

OFFICE OF STATE SUPERVISOR OF NATURAL GAS.
INDIANAPOLIS, IND., December 31, 1916

*Hon. Edward Barrett, State Geologist,
Indianapolis, Ind.*

Dear Sir:

I am sending you today the manuscript of the Annual Report for the 41st Annual Report of the Department of Geology.

Thanking you for the valuable suggestions and assistance I have received from you, I am,

Very truly yours.

FLOYD E. WRIGHT,
State Supervisor of Natural Gas.

Oil and Gas

By FLOYD E. WRIGHT.

THAYER OIL AND GAS FIELD.

Thayer is in the northeastern part of Newton county on the Monon Railroad about one mile south of the Kankakee river, which forms the northern boundary of Newton county.

About fifteen years ago there was a well drilled about one mile west of the town of Thayer in section thirty-two, township thirty-two, north of Range eight east, which is said to have had a good flow of gas and would have pumped fifty barrels of oil per day had it not been spoiled in shooting.

Seven years later a well was drilled about 400 feet west of Thayer, on the land now owned by Grant Brothers in section thirty-three, township thirty-two, range eight, in which there was a good flow of gas and some oil. The well stood open until the fall of 1915, at which time the oil sand was plugged in the bottom of the hole and the gas closed in.

In the fall of 1916 the Thayer Oil and Gas Company drilled a well three hundred feet west of well Number 1 on the Grant farm. At 655 feet deep they struck a flow of gas which would make about 75,000 cubic feet per day, and at 850 feet they struck some oil, but the quantity is yet to be determined. The gas is produced from a stratum of limestone about 40 feet thick, which belongs to the Hudson river shales and is just above the Utica shale. It seems to have a good steady flow and will prove valuable in that vicinity for domestic use.

The oil was struck in Trenton rock at 850 feet, but on account of the gas pressure on the oil they have been unable, up to date, to pump enough oil to determine what the well will make. The same company a little later drilled a well about 600 feet southeast of the Grant well Number 2 and got a very small flow of gas and no oil, which shows that the best possibilities for future developments are west of the Grant wells.

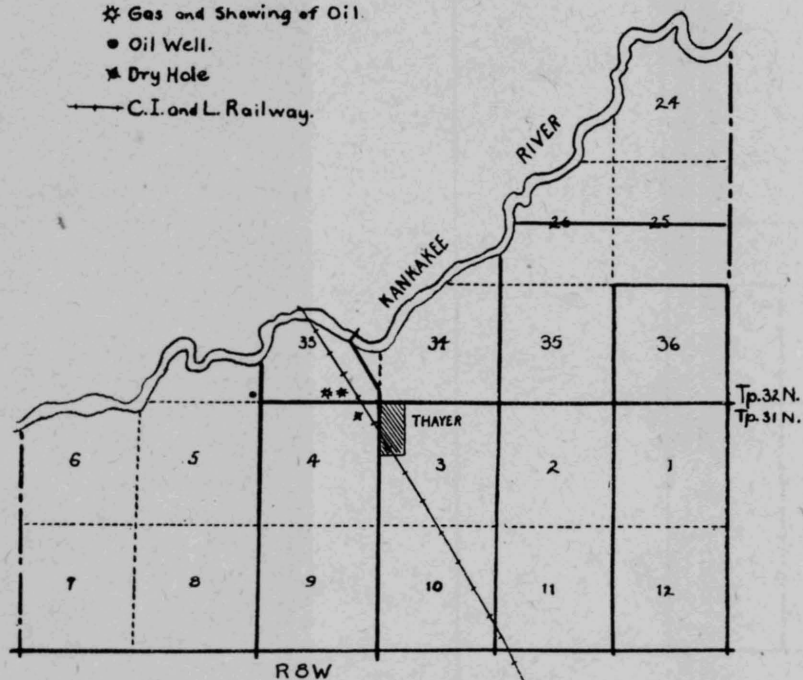
The following is a log of Grant well Number 2:

Log of well No. 2, drilled on Grant farm west of Thayer by the Thayer Oil and Gas Company.

OUTLINE MAP of THAYER OIL AND GAS FIELD.

LEGEND

- ☆ Gas and Showing of Oil.
- Oil Well.
- ✱ Dry Hole
- C.I. and L. Railway.



Gas sand.....	at.....	615
Thickness of gas sand.....		20
Salt water.....	at.....	675
Trenton Rock.....		846
Oil.....	at.....	850
Total depth.....		862

RANDOLPH COUNTY.

Monroe—D. McNabb, D. McNabb 1.....	abd
Monroe—M. F. Wood, M. F. Wood 5.....	drg
C. M. Congill, Condon & Co. 1.....	drg
T. F. Adams, T. F. Adams 1.....	drg
Wells drilling.....	3

During June in the Indiana fields 32 wells were completed, of which 10 were dry holes, the balance showing a daily production of 524 barrels, or an average per well per day of 23 9-11 barrels. This when compared with the May figures shows a decrease of 5 in completed wells and 5 fewer dry holes, but in new production there is a gain of 36 barrels. During the month the trade was busy pulling out old wells in the Trenton Rock end of the field, there being 106 abandoned and the pipe will be disposed of at good prices or utilized for the drilling of new wells. There is a great demand for second-hand pipe, owing to the excessive cost of new material.

In new work under way at the close of June there were one rig up and 21 wells drilling against 24 drilling wells and no rigs at the close of May. This is a net decrease in new work of only two, which is encouraging, as to heavy moving material throughout the producing sections.

Only one well of note was completed in the Indiana field during the month and that was a test drilled by T. F. Adams on his own farm, in section 21, Monroe township, Randolph county, and near Parker City. This well shows a production of 150 barrels a day and is the best find in the State for a long period. It will encourage further development work in the vicinity of the well and goes to show that there is still some prolific territory undrilled in the older fields on the eastern border of the State.

WASHINGTON COUNTY.

The Ohio Oil Co.'s wildcat well on the southeast corner of the J. W. Webb farm, section 15, Ohio township, Warrick county, and south of developments was dry hole at a depth of 1,450 feet, there being no showing of oil.

KNOX COUNTY.

In Washington township, Knox county, Bement and others drilled a dry hole in a test on the southeast corner of the Samuel Holland farm, section 30. The well was drilled through the pay sand at a depth of 1,252 feet.

VIGO COUNTY.

In Riley township, Vigo county, A. B. Bement's No. 7 on the Minnie McKinney farm, section 23, and 1,100 feet from the south line and 660 from the west line of the farm, pumped 25 bbls.

Riley—Wm. A. Clingerman, Bell Bros. & Barnes, 4..... drg

MIAMI COUNTY.

Only one completion is reported from the Indiana field and that is located in the Peru field, in Erie township, Miami county, and is the Jefferson Oil and Gas Co.'s No. 2 on the B. Harrison farm. This well like No. 1 pumped 10 barrels. The company is drilling a test on the D. M. Butt farm, section 19, also a test on the J. Tillet farm, section 23.

Erie—B. Harrison, Jefferson O. & G. 2..... 10

Erie—D. M. Butt, Jefferson O. & G. 1..... drg

J. Tillet, Jefferson O. & G. 1..... drg

Wells drilling..... 2

SUMMARY OF COMPLETED WORK.

	MARCH, '16			FEBRUARY, '16		
	Comp.	Prod.	Dry.	Comp.	Prod.	Dry.
Gibson.....	2	10	0	0	0	0
Pike.....	6	82	3	4	52	2
Sullivan.....	14	150	7	10	75	6
Vigo.....	3	50	1	2	45	0
Decatur.....	1	0	1	0	0	0
Miami.....	0	0	0	1	10	0
Total.....	26	292	13	17	182	8

Increase completed wells, 9.

Increase new production, 110 bbls.

Increase dry holes and gas wells, 5.

Abandoned, 24.

Average February, wells, 20 2-9 bbls.

Average March wells, 22 6-13 bbls.

SUMMARY OF COMPLETED WORK.

	APRIL, '16			MARCH, '16		
	Comp.	Prod.	Dry.	Comp.	Prod.	Dry.
Gibson.....	1	5	0	2	10	1
Pike.....	6	10	4	6	82	3
Sullivan.....	13	123	8	14	150	7
Vigo.....	0	0	0	3	50	1
Decatur.....	0	0	0	1	0	1
Miami.....	1	10	0	0	0	0
Warriek.....	1	0	1	0	0	0
Total.....	22	148	13	26	292	13

SUMMARY OF COMPLETED WORK.

	JUNE, '16			MAY, '16		
	Comp.	Prod.	Dry.	Comp.	Prod.	Dry.
Blackford.....	2	33	0	0	0	0
Randolph.....	3	150	2	0	0	0
Gibson.....	1	10	0	2	10	0
Pike.....	8	83	2	6	36	3
Sullivan.....	16	218	5	26	412	10
Vigo.....	1	30	0	1	30	0
Spencer.....	1	0	1	0	0	0
Miami.....	0	0	0	2	0	2
Total.....	32	524	10	37	488	15

Decrease completed wells, 5.

Increase new production, 36 bbls.

Decrease dry holes, 5.

Abandoned wells, 106

Average May wells, 22 2-11 bbls.

Average June wells, 23 9-11 bbls.

SUMMARY OF COMPLETED WORK.

	SEPTEMBER, '16			AUGUST, '16		
	Comp.	Prod.	Dry.	Comp.	Prod.	Dry.
Blackford.....	2	2	1	1	0	1
Jay.....	2	0	2	0	0	0
Grant.....	0	0	0	1	5	0
Gibson.....	4	60	1	3	13	1
Pike.....	6	255	1	6	80	2
Sullivan.....	6	209	1	10	119	3
Vigo.....	1	10	0	0	0	0
Total.....	21	536	6	21	217	7

Increase new production 319 bbls.

Decrease dry holes, 1.

Abandoned wells, 54.

Average August wells, 15½ bbls.

Average September wells, 35 11-15 bbls.

SUMMARY OF NEW WORK.

	SEPTEMBER, '16			AUGUST, '16		
	Rigs.	Drg.	Total	Rigs.	Drg.	Total.
Blackford.....	0	1	1	0	2	2
Jay.....	0	0	0	0	1	1
Delaware.....	0	2	2	0	1	1
Randolph.....	0	1	1	0	1	1
Gibson.....	1	1	2	0	4	4
Pike.....	3	7	10	3	7	10
Sullivan.....	0	3	3	0	5	5
Miami.....	0	2	2	0	2	2
Vigo.....	0	1	1	0	1	1
Total.....	4	18	22	3	24	27
Increase rigs, 1.						
Decrease drilling wells, 6.						
Net decrease new work, 5.						

On account of the high price of oil during the past year there has been a number of wild cat wells drilled in various parts of the state in search of some new and undiscovered pool of oil.

At Gentryville, in Spencer county, there were two dry holes drilled near some old wells, which, at the time of their drilling, made some gas and had a good showing of oil.

Two wells were drilled south of Hall, Morgan county, on the lands owned by the McCarty heirs. The first one was drilled to a depth of about 860 feet and had a showing of oil in the corniferous limestone. The well was shot but the shot did not increase the showing of oil.

The same company then drilled a well 2,000 feet north of the first well, in which Trenton rock was penetrated at 1,240 feet deep, but had no gas or oil.

A well was drilled about due south of Spencer in Owen county, near the county line, in which there was a good showing of oil at 800 feet, which was cased off, and the well was still drilling at the end of the year.

A very strong gas well was drilled in about eight miles northwest of Princeton, in Gibson county, at a depth of 1,300 feet. The volume and pressure of the well indicates a well developed anticline, and should be a lead to a new oil field.

A well is being drilled on the Fox farm northwest of Oaklandon in the hope of getting oil or gas. The well is located toward the western edge of old Trenton Rock Gas Field.

Six miles south of Veedersburg, in Fountain county, there were two dry holes drilled to a depth of about 900 feet, which were finished in the Huron group of sandstones and shales.

At Milan, in Ripley county, a well was drilled to a depth of about 1,300 feet. A good showing of gas was struck in the top of Trenton rock at about 800 feet, and, at present, preparations are being made to take care of the gas and also use the mineral water from the bottom of Trenton rock.

A test well is now being drilled about two miles north of Fort Ritner, in Lawrence county, in which gas was struck at about 250 feet. An anticline has been traced out in that part of Lawrence county, which extends in a southeasterly and northwesterly direction from the western edge of Heltonville southeasterly and crosses the B. & O. Southwestern railroad at what is locally known as the Big Tunnel, which is about two miles east of the town of Tunnelton. The present well is being drilled near the crest of the anticline. The prospects for oil or gas look very good along the crest and on the west slope of the anticlines. The axis of the anticline is paralleled on the east, by about one mile, by a fault, which is the only known fault in the state.

The formation existing in this part of the state is the Knobstone shale. The Corniferous limestone will be reached from 700 to 800 feet and Trenton rock should be from 1,600 to 1,700 feet deep.

Early in the year four gas wells were drilled about two miles south of the Jamison pool in Sullivan county which showed a volume of 1,500,000 cubic feet of gas, each with a rock pressure of 257 pounds. The wells are now connected to the Sullivan gas plant, which was formerly supplied by some light wells in the Jamison pool, which are at present exhausted.

The service of natural gas from Oakland City Oil Field to Winslow and Oakland City has been discontinued on account of the failing supply of gas.

The oil production of the state shows an increase over the 1915 production of 215,612 barrels, which is largely due to the new developments in Pike county and extension of the Sullivan county field.

The following table shows the production by counties:

County.	Wells.	Production.
Sullivan.....	625	750,000
Pike.....	301	162,489
Lima—Ind.....	2138	273,701
Davies.....	5	18,000
Vigo.....	17	59,400
Total.....		1,263,590

The gas laws of Indiana were enacted several years ago when oil and gas developments in the State were new and the science and geology in connection with the oil and gas was largely unknown. Consequently they are deficient in many respects, and in view of these facts I wish to call the attention of some of these defects to the coming legislature and those interested in the gas and oil business.

The law provides that all fresh water shall be cased off in gas and oil wells. The damage to oil and gas, resulting from water coming from near the surface and leaking into the hole, is due to the fact that it creates a pressure in the oil or gas-bearing rock, which causes an inflow of the water and drifts the oil or gas from the near vicinity of that hole and in time ruins the well. When the Indiana laws were written they assumed that it was only fresh water that would do this damage, but they later found out that the damage is not caused by the kind of water that gets into the rock, but it is the pressure it creates, from the fact the source is so high that it overcomes the upper pressure of the water or oil in the oil-bearing rock. The law should read that all water above the oil-bearing rock shall be cased off and kept cased off.

In case there are more than one oil or gas-bearing sand, and in drilling through one sand water is penetrated in a lower formation, which will rise in the hole higher than the water from the first sand, the damage done by the water to the upper sand is just the same as if it was gotten from stratum near the surface and should be cased off or plugged off so as to protect the first sand penetrated. In case of abandoning a well and plugging it, while our laws require the oil or gas-bearing rock to be plugged in a manner which is well described in the present laws, I would suggest that each sand be plugged in the same manner, separately, so as to be protected from each other.

In the event that oil or gas operations are in your coal area of the state, I would suggest that for the protection of the coal, that oil and gas operators be required to file a map showing the

exact locations of their wells, so that in future coal operations there may be left a block of coal in the mine surrounding the oil or gas drilling. Then, in addition to this, I would suggest that the well be plugged above and below the coal either with wooden plugs, or that the hole be concreted through the coal so as to prevent the water, gas or oil, from the oil and gas-bearing sands from getting into the coal.

For the benefit of future operations, there should also be filed at the Central office a log of all wells drilled, so that the geologist in charge may classify the formations and greatly benefit future developments. It will also be convenient in finding the proper place to insert the plugs in case of plugging the wells in the future.

I find that the fee of \$5.00 very often does not cover the expense that the deputy is put to in getting to and from a well if he has to spend very much time in plugging it, and there are very few deputies who are making a living out of plugging wells. The only ones who are making a salary sufficient to justify them to devote their time to the job are those who live in the parts of the state that were developed many years ago and which now are being abandoned very rapidly where they can plug wells after three or four strings of tools. I would suggest that the fee be raised from \$5.00 to \$10.00.

CANNELBURG OIL FIELD.

During the last two years the Lynn Oil and Gas Company have drilled in nine producing wells in sections 8 and 17, township 2 north, range 5 west, in Daviess county.

The wells were finished in the lower sand of the Huron group of sandstones and shales at about 725 feet and started off at about 40 barrels and have pumped down to where all the wells are making 50 barrels steady.

Through advice to this office the first well was drilled in the northwest quarter of section 17 near a gas well drilled in 1912 to a depth of 380 feet.