite, etc. In many instances the Division is called upon for information concerning the state of mineral industries already established in Indiana.

Other requests for information upon all branches of geology include caves, fossils, physiography, topography, rock garden material, geology of the State parks, State forests, etc.

DEPARTMENTAL WORK

Dr. Wallace W. Hagan, graduate of the University of Illinois and in charge of the Ground Water Section of the Division of Geology, continued with the electrical earth-resistivity program through 1943. This program is designed to aid in the location of new and/or additional ground water supplies for municipalities, various schools of the War Department, ordnance plants and industries engaged in the war effort. The instrument may also be used to locate commercial deposits. This service, made upon request, is furnished free to cities, towns and communities.

The Ground-Water Section also answers inquiries regarding individual ground water supplies, it collects records of wells drilled as well as samples of materials penetrated, and it cooperates with the United States Geological Survey in the cooperative water program.

The cooperative research agreement with the Ground Water Division of the United States Geological Survey, instituted in 1935, was continued during 1943. Observation water wells located through the entire State are checked every two weeks. At the end of the year periodical measurements were being made in about 53 wells, including 13 wells in Marion County. These wells represent all variations of topography, altitude, and water-bearing strata, and continuation of the measurement program will give valuable information concerning the fluctuations in level of the sub-surface water supplies. Data are assembled and studied in the office of the U. S. Geological Survey in Indiana.

As in previous years, the Department of Conservation cooperated with the United States Geological Survey in a topographic mapping program, wherein each sponsor furnished $25,000 per year. Mapping of the quadrangles is done by engineers from the Federal Survey, and assistants who are residents of Indiana. The finished maps are compiled and published in Washington. The Divisions of Geology and Engineering have charge of the selection of areas to be mapped. Mapping under the new program is done on the scale of 2 inches per mile, approximately, and each quadrangle, or map, is 7½ minutes of arc square. The new, larger scale of these maps and the accuracy of the work done by the United States Geological Survey, make these maps very valuable. They are the most accurate maps of their kind in the world, and their utility in highway construction, flood control, State and city planning, exploration for oil and coal, and many other types of endeavor cannot be overestimated. Mapping has been completed in the Southern Area of the State, and work in other areas is progressing as rapidly as possible. During 1943 many more quadrangles were completed and published.

PUBLICATIONS

The Annual Report upon the oil and gas industry was submitted to the American Institute of Mining and Metallurgical Engineers for publication in its proceedings. Reprints are available in this office. In addition to the above, Harrison County Supplement to Publication No. 108—"Sub-Surface Strata of Indiana"—has been published and two supplements to this publication previously issued, Jay County and Wabash County, have been revised to date and published.

STATE MUSEUM

The Division of Geology supervises the State Museum, located in the basement of the State House. The exhibits continue to attract large numbers of visitors and have great variety and appeal to persons in all walks of life.

LEGAL DIVISION

A deputy attorney general is assigned to look after legal matters in which the Department of Conservation has an interest. During the fiscal year just closed many land purchases were made to add to state forests, state game preserves, state parks and various other state properties. Over 100 opinions were given upon abstracts of title covering the land thus involved.

In several court actions pending in various counties of the state, the office of Attorney General intervened in drainage cases where the proceedings tended to affect the levels of inland lakes. The office has advised with the Commission, the Director of the Department and division heads with reference to litigation involving the Department, and on contracts of various kinds entered into for the operation of state forests, parks, fish hatcheries, game preserves and other state properties under the Department's supervision.

One of the interesting contracts entered into was that for the drilling of gas and oil under the bed of the Wabash River, under which agreement drilling has already proceeded to a depth of some 3,000 feet. Should oil be commercially produced, the state will receive a royalty on all oil produced by this operation.

In addition, the office has advised with Fish and Game Conservation Officers with reference to their duties and concerning fish and game laws and regulations, and has cooperated with many groups throughout the state in the promotion of conservation.