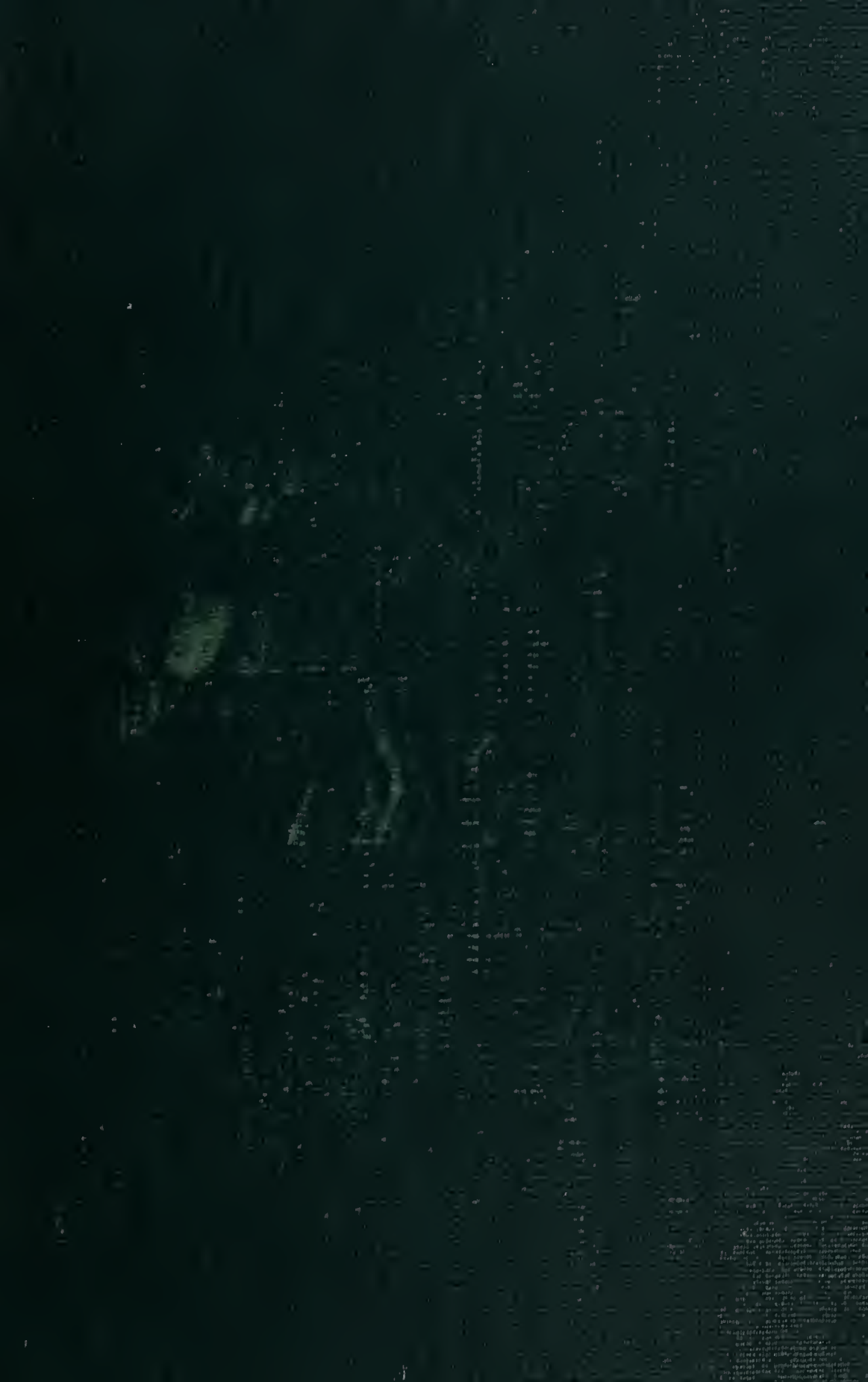

STATE OF ILLINOIS
DEPARTMENT OF REGISTRATION AND EDUCATION
A. M. SHELTON, *Director*

DIVISION OF THE
STATE GEOLOGICAL SURVEY
M. M. LEIGHTON, *Chief*

REPORT OF INVESTIGATIONS---NO. 1

FURTHER CONSIDERATION OF PROSPECTS FOR OIL IN THE DECATUR AREA

BY
D. M. COLLINGWOOD

PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

URBANA, ILLINOIS
1924

ILLINOIS STATE JOURNAL CO.
SPRINGFIELD, ILLINOIS
1924
19527—1500

FURTHER CONSIDERATION OF PROSPECTS FOR OIL IN THE DECATUR AREA

By D. M. Collingwood

OUTLINE

ILLUSTRATIONS

INTRODUCTION

Purpose of Report

A pamphlet entitled "Notes on Prospects in the Decatur Area" was published by the Illinois Geological Survey in March, 1922. Since that time, some additional drilling has been done in the area and accurate curb elevations of the tests for which there are records available have been obtained. These data now afford a somewhat more satisfactory basis on which to formulate correlations and interpret the local structure. Attention is called to the accompanying map (Pl. I) showing the suggested irregularities of the local structure which will indicate in advance of further drilling the locations of greater promise, so that any further exploratory drilling can be undertaken to test the existence of complete closure in the shallow horizons before undertaking the deep tests.

Data on Which Study Is Based

Copies of representative logs available for this area, including those published in the previously mentioned Press Bulletin, are grouped by counties in the appendix. On the map, Plate I, those borings for which records are included are shown by certain symbols accompanied by numbers designating corresponding logs in the appendix. Levels were run from points of known elevation on the railroads and from United States Geological Survey bench marks to obtain curb elevations of the drill holes.

GENERAL GEOLOGY

Geologic Section

For the convenience of the reader, the following generalized section of strata penetrated in the Decatur area is given. As shown in the section, the horizon that has given good shows of oil is encountered about 20 to 40 feet below the top of the Silurian ("Niagaran") limestone at a total depth of about 2000 feet.

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Loess and drift		
Pennsylvanian system		
McLeansboro, Carbondale, Pottsville ? ("Coal Measures")	870	870
Mississippian system		
Upper Mississippian sub-system		
Chester series	225	1095
Lower Mississippian sub-system (upper part—"Big Lime")		
Spergen, Osage, Kinderhook	725	1820
Sweetland Creek (chocolate shale)	165	1985
Devonian system	?	?
Silurian system (oil in upper part)		
Niagaran, Alexandrian	400	2385
Ordovician system		
Maquoketa	185	2570
Trenton	300+	2870+

Regional Structure

All of the formations with the exception of the Pennsylvanian and upper Mississippian rocks have nearly constant thickness in the holes that have gone to the Silurian in the immediate area. The Pennsylvanian rocks and to a lesser degree, the upper Mississippian strata, thicken basinward below the surface deposits, progressively towards the south and east, the direction of the regional dip.

In general, the dip of the shallow rocks in Illinois parallels that of the deeper ones, but in this area, due to pre-Chester deformation and the thickening and increase in number of formations to the south and east, the Pennsylvanian and Chester have somewhat less dip than the underlying rocks. Local disconformable irregularities masking the expression of true dip occur at the top and bottom of the Chester series as shown in figure 1. The same sort of situation holds true, although to a lesser degree, for the top and bottom of the Sweetland Creek shale. In the immediate vicinity of Decatur, the Chester seems to thicken slightly also towards the northeast along the regional strike of the rocks.

Local Structural Closures

Where local flexures are imposed on non-parallel strata conforming with the general basinward dip, the flexure of the folds may be sufficient to show some reversal or closure in the upper beds, while the lower ones may lack sufficient curvature to show anything more than a flattening of the regional dip. Furthermore, where the folding is sufficient to

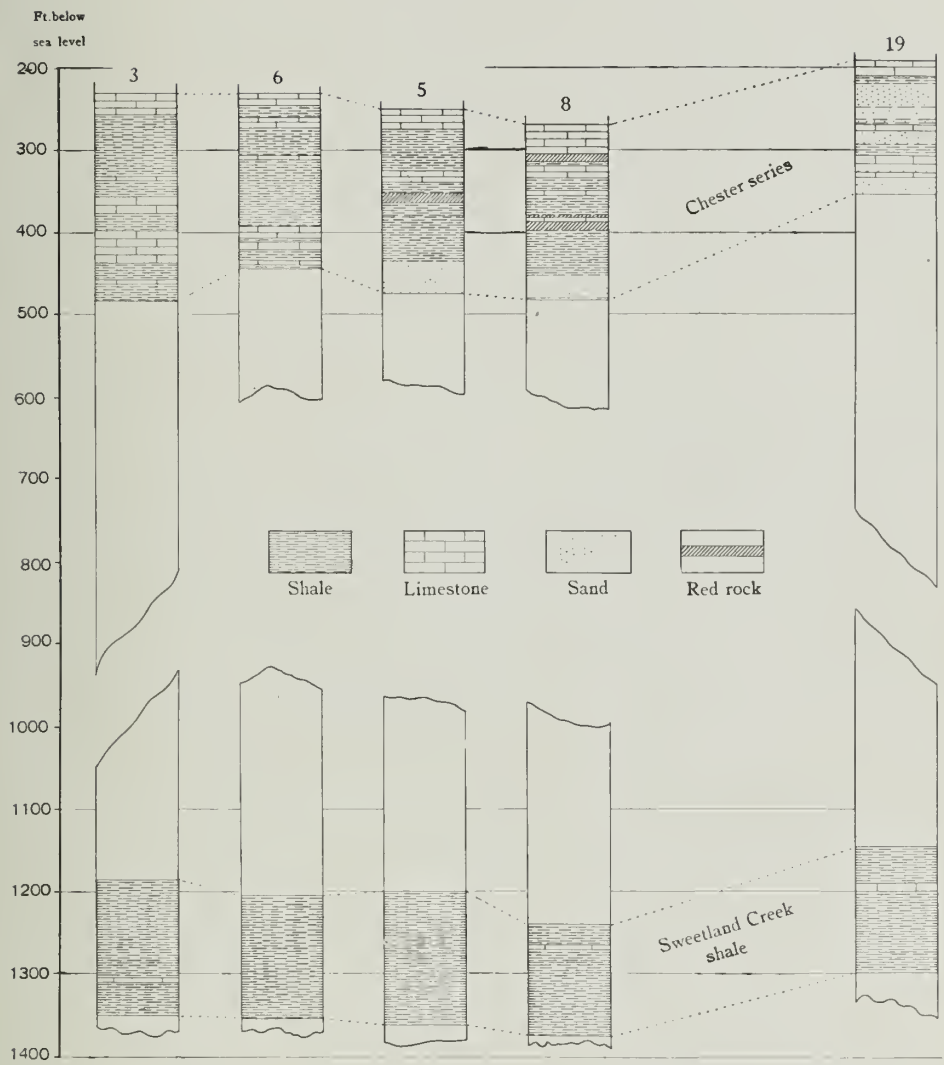

Figure 1. Cross section in the Decatur area to show local irregularities in contact surfaces between disconformable beds at the top and bottom of the Chester series and of the Sweetland Creek shale.

No. 3. Lincoln Oil and Gas Co., well No. 3, SE. ¼, SE. ¼, sec. 32, T. 17 N., R. 2 E.

No. 6. Lincoln Oil and Gas Co., well No. 2, SW. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

No. 5. Lincoln Oil and Gas Co., well No. 1, SE. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

No. 8. Atlantic Oil and Gas Co., Bledsoe farm, No. 1, SW. ¼, SE. ¼, sec. 5, T. 16 N., R. 2 E.

No. 19. Mt. Auburn Oil and Gas Co., well No. 2, NW. ¼, NW. ¼, sec. 25, T. 15 N., R. 2 W.

provide complete reversal in the dip of the lower beds, the crest of the doming will probably not be found directly below that of the upper beds, but slightly offset in the direction up the regional dip.

These points should be remembered in test drilling to considerable depth a structural dome or anticline which has been revealed by correlating shallow horizons. In the absence of sufficient records of deep drilling, structure contours drawn on a shallow key horizon are helpful in locating tests on favorable deep structures, although the latter may be modified in degree and position.

Stratigraphy

Few borings in the area have gone deeper than the Pennsylvanian system. The Pennsylvanian rocks directly underlying the glacial drift extend to a depth of about 900 or 1000 feet. In the absence of cores and thorough sampling, the most helpful guides in correlating logs of shallow test borings are the limestones, the coal beds and local red and black shales. The chief coal beds in their order of penetration, are Nos. 7, 6, and 5, which occur with vertical intervals of 25 to 150 feet and at a depth between 350 and 1050 feet, depending on location and surface elevation. Log No. 23 in sec. 1, T. 14 N., R. 2 W., listed in the appendix is a typical record of the coal tests in northern Christian County, and shows all three coals with the addition of a local coal between No. 6 and No. 5. Limestone cap rocks are locally associated with the No. 7 and No. 5 coals, but the most important and persistent limestone member associated with the coal seams is the fossiliferous limestone cap of No. 6 coal. There are two other main Pennsylvanian limestone horizons encountered. The one at 150 to 250 feet above No. 5 coal is associated with and often replaced by a thin bony coal formation, which is a good horizon marker, and another, probably the Carlinville and Shoal Creek limestone horizon is found at 250 to 400 feet above No. 5 coal. The Carlinville and Shoal Creek limestone horizon which generally comprises several beds separated by shale, is very persistent but is not such a good index of structure as either No. 5 or No. 6 coal because of its shallower position in the rock section and because generally some beds are unrecognized and therefore not accurately logged by drillers. Toward the south and east of the area mapped, another persistent limestone, probably equivalent to the Carthage or New Haven, is found about 250 feet above the Carlinville. Red shales lying between 30 and 70 feet above No. 6 coal in the Christian County area and about 50 to 100 feet above No. 6 coal in the Decatur area are also helpful locally in correlating drilling records.

LEGEND

- Churn drill dry hole
- Churn drill show of oil
- Diamond drill coal test
- Coal shaft
- Promising area for exploration

Isochore or convergence lines joining points of equal interval between No. 5 and No. 6 coals

Structure contours on No. 5 coal

R. 2 E. R. 3 E. R. 1 E. R. 4 E.

T. 18 N.

T. 17 N. R. 2 W. R. 1 W.

L O G A N

R. 3 W.

T. 16 N.

S A N G A M O N

M A C O N

P I A T T

T. 15 N.

S A N G A M O N

C H R I S T I A N

M O U L T R I E

S H E L B Y

T. 14 N.

T. 13 N.

T. 12 N.

R. 5 E. R. 4 E. R. 3 E. R. 2 E. R. 3 W. R. 2 W. R. 1 W. R. 1 E.

MARQA DECATUR MECHANICSBURG LOVINGTON ST. NINGTON MOWEAQUA TAYLORVILLE ASSUMPTION

WABASH RIVER

300 250 200 150 100 50 0 -50 -100 -150 -200 -250 -300 -350 -400 -450

Scale in miles

0 1 2 3 4 5 6

Structure map of Decatur and vicinity showing contours on No. 5 coal, with reference to sea level, with superimposed convergence (isochore) lines. Areas which are cross hatched show favorable structural areas for further exploration.

In the north part of Christian County, No. 6 coal is mined and can be traced easily towards Macon County by comparing a number of coal test records most of which note No. 7 and No. 6 coals, some of which are deep enough to show the local coal immediately below No. 6 and a few of which penetrate No. 5 coal. Then there is an area between the south line of Macon County and the city of Decatur in which records of the coals are scarce. In this area No. 6 coal is probably considerably thinner and may be absent.

In the Decatur area a coal which has been called No. 5 coal, the equivalent of the coal mined in the Springfield and Peoria regions, has been mined for a number of years. This coal is present east and southeast of Decatur, but is not recorded in the oil tests west and northwest of the city, with the exception of the boring in sec. 8, T. 16 N., R. 2 E. (Record No. 9, Macon County) in which two feet of coal believed to be No. 5 was reported.

In Christian County, notably in Tps. 13 and 14 N. and Rs. 1 and 2 W., a coal is found locally about 25 or 30 feet below No. 6. This has formerly been correlated as No. 5, and is probably the same coal that is mined at Moweaqua.[1] In the surrounding area, the interval between No. 6 and No. 5 appears to have a very definite relation to the regional structure. It is about 60 feet at Decatur and southwestward, at right angles to the direction of the dip of the rocks. The interval decreases up the dip towards Sangamon County, and increases basinward towards Moultrie and Shelby counties. Thus, the interval between No. 6 and No. 5 coals at Mechanicsburg is about 30 feet, and at Assumption it is about 130 feet. Isochore or convergence lines joining points of equal interval between No. 6 and No. 5 coal are shown on Plate I. From an examination of these isochore lines it is evident that a coal occurring only 25 to 30 feet below No. 6 in Tps. 13 and 14 N., Rs. 1 and 2 W. is probably not the true No. 5 coal, but must be an extra coal bed of local development.

POSSIBLE PETROLIFEROUS HORIZONS

Commercial quantities of oil and gas might be found in the shallower sands of the Pennsylvanian and Upper Mississippian (Chester) strata, should there be any distinct local doming, but the drilling of the numerous coal tests and other holes shown on the map has failed to show any oil in these shallower formations.

---

[1] Kay, Fred H., Coal resources of District VII, Ill. Mining Investigations Bull. 11, pp. 205, 215, 1915.

Below the Chester beds, the next possible oil horizons are above and below the dark chocolate Sweetland Creek shale at the base of the Mississippian. No oil has yet been discovered above the shale in this area, although the Carper sand recently found productive at this horizon in the Martinsville field of Clark County, Illinois, may be present locally. A very fine grained sandstone, which might be called a siltstone, lies about 400 to 500 feet above the top of the Sweetland Creek shale. Sand grains are also found in lesser amounts in the samples from the formation about 50 to 150 feet above the Sweetland Creek shale.

Indications of oil accumulation in this area have been obtained from the upper portion of the Silurian limestone which lies directly below the Sweetland Creek shale, and is commonly referred to as the "Niagara". Where the upper 20 feet of this formation has been penetrated in the Decatur area, it is a dense, white, hard, cherty limestone interbedded with some cream colored dolomitic strata. Considerable amounts of white to blue, translucent chert appear to be distributed irregularly through the dolomitic limestone beds as well as being interbedded with them. This upper portion of the dense white limestone has not proved oil bearing, but immediately below it, the limestone becomes more dolomitic and softer, although a large amount of chert is still present. Twenty-five feet of this formation showed oil in the No. 1 well of the Lincoln Oil and Gas Company (Record No. 5, Macon County). At a depth of approximately 60 feet in the limestone, the buff dolomitic beds give place to more uniform, gray dolomitic limestone with less chert in which oil shows have not been obtained. The Lincoln Oil and Gas Company No. 2 well (Record No. 6, Macon County) was drilled considerably deeper but no oil was found in the Silurian and only a trace reported in the upper portion of the Trenton. In the No. 3 well of the Lincoln Oil and Gas Company (Record No. 3, Macon County) oil showed at depths of 24 feet and 33 feet below the top of the Silurian limestone. The oil is contained apparently in the buff, slightly porous, dolomitic beds between 20 and 60 feet below the base of the Sweetland Creek shale. Dolomitic limestone is commonly porous due to the shrinkage in size of crystals resulting from the chemical replacement of calcium carbonate by the more dense magnesium carbonate.

The large amount of chert present as irregular masses, stringers and beds retards drilling. The chert has probably filled some of the intercrystalline interstices that result from dolomitization. Before the deposition of the overlying Sweetland Creek shale, the Silurian dolomitized limestone was subjected to erosion. During this time it is probable that solution cavities, some of them quite large, were formed by

percolating surface water. At the same time, possibly at slightly greater depth, some deposition from solution might have occurred, due to the mixing of waters or other causes, resulting in further cementation or filling of the small pore spaces caused by dolomitization.

In well No. 3 of Lincoln Oil and Gas Company a cavity containing no gas, oil, or water, and into which drilling water and cuttings disappeared was encountered at 2005 feet. Later, when the shot was being tamped, considerable water had to be run in to fill the cavity before the water rose in the hole. The existence of this cavity containing neither gas nor fluid seems to indicate a lack of continuity of the pores in this limestone. This is further borne out by the occurrence of oil and some water under slight pressure in the No. 1 well of the Lincoln Oil and Gas Company only a quarter of a mile distant. The latter also shows that fluid under pressure exists locally in some beds of this dolomitic limestone. Apparently the land surface was low and the percolation of surface waters extended only to a shallow depth, giving a narrow vertical range to the zone of solution cavities. Within the shallow zone, the porosity of the dolomitic beds has been modified and restricted by the irregular distribution of the chert and the character of the bedding planes.

IMPORTANCE OF SAMPLING FORMATIONS AND WATERS

Very little bottom water is found with the oil in Well No. 1 of the Lincoln Oil and Gas Company, but there is sufficient pressure to bring the fluid in the casing to the surface. The presence of water under pressure in the Silurian limestone and a general similarity to the chemical character of water commonly associated with oil, would probably serve as good criteria in prospecting for local accumulations of oil on possible favorable structures. It is recommended that in the future, operators in this area sample all waters encountered, including water produced with the oil. The State Geological Survey is willing to supply the containers for these samples for use in connection with a state-wide study of oil-field waters, from which it is hoped much benefit will result to the operators regarding various oil-field exploration and operation problems.

CHARACTER OF THE OIL

The oil in the No. 1 well of the Lincoln Oil and Gas Company (Record No. 5, Macon County) is of a good "live" quality, and is reported as testing 39.5° Baumé. The amount showing when the well was shot was indicative of a well that would make a few barrels initial

production, but it was not considered economical to pump it alone at a depth of 2000 feet. It was tubed and left to stand after the pump had sanded up during an attempt to make a pumping test on the beam. In this condition, the fluid has been under sufficient pressure to fill the casing and when the valve on the casing head is opened, a flow of oil is obtained for a short time. This has been used in small quantities by local farmers.

DETAILED STRUCTURAL CONSIDERATIONS AND RECOMMENDATIONS FOR FUTURE PROSPECTING

Introduction

The structure contours on Plate I are drawn on the top of No. 5 coal which is the best representative horizon to correlate the records of test holes and mine shafts in the Decatur area with those in northern Christian County. The elevations given are based on sea level datum. Values for the altitude of No. 5 coal[2] in those borings in Christian and Moultrie counties that have not gone deep enough to penetrate the horizon of that coal have been obtained from that of No. 6 coal by means of the interpolated interval from the nearest isochore line (Pl. I).

As shown by the structure contours on the map, the regional dip is to the southeast. Any slight local dip to the north and west indicates the presence of some local folding. Such folding of the strata would be favorable for the accumulation of oil in petroliferous beds, only if complete local reversal of dip is present.

Areas of Possible Local Doming

There are four localities where such irregularities in the regional dip appear to exist, and are shown on Plate I by shading. One is northwest of Decatur—northwest, north and east of the recent deep drilling in sec. 32, T. 17 N., R. 2 E. (Record No. 3, Macon County) and sec. 5, T. 16 N., R. 2 E. (Record Nos. 5 and 6, Macon County). Another is situated in T. 13 N., R. 1 W. Two others of minor importance are located in T. 13 N., R. 3 W., and T. 12 N., R. 3 W.

In further testing of these anticlinal noses that are shown up so definitely in the shallow Pennsylvanian beds, it is advisable to determine

---

[2] For previous identification of No. 5 coal, see the following references:
Kay, Fred H., Coal resources of District VII: Ill. Mining Investigations Bull. 11, p. 68, 1915.
Cady, G. H., Coal resources of District IV: Ill. Mining Investigations Bull. 26, p. 140, 1921.

the existence of complete closure in the shallow horizons before the deeper horizons are tested.

THE DECATUR AREA

GENERAL DESCRIPTION

Of the four areas mentioned, the one at Decatur is of first importance, because good shows of oil have already been found in deep tests to the Silurian ("Niagara") limestone. The absence of No. 5 and No. 6 coals in the area probably indicates the existence of an elevated region in late Carbondale time and suggests shore conditions at the edge of the basin in which No. 5 coal was deposited to the east, south, and west. Some local folding causing this uplift in Pennsylvanian time is also indicated by correlating the recorded No. 5 coal south, southeast and northeast of Decatur with what appears to be its equivalent horizon in the borings northwest of Decatur. An interval between the red shales overlying the horizon of No. 6 coal and one of the coals or its equivalent horizon traceable as black shale has been used in determining the horizon of No. 5 coal. Based on these estimates, the contours show a local structurally high area from which the bedding of the strata dip northeast, southeast, and southwest. A dip to the northwest that would complete the closure in all directions has not been proved either in shallow or deep horizons but possibly may be present.

The four deep tests that have been drilled in this area, three by the Lincoln Oil and Gas Company and one by the Atlantic Oil and Gas Company, are aligned approximately in a north-south direction (Pl. I). From examination of the various formational contacts noted in the logs in the appendix and in the cross section (fig. 1), it will be seen that in well No. 2 of the Lincoln Oil and Gas Company (Record No. 6, Macon County) which is located slightly west of well No. 1 (Record No. 5, Macon County) the top and bottom of the Chester and the top of the "Niagara" are higher than in No. 1, while the top of the Sweetland Creek shale is a very little lower. The bottom of the Chester is markedly higher, but this is probably accentuated by a local high erosional area on the surface of the "Mississippian Lime" before the deposition of the Chester. It is not, therefore, altogether indicative of bedding structure, although in Illinois if such erosional highs are of relatively large extent, they may indicate some folding of the Mississippian beds prior to the deposition of the overlying formations. These considerations suggest the existence of a high local structure situated to the north and west of well No. 3 of the Lincoln Oil and Gas Company.

On the other hand, the following facts point to the existence of a high structure north and east of well No. 3. The top and bottom of the Chester formations and of the Sweetland Creek shale show a general southward dip of approximately 40 feet to the mile. This is a little greater than the average regional dip which is at a maximum in a direction somewhat east of southeast. Such a southward dip would imply a high local structure to the north or to the northeast of the test in sec. 32, T. 17 N., R. 2 E. (Record No. 3, Macon County). Additional evidence of a possible structural high area in this direction may be found in the trend of the lobe shown by the shallow contours and the fact that the top of the "Niagara" in Lincoln No. 3 is a little higher than in Lincoln No. 2 and is situated slightly northeast of it.

RECOMMENDATIONS FOR FUTURE DRILLING

Tests for production therefore in this area might be located a mile and a half to the north and slightly west of Lincoln No. 3 well, or about one mile to the east of Lincoln No. 3. However, deep tests should not be undertaken until closure to the northwest in the shallower horizons has been demonstrated. Further information from the test for structural closure will help to determine the best location for a production test.

OTHER POSSIBLE AREAS OF LOCAL DOMING

In the light of our present knowledge, the other local structures mentioned do not present as favorable possibilities as the Decatur structure. No shows of oil have been reported in association with them, but no tests on them have gone deeper than the Pennsylvanian with the exception of an oil test by the Palmer Oil Gas and Mineral Company in sec. 15, T. 12 N., R. 3 W. (Record No. 30, Christian County) which is situated on the edge of at least a structurally flattened area. The test stopped in the Mississippian "Big Lime". As shown on the map, an area immediately to the west of this test might prove productive if there is structural closure farther to the west.

A small area in T. 13 N., R. 3 W. shows a possibility of some closure in the Pennsylvanian strata. If this is also shown in horizons at greater depth, oil accumulation might be expected, but owing to the small area of the structure, closure at depth appears doubtful.

In the shaded area shown on Plate 1 in T. 13 N., R. 1 W., there is promise of the shallow structure being represented also at greater depth. If closure can be proved in shallow horizons, a deep test would be justified and probably should be located about the center of the shaded area.

The Mount Auburn Oil and Gas Company's test in sec. 25, T. 15 N., R. 2 W. (Boring No. 19, Christian County) apparently is situated near the axis of a plunging anticline but in a position where the plunge is steep. Along the axis to the north and particularly along the axis about 4 miles to the south where the presence of some flattening of the axis is indicated, would have been a better position for a decisive test. A slight show of oil was reported 10 and 20 feet below the top of the Silurian lime.

Lack of data prevents more detailed knowledge regarding the possibility of a local closure in the south ½ of T. 15 N., R. 2 E. and the northwest corner of T. 14 N., R. 2 E., but there is a suggestion of a structural terrace or at least a somewhat flattened interruption of the regional dip. A test (Boring No. 17) in sec. 30, T. 15 N., R. 2 E., and one (Boring No. 20) in sec. 3, T. 14 N., R. 2 E., Macon County, were drilled almost to the base of the Chester series. Salt water was found in the basal Pennsylvanian and Chester sandstones. This area would be of interest for further testing for favorable structural closure if the neighboring more pronounced structures prove productive.

CONCLUSIONS

Where structural irregularities in the shape of anticlinal noses suggest the possibility of some local complete closure, particularly as indicated by the four shaded areas on Plate I, it is recommended that tests with the diamond drill be undertaken to determine the presence and amount of total closure in a suitable shallow key horizon before incurring the expense of a deep hole to the Silurian ("Niagara") dolomitic limestone horizon. The coals of the Pennsylvanian serve as a fair index for structure determination, and have shallow depth in their favor, but although the contact between the base of the Chester series and the "Big Lime" of the Mississippian is considerably deeper and locally unconformable, it is probably a more reliable index of the structural parallelism of the deeper formations.

Tests to the surface of the Mississippian "Big Lime" would provide three key horizons for correlation purposes—some coal or limestone in the Pennsylvanian, the top of the Chester and the top of the Mississippian "Big Lime." Although two of these are unconformable, it is believed that they will indicate accurately enough the presence of any structural closure sufficient to warrant drilling to the deeper horizons for production.

APPENDIX—REPRESENTATIVE LOGS

CHRISTIAN COUNTY

No. 19

Mt. Auburn Oil and Gas Co.—No. 2

C. Montgomery farm

NW. ¼, NW. ¼, sec. 25, T. 15 N., R. 2 W.

Curb elevation—607.8 feet

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Soil, sand and gravel	128	128
Pennsylvanian system		
Shale, white	207	345
Coal	4	349
Shale, white	46	395
Lime, white	5	400
Horizon of No. 5 coal		
Slate (set 10-inch casing)	100	500
Lime, white	15	515
Shale, brown	25	540
Shale, white	160	620
Sand (hole filled with water)	80	700
Slate, black	65	765
Slate, black (set 8¼-inch casing)	35	800
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Lime, dark	15	815
Lime, white	5	820
Slate, white	10	830
Sand (hole filled with water)	25	855
Shale, green	3	858
Sand	4	862
Slate, white	4	866
Sand	3	869
Slate, green (set 6⅝-inch casing)	3	872
Lime, white	7	881
Sand	16	907
Slate, white	8	915
Pyrites of iron	5	920
Lime, brown	10	930
Sand	10	940
Lime	5	945
Sand	20	965
Lower Mississippian sub-system		
Lime	385	1350
Shale, white	13	1363
(under-reamed; set 6⅝-inch casing)		
Shale, blue	147	1510
Lime, gray	30	1540
Lime, white (one bailer of water per hour)	5	1545
Lime, white	35	1580
Lime, white (one bailer of water per hour)	5	1585
Lime, white	35	1620
Lime, gray	10	1630
Lime, green	3	1633
Lime, gray	27	1660
Lime, pink	5	1665
Lime, gray	35	1700
Lime, green	15	1715
Slate, green	5	1720
Lime, white	2	1722
Rock red	13	1735
Lime, brown	20	1755
Sweetland Creek shale		
Shale, blue	45	1800
Lime, brown	10	1810
Shale, brown	100	1910
Silurian system		
Lime, brown	116	2026

From 1910 to 2000 feet, sand was noticeable in lime. At 1920 to 1930 more sand was shown and also a show of oil. No trace of gas any place in hole. Well abandoned at 2026 feet.

No. 21

Byrd-Willey

Cen. E. line, SE. ¼, NW. ¼, see. 24, T. 14 N., R. 1 W.

Curb elevation—607 feet

	Thickness *Ft. in.*	Depth *Ft. in.*
Pleistocene system		
Clay	30 ...	30 ..
Clay and gravel	60 ...	90 ..
Clay and gravel	54 ...	144 ..
Pennsylvanian system		
Soft shale	2 ...	146 ..
Slate	7 ...	153 ..
Sandstone	4 ...	157 ..
Slate	2 ...	159 ..
Gray shale	7 ...	166 ..
Gray shale	9 ...	175 ..
Dark shale	3 ...	178 ..
Fire clay	6 ...	184 ..
Gray shale	9 ...	193 ..
Dark shale	5 ...	198 ..
Limestone	6 ...	204 ..
Gray shale	7 ...	211 ..
Dark shale	5 ...	216 ..
Dark shale	8 ...	224 ..
Gray shale	3 ...	227 ..

No. 21—*Concluded*

Dark shale	4	...	231	..
Gray shale	8	...	239	..
Dark shale	11	...	250	..
Gray shale	14	...	264	..
Dark shale	8	...	272	..
Gray shale	14	...	286	..
Dark shale	6	...	292	..
Dark shale	6	...	298	..
Gray shale	15	...	313	..
Gray shale	7	...	320	..
Dark shale	6	...	326	..
Gray shale	11	...	337	..
Dark shale	2	8	339	8
Coal	1	2	340	10
Gray shale	1	2	342	..
Gray shale	6	...	348	..
Sandstone	2	...	350	..
Dark shale	6	...	356	..
Gray shale	10	...	366	..
Dark shale	32	...	392	..
Gray shale	21	...	419	..
Dark shale	13	...	432	..
Dark tough shale	23	...	455	..
Gray shale	11	...	466	..
Gray shale	8	...	474	..
Black shale	1	2	475	2
Coal	1	10	477	..
Blue shale	2	...	479	..
Gray shale	3	3	482	3
Coal	1	6	483	9
Limestone	5	9	489	..
Sandstone	4	...	493	..
Gray shale	11	...	504	..
Blue limestone	8	...	512	..
Black shale	2	4	514	4
Coal (No. 6)	2	10	517	2
Shale band	3	...	517	5
Coal (No. 6)	3	6	520	11
Soft dark shale	..	1½	521	½
Coal (No. 6)	1	1½	522	2
Sulphur band		1	522	3
Coal (No. 6)	1	10	524	1
Fire clay	4	11	529	..
Dark shale	3	...	532	..
Gray shale	7	...	539	..

No. 22

Stonington Well

NE. ¼, SE. ¼, sec. 28, T. 14 N., R. 1 W.

Curb elevation—613 feet

	Thickness		Depth	
	Ft.	*in.*	*Ft.*	*in.*
Pleistocene system				
Soil	3	...	3	..
Clay, yellow	4	...	7	..
Clay, dark	6	...	13	..
Sand, gray	5	...	18	..
Gravel	3	...	21	..
Clay	3	...	24	..
Sand and gravel	10	...	34	..
Gravel	2	...	36	..
Clay, yellow	16	...	52	..
Clay, yellow	5	...	57	..
Sand, fine	5	...	62	..
Sandy clay	14	...	76	..
Clay and gravel	6	...	82	..
Gravel	3	...	85	..
Clay, blue	35	...	120	..
Clay, blue	24	...	144	..
Sand, fine	1	...	145	..
Sand	16	...	161	..
Sand and gravel	2	...	163	..
Pennsylvanian system				
Lime, soft, shale	10	...	173	..
Shale, blue	7	...	180	..
Limestone	7	...	187	..
Limestone	3	...	190	..
Shale, blue	21	6	211	6
Limestone	4	6	216	..
Shale, blue sandy	10	...	226	..
Lime	..	8	226	8
Shale, black	2	2	228	10
Coal	..	4	229	2
Shale, soft, green	5	6	234	8
Lime, shale	9	...	243	8
Shale, blue	4	8	248	4
Shale, black	4	...	252	4
Shale, blue, sandy	10	...	262	4
Sandstone	2	...	264	4
Shale, blue, sandy	21	...	285	..
Shale, blue, sandy	27	...	312	4
Shale, dark blue	8	8	321	..
Shale, black	..	4	321	4
Coal	1	3	322	7
Shale, blue	2	9	325	4
Shale, blue	3	...	328	4
Sandstone	7	...	335	4
Shale, blue	7	...	342	4
Shale, blue	28	...	370	4
Blue slate with brown sulphur	43	...	413	4
Sand shale with 2 inches of coal	1	3	414	7
Fire clay	4	...	418	7
Shale, black	15	9	434	4
Limestone	3	6	437	10
Limestone	3	6	441	4
Shale, black	8	6	449	10
Fire clay	2	...	451	10
Shale, black	5	...	452	3
Coal	6	...	452	9
Shale and limestone	14	...	466	9
Limestone	5	7	472	4
Shale or clod	..	7	472	11
Coal (No. 6)	7	5	480	4
Fire clay	3	6	483	10
Lime shale	9	6	493	4
Limestone	1	6	494	10
Slate, black	3	...	497	10

No. 22—*Concluded*

Coal	4	2	502	..
Blue shale clay	..	10	502	10
Fire clay	2	...	504	10
Limestone	5	4	510	2
Lime shale	8	8	518	10
Sand shale	2	...	520	10
Sandstone	4	...	524	10
Sand shale, blue	15	...	539	10
Sand shale, blue	8	...	547	10
Sand shale, blue	10	...	557	10
Slate	8	1	565	11
Coal (No. 5)	2	7	568	6
Fire clay	3	4	571	10
Sand shale, blue	6	...	577	10
Shale, sandy	4	...	581	10
Blue shale	11	7	593	5

No. 23

Taylor and Byrd—No. 6

NW. cor. SW. ¼, NW. ¼, sec. 1, T. 14 N., R. 2 W.

Curb elevation—567.3 feet

	Thickness		Depth	
	Ft.	*in.*	*Ft.*	*in.*
Pleistocene system				
Soil	3	...	3	..
Clay, blue	12	...	15	..
Sand	3	...	18	..
Gravel, fine	10	...	28	..
Gravel	12	..	40	..
Clay, blue, mixed gravel	7	...	47	..
Pennsylvanian system				
Shale, gray, sandstone partings	5	...	52	..
Shale, soft, gray, sandstone partings	5	...	57	..
Shale, soft, gray	7	6	64	6
Coal	1	...	65	6
Limestone, broken	14	...	81	..
Slate, dark	4	...	85	..
Shale, soft, sticky, gray	2	...	87	..
Limestone	2	...	89	..
Shale, dark	3	...	92	..
Lime shale	10	...	102	..
Shale, soft, sticky, gray	8	...	110	..
Shale, gray	16	...	126	..
Shale, sandy	10	...	136	..
Shale, gray	49	11	185	11
Coal	1	4	187	3
Shale, sandy, gray	23	9	211	..
Shale, sandy	19	...	230	..
Shale, gray	39	...	269	..
Shale, blue, brown sandstone	20	...	289	..
Limestone	4	...	293	..
Shale, dark	7	...	300	..
Slate, dark	1	...	301	..
Shale, very soft, gray	3	...	304	..
Shale, gray, red streaks	2	...	306	..
Limestone, hard	2	...	308	..
Shale, yellow	3	...	311	..
Shale, dark	6	...	317	..
Limestone, hard	9	...	326	..
Shale, dark	7	2	333	2
Coal	1	10	336	..
Shale, gray	2	...	338	..
Lime shale	15	...	353	..
Lime shale, gray	7	6	360	6
Limestone, hard	1	...	361	6
Slate, black	1	...	362	6
Limestone	1	...	363	6
Slate, black	..	4	363	10
Limestone	..	2	364	..
Coal (No. 6)	5	2	369	2
Fire clay	..	10	370	..
Shale, gray	18	...	388	..
Lime shale	4	...	392	..
Shale, gray, brown bands	21	...	413	..
Slate, black	7	3	420	3
Coal (No. 5)	2	6	422	9
Fire clay	..	3	423	..
Lime shale	9	6	432	6
Coal	..	6	433	..
Shale, dark	1	...	434	..
Coal	..	4	434	4
Shale, dark	6	8	441	..
Coal	..	4	441	4
Shale, dark	2	8	444	..
Shale, gray	15	...	459	..
Sandstone	2	...	461	..
Shale, gray	2	...	463	..
Shale, blue	26	...	489	..
Slate, dark	5	...	494	..
Coal	1	7	495	7
Limestone	1	5	497	..
Shale, dark	5	8	502	8
Coal	2	...	504	8
Shale, dark	9	4	514	..
Lime shale	8	...	522	..
Shale, gray	5	...	527	..
Slate, black	5	10	532	10
Coal	2	...	534	10
Shale, dark	4	2	539	..
Shale, gray	4	...	543	..
Sandstone	1	...	544	..
Shale, dark	4	8	548	8
Coal	2	...	550	8
Lime shale	3	4	554	..
Shale, dark	13	...	567	..
Sandstone	1	...	568	..
Shale, dark	1	...	569	..
Lime shale	4	8	575	8
Coal	1	10	575	6
Lime shale	..	6	576	..

No. 23—*Concluded*

Shale, gray ..... 1 ...	577 ..	
Sandstone ..... 4 ...	581 ..	
Shale, dark .....11 ...	592 ..	
Shale, sandy .....20 ...	612 ..	
Shale, dark .....14 ...	626 ..	
Shale, sandstone parting .....20 ...	645 ..	
Shale, dark ..... 7 ...	653 ..	
Sandstone ..... 3 ...	656 ..	
Shale, dark .....12 ...	668 ..	
Shale, sandy .....18 ...	686 ..	
Sandstone .....21 ...	707 ..	
Shale, dark, brown bands .....12 ...	719 ..	
Shale, dark .....35 ...	754 ..	
Sandstone, shale parting .....17 ...	771 ..	
Lime shale, soft..... 2 ...	773 ..	
Conglomerate ..... 4 ...	777 ..	
Mississipian system		
Upper Mississippian sub-system		
Chester series		
Lime shale, soft..... 9 ...	786 ..	
Lime shale .....14 ...	800 ..	
Limestone, hard ..... 1 ...	801 ..	
Sandstone, hard ..... 5 ...	806 ..	
Sandstone, hard, shale parting .....29 ...	835 ..	
Lime shale ..... 2 ...	837 ..	
Limestone ..... 9 ...	846 ..	
Sandstone ..... 8 ...	854 ..	
Sandstone, very coarse-grained .....18 ...	873 ..	
Limestone ..... 3 ...	876 ..	

No. 24

Byrd-Willey—No. 15

Cen. N. line NW. ¼, NW. ¼, sec. 16, T. 1½ N., R. 2 W.

Curb elevation—585.1 feet

	Thickness Ft. in.	Depth Ft. in.
Pleistocene system		
Soil ..... 4 ...	4 ...	
Clay, yellow ..... 8 ...	12 ...	
Clay, blue ..... 6 ...	18 ...	
Clay, blue, fine gravel 7 ...	25 ...	
Sand ..... 5 ...	30 ...	
Gravel ..... 5 ...	35 ...	
Clay, yellow, fine gravel .....63 ...	98 ...	
Gravel ..... 2 ...	100 ...	
Clay, blue ..... 5 ...	105 ...	
Pennsylvanian system		
Shale, dark ..... 7 ...	112 ...	
Limestone ..... 1 ...	113 ...	
Shale, gray .....11 ...	124 ...	
Shale, soft, gray.... 6 ...	130 ...	
Limestone, very hard 6 ...	136 ...	
Slate, dark ..... 4 ...	140 ...	
Shale, very soft, gray 4 ...	144 ...	
Shale, soft, gray.... 3 ...	147 ...	
Limestone ..... 5 ...	152 ...	
Shale, gray .....16 ...	168 ...	
Lime shale with hard bands ..... 9 ...	177 ...	
Lime shale ..... 4 ...	181 ...	
Shale, gray, brown bands .....23 ...	204 ...	
Shale, tough, dark..29 ...	233 ...	
Shale, gray ..... 6 ...	239 ...	
Coal 1 5	240 5	
Shale, very soft, gray 3 7	244 ...	
Shale, sandy .....16 ...	260 ...	
Shale, sandy, gray...40 ...	300 ...	
Shale, tough, gray...10 ...	310 ...	
Shale, sandy ..... 9 ...	319 ...	
Shale, tough, dark..24 ...	343 ...	
Shale, gray .....16 ...	359 ...	
Shale, very soft, gray, and red..... 7 ...	366 ...	
Shale, blue 6 9	372 9	
Limestone 4 2	376 11	
Shale, gray 6 8	383 7	
Coal (No. 7)..... 4 11	388 6	
Fire clay 6	389 ...	
Shale, very soft, gray ..... 4 ...	393 ...	
Limestone, hard ... 1 ...	394 ...	
Shale, dark ..... 4 ...	398 ...	
Shale, gray .....11 ...	409 ...	
Shale, dark ..... 5 ...	414 ...	
Slate, black 2 8	416 8	
Coal (No. 6)..... 5 7½	422 3½	
Shale, gray 1 8½	424 ...	
Sandstone ..... 4 ...	428 ...	
Limestone ..... 7 ...	435 ..	
Shale, blue .....32 ...	467 ...	
Slate, black 7 7	475 7	
Coal (No. 5)..... 3 2	478 9	
Shale, gray 1 3	480 ...	

No. 25

Byrd-Willey—No. 16

SW. cor., SW. ¼, NW. ¼, sec. 20, T. 1½ N., R. 2 W.

Curb elevation—585.8 feet

	Thickness Ft. in.	Depth Ft. in.
Pleistocene system		
Soil ..... 2 ...	2 ..	
Clay .....16 ...	18 ..	
Cement and gravel... 2 ...	20 ..	
Clay, blue gravelly...59 ...	79 ..	

No. 25—*Concluded*

Sand	4	6	83	6
Pennsylvanian system (Shoal Creek and Carlinville limestone from 114-175 feet)				
Shale, blue	..	6	84	..
Shale, soft blue	30	...	114	..
Shale, soft gray, lime.	6	...	120	..
Limestone	3	...	123	..
Shale, soft lime	4	...	127	..
Limestone	2	...	129	..
Lime shale	3	...	132	..
Limestone	7	...	139	..
Shale, dark	9	...	148	..
Lime shale	10	4	158	4
Limestone	5	8	164	..
Clay shale, soft	5	...	169	..
Lime shale pebbles	6	...	175	..
Sandstone	10	...	185	..
Shale, sandy	43	...	228	..
Shale, tough blue, with brown bands	15	...	243	..
Shale, dark	3	7	246	7
Coal, bony	..	3	246	10
Coal	1	2	248	..
Clay shale	3	...	251	..
Limestone	1	6	252	6
Shale, sandy	40	6	293	..
Shale, tough blue	6	...	299	..
Shale, tough blue, brown bands	41	...	340	..
Lime shale	7	...	347	..
Shale, soft gray and red	8	...	355	..
Shale, sandy	12	...	367	..
Limestone	3	6	370	6
Shale, black	2	...	372	..
Shale, dark	5	9	378	3
Coal	1	9	380	..
Coal, bony	..	5	380	5
Coal	1	...	381	5
Shale, blue	4	2	385	7
Limestone	4	11	390	6
Shale, gray	..	6	391	..
Limestone	1	...	392	..
Lime shale	3	4	395	4
Limestone	5	7	400	11
Shale, black	..	1	401	..
Coal (No. 6)	3	5	404	5
Shale	..	1	404	6
Coal	..	9	405	3
Fire clay	..	9	406	..
Clay shale	1	...	407	..
Limestone	4	...	411	..
Lime shale, lime bands	12	...	423	..
Shale, blue, brown bands	2	...	425	..
Shale, tough, blue	..	5	425	5
Limestone	..	7	426	..
Shale, black	2	9	428	9
Coal, bony	..	3	429	..
Coal	4	9	433	9
Fire clay	..	3	434	..
Shale, blue	1	...	435	..

No. 27

Byrd-Willey—No. 10

NW. ¼, SE. ¼, NE. ¼, sec. 12, T. 13 N., R. 1 W.

Curb elevation—573 feet

	Thickness		Depth	
	Ft.	*in.*	*Ft.*	*in.*
Pleistocene system				
Clay	11	...	11	..
Sand	22	...	33	..
Clay and loose rock	32	...	65	..
Pennsylvanian system				
Shale, black	1	6	66	6
Coal	..	6	67	..
Shale, light	15	...	88	..
Shale, sandy	23	...	105	..
Sandstone	4	...	109	..
Sand shale	7	...	116	..
Sandstone	31	...	147	..
Shale, dark blue	6	...	153	..
Shale, soft	8	...	161	..
Shale, blue with a few limestone bands	10	...	171	..
Limestone	11	...	182	..
Shale, black	3	...	185	..
Shale, blue	8	...	193	..
Shale, dark	7	...	200	..
Shale, soft, light	4	...	204	..
Shale, light with limestone nodules	6	...	210	..
Shale, light sandy	6	...	216	..
Shale, tough blue	5	...	221	..
Shale, blue	4	6	225	6
Limestone	1	...	226	6
Shale, black	1	3	227	9
Coal, bony	..	6	228	3
Shale, soft	8	...	236	3
Sandstone, soft	2	6	238	9
Shale and sandstone mixed	7	...	245	9
Shale, blue	58	3	304	..
Shale, black	1	6	305	6
Coal, bony	..	6	306	..
Shale, sandy	4	...	310	..
Shale, soft	1	...	311	..
Shale, sandy	58	...	369	..
Shale, tough blue	12	...	381	..
Shale, blue	14	10	395	10
Coal, bony	..	2	396	..
Shale, soft	3	6	399	6
Limestone	..	6	400	..
Shale, soft light with limestone nodules	2	...	402	..
Shale, hard	6	...	408	..

No. 27—*Concluded*

Shale, soft light.....	3 6	411 6
Shale, black	2 ...	413 6
Shale, variegated	8 ...	421 6
Limestone and shale.	2 6	424 ..
Shale, light	4 ...	428 ..
Shale, variegated	8 2	436 2
Shale, dark	.. 10	437 ..
Shale, soft light.....	1 ...	438 ..
Shale, dark	.. 2	438 2
Coal	3 5	441 7
Shale, soft light.....	4 11	446 6
Shale, dark	.. 6	447 ..
Coal	.. 6	447 6
Shale, light	3 6	451 ..
Lime shale 14	...	465 ..
Limestone	2 6	467 6
Limestone, dark fossiliferous	2 11	470 5
Shale, dark	.. 2	470 7
Coal (No. 6).....	7 9	478 4
Shale, soft light.....	9 2	487 6
Shale, black	2 ...	489 6
Coal	4 6	494 ..
Shale, light	1 ...	495 ..

No. 28

Byrd-Willey—No. 13

NW. ¼, NW. ¼, SE. ¼, sec. 13, T. 13 N., R. 2 W.

Curb elevation—601 feet

	Thickness *Ft. in.*	Depth *Ft. in.*
Pleistocene system		
Clay 14	...	14 ...
Sand 8	...	22 ...
Clay and rocks.....11	...	33 ...
Sand, coarse 7	...	40 ...
Sand, fine 4	...	44 ...
Clay and sand.....37	...	81 ...
Sand 23	...	104 ...
Clay 17	...	121 ...
Sand 8	...	129 ...
Clay 7	...	136 ...
Sand 11	...	147 ...
Gravel 2	...	149 ...
Clay, sandy 2	...	151 ...
Loose boulders 1	6	152 6
Pennsylvanian system		
Sandstone 9	6	162 ...
Shale, blue 3	...	165 ...
Shale, soft light.....19	...	184 ...
Limestone (Carlinville) 9	6	193 6
Shale, light 1	...	194 6
Shale, black 2	6	197 ...
Shale, blue 15	...	212 ...
Shale, soft with hard lumps 7	...	219 ...
Limestone and shale mixed 6	...	225 ...
Shale, light 3	6	228 6
Limestone 4	...	232 6
Shale, black 1	6	234 ...
Shale, soft, light.... 6	...	240 ...
Lime shale 3	6	243 6
Shale, light 9	2	252 8
Coal	.. 10	253 6
Shale, light 1	6	255 ...
Shale, sandy 9	...	264 ...
Sandstone 9	...	273 ...
Shale, sandy 9	...	282 ...
Shale, blue 39	2	321 2
Coal 1	3	322 5
Shale, soft 1	7	324 ...
Shale, blue 4	...	328 ...
Shale, sandy 4	...	332 ...
Sandstone, soft with a few shale streaks.40	...	372 ...
Shale, blue 18	...	390 ...
Shale, tough, blue...29	...	419 ...
Coal	.. 3	419 3
Shale, soft 4	9	424 ...
Shale, tough, blue... 5	...	429 ...
Shale, soft 4	...	433 ...
Shale, dark 2	...	435 ...
Limestone, blue ...	.. 6	435 6
Shale, soft, variegated 10	6	446 ...
Shale, dark blue.... 2	7	448 7
Coal (No. 7).....	.. 7	449 2
Shale, dark	.. 10	450 ...
Lime shale 3	...	453 ...
Limestone 4	...	457 ...
Limestone and shale 2	...	459 ...
Sandstone 6	6	465 6
Limestone 1	6	467 ...
Shale, black 6	2	473 2
Coal (No. 6)..... 5	4	478 6
Sulphur band	.. ½	478 6½
Coal (No. 6).....	.. 6	479 ½
Blue band	.. 1¼	479 1¾
Coal (No. 6)..... 1	7	480 8¾
Sulphur band	.. ¼	480 9
Coal (No. 6).....	.. 4	481 1
Shale, light 7	11	489 ...
Shale, soft 4	...	493 ...
Limestone mixed with shale 7	...	500 ...
Shale, soft 4	...	504 ...
Shale, light 5	...	509 ...
Shale with sand streaks 5	...	514 ...
Shale, gray 6	...	520 ...
Shale, blue 34	...	554 ...
Blue rock, hard..... 1	...	555 ...
Shale, black 6	6	561 6
Limestone, blue ...	.. 11	562 5
Shale, black	.. 2	562 7

No. 28—*Concluded*

Coal (No. 5)	2 4	564 11
Shale, soft	4 1	569 ...
Shale with sand streaks	6 ...	575 ...
Shale, gray	17 ...	592 ...
Shale, black	4 ...	596 ...
Coal	1 ...	597 ...
Shale, blue	.. 6	597 6
Sandstone	5 ...	602 6
Shale, blue	26 6	629 ...
Shale, soft	7 ...	636 ...
Shale, dark	1 ...	637 ...
Coal	1 3	638 3
Shale parting	.. 3	638 6
Coal	1 2	639 8
Shale, soft	1 10	641 6
Sandstone	7 ...	648 6
Shale, sandy	8 6	657 ...
Shale, blue	8 ...	665 ...
Shale, black	3 8	668 8
Coal	1 2	669 10
Shale, light sandy	1 2	671 ...
Shale, light	6 ...	677 ...
Shale, sandy	4 ...	681 ...
Sandstone	4 6	685 6
Shale, blue	1 ...	686 6
Coal, bony	.. 4	686 10
Shale, soft	3 2	690 ...
Shale, light	2 ...	692 ...
Shale, dark	2 5	694 5
Coal	.. 5	694 10
Shale, dark	1 2	696 ...
Shale, soft	5 ...	701 ...
Limestone	2 9	703 9
Coal	.. 7	704 4
Shale, blue	15 2	719 6
Shale, black	2 ...	721 6
Shale, gray	.. 4 6	726 ...
Shale, blue	2 ...	728 ...
Shale, dark blue	9 3	737 3
Coal (No. 2)	2 4	739 7
Sandstone, soft	17 5	757 ...
Shale, light	3 ...	760 ...
Shale, dark	2 ...	762 ...
Shale, blue with sandstone streaks	36 ...	798 ...
Sandstone	34 ...	832 ...
Sandstone and shale mixed	15 ...	847 ...
Shale, blue with sand streaks	19 ...	866 ...
Sandstone and shale mixed	23 ...	889 ...
Sandstone	4 ...	893 ...
Shale, dark blue	27 ...	919 ...
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Limestone	31 ...	950 ...

No. 29

Well near Clarksdale

~~NE~~ NW SE ¼, *sec. 13, T. 12 N., R. 3 W.*

Curb elevation—620+ feet

	Thickness Ft.	Thickness in.	Depth Ft.	Depth in.
Pleistocene system				
Clay, yellow	19	...	19	..
Clay	29	...	66	..
Clay, yellow	12	...	78	..
Clay, blue	11	...	89	..
Gravel and clay	2	...	91	..
Gravel and clay	1	...	92	..
Pennsylvanian system				
Clay shale	2	...	94	..
Shale, blue	14	...	108	..
Shale, blue	14	...	122	..
Limestone	2	...	124	..
Shale, blue	5	...	129	..
Limestone	11	...	140	..
Shale, gray	1	...	141	..
Shale, blue	1	...	142	..
Shale, gray	4	...	146	..
Shale, blue	12	...	158	..
Shale, blue	2	...	160	..
Shale with limestone bands	4	...	164	..
Shale, sandy	13	...	177	..
Shale, black	1	...	178	..
Shale with limestone bands	12	...	190	..
Sandy shale	27	...	217	..
Sandstone	28	...	245	..
Sandstone	23	...	268	..
Sandstone	38	...	306	..
Shale, sandy	24	...	330	..
Shale, sandy	17	...	347	..
Shale, sandy	19	...	366	..
Shale, blue	14	...	380	..
Shale, blue	6	...	386	..
Shale, dark blue	2	...	388	..
Shale, sandy	11	...	399	..
Shale, sandy	18	...	417	..
Shale, sandy	16	...	433	..
Shale, blue	3	...	436	..
Shale, blue	1	8	437	8
Conglomerate	..	9	438	5
Shale, dark blue	7	...	445	5
Shale, blue	2	...	447	5
Shale, dark blue	..	7	448	..
Shale, dark blue	2	...	450	..
Limestone, shale partings	..	1	451	?
Shale, sandy	13	...	464	..
Shale, light blue	2	...	466	..
Shale, light blue	11	...	477	..
Shale, light blue	5	7	481	7
Coal (No. 5)	2	4	483	11

No. 29—*Continued*

Shale, light blue..... 6 1	490 ..	
Shale with streaks of limestone 6	497 ?	
Shale, black ..... 2 ...	499 ..	
Shale, blue .....15 ...	514 ..	
Shale, blue ..... 1 ...	515 ..	
Shale, sandy ..... 2 ...	517 ..	
Shale with limestone bands ..... 4 ...	521 ..	
Shale, blue .....16 ...	537 ..	
Shale, sandy ..... 2 ...	539 .	
Shale, sandy ..... 3 ...	542 ..	
Shale, black ..... 7 ...	549 ..	
Shale, black ..... 7 ...	555 ?	
Shale, blue ..... 2 ...	557 ..	
Shale, sandy ..... 1 ...	558 ..	
Shale ..... 8 ...	567 ..	
Shale, dark blue, sandy .....13 ...	580 ..	
Sandstone 3 6	583 6	
Shale, dark blue..... .. 6	584 ..	
Shale, sandy .....17 ...	601 ..	
Shale, blue ..... 9 ...	610 ..	
Shale, dark blue..... 5 ...	615 ..	
Coal 1 6	616 6	
Coal 8	617 2	
Limestone 8	617 10	
Shale, blue 6	618 4	
Sandstone 1 6	619 10	
Shale, blue, sandstone bands 3 2	623 ..	
Shale, blue, sandstone bands 2 7	625 7	
Coal 5	626 ..	
Coal 1 2	627 ? 2	
Shale, soft 2 4	629 6	
Sandstone .....10 ...	639 6	
Shale, sandy 3 6	643 ..	
Shale, sandy ..... 6 ...	649 ..	
Shale, blue with lime bands ..... 3 ...	652 ..	
Shale, dark blue..... 1 10	653 10	
Coal 6	654 4	
Coal 10	655 2	
Fire clay 1 4	656 6	
Sandstone 6 6	663 ..	
Sandstone, shale partings ..... 2 ...	665 ..	
Sandstone ..... 5 ...	670 ..	
Shale, sandy ..... 4 ...	674 ..	
Shale, blue with bands 7 ...	681 ..	
Shale, blue ..... 8 ...	689 ..	
Slate, dark blue, coal partings ..... 1 ...	690 ..	
Same 6	690 6	
Shale, blue 2 6	693 ..	
Shale, soft ..... 1 ...	694 ..	
Sandstone 8	694 8	
Shale, blue, soft..... 1 10	696 6	
Band coal 6	697 ..	
Coal 1 9	698 9	
Shale, blue 9	699 6	
Sandstone ..... 4 ...	703 6	
Shale with sandstone partings 5 6	709 ..	
Sandstone 1 6	710 6	
Shale, blue, sandstone partings 7 8	718 2	
Coal and shale mixed .. 7	718 9	
Coal 3	719 ..	
Coal 2 9	721 9	
Shale, light blue..... 5 3	727 ..	
Shale, sandy, sandstone bands .....18 ...	745 ..	
Shale, sandy, sandstone bands .....13 ...	758 ..	
Shale with sandstone bands 6 6	764 6	
Sandstone, soft 2 1	766 7	
Coal 5	767 ..	
Coal 9	767 9	
Sandstone ..... 1 ...	768 9	
Sandstone, shale, sandstone bands 7 3	776 ..	
Sandstone, shale partings ..... 6 ...	782 ..	
Sandstone, shale partings ..... 4 ...	786 ..	
Shale, sandstone partings ..... 7 ...	793 ..	
Shale, dark blue .... 9 ...	802 ..	
Shale, blue 13 6	815 6	
Sandstone 6	816 ..	
Shale, blue ..... 4 ...	820 ..	
Shale with sandstone partings ..... 3 ...	823 ..	
Shale, blue ..... 4 ...	827 ..	
Sandstone ..... 1 ...	828 ..	
Shale, blue ..... 1 ...	829 ..	
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Shale, limestone bands 3 4	832 4	
Limestone 8	833 ..	
Limestone ..... 1 ...	834 ..	
Shale, limestone bands 6 ...	840 ..	
Shale, limestone bands 9 ...	849 ..	
Shale, soft ..... 2 ...	851 ..	
Limestone, shale partings ..... 1 ...	852 ..	
Limestone ..... 2 ...	854 ..	
Shale, soft lime..... 4 ...	858 ..	
Shale 2	858 2	
Limestone ..... 2 ...	860 ..	
Limestone, shale partings 1 4	861 6	
Lime shale 2 6	864 ..	
Limestone, shale partings ..... 1 ...	865 ..	
Shale with bands..... 3 ...	868 ..	

No. 29—*Concluded*

Limestone	2	...	870 ..
Limestone, shale streaks	4	...	874 ..
Limestone	1	6	875 6
Shale, limestone bands		6	876 ..
Limestone		10	876 10
Shale, limestone bands	1	2	878 ..
Limestone	25	...	903 ..
Limestone, shale partings	8	...	911 ..
Lime shale	5	...	916 ..
Lime shale, clay partings	4	...	920 ..
Sandstone	21	...	941 ..
Shale	4	6	945 6
Shale, blue	14	...	965 ..

No. 30

Palmer Oil Gas and Mining Co.—No. 1

NE. ¼, SE. ¼, sec. 15, T. 12 N., R. 3 W.

Curb elevation—625 feet

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Drift, dirt	28	28
Hardpan, mixed with gravel	52	80
Pennsylvanian system		
Shale, white	10	90
Bastard lime	7	97
Slate, white	53	150
Coal, 12 to 18 in.	2	152
Slate, white	68 ?	250 ?
Shale, black	10	260
Slate, white	20	280
Shale, pink	10	290
Slate, white	110	400
Slate, black	15	415
Slate, white (Horizon of No. 5 coal, 460±)	135	550
Shale, black	20	570
Shale, white	80	650
Shale, black	20	670
Slate, white	190	860
Sand, white, 1st salt water	30	890
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Slate, pink	35	925
Sand, 2d salt water	10	935
Slate, white	40	975
Shale, pink	25	1000
Sand, 3rd salt water	10	1010
Slate, light brown	40	1050
Sand, light, 4th salt water	15	1065
Slate, white	5	1070
Limestone	15	1085
Sand and salt water	5	1090
Last mud above Big Lime	10 ?	1100 ?
Slate cap Mississippian lime	5 ?	1115 ?
Lower Mississippian sub-system		
In Mississippian lime	15 ?	1230 ?

MACON COUNTY

No. 1

T. C. Grady farm

NW. ¼, SW. ¼, sec. 2, T. 18 N., R. 2 E.

Curb elevation—714 feet

	Thickness *Ft. in.*	Depth *Ft. in.*
Pleistocene system		
Clay	62 ...	62 ..
Gravel, hardpan	6 ...	68 ..
Clay	16 ...	84 ..
Hardpan	129 ...	213 ..
Hardpan, sandy	6 ...	219 ..
Clay, hardpan	54 ...	273 ..
Pennsylvanian system		
Limestone	15 ...	288 ..
Shale, light	1 ...	289 ..
Shale, black	2 ...	291 ..
Shale, gray	5 ...	296 ..
Limestone	4 ...	300 ..
Shale, light	12 ...	312 ..
Sand shale	30 ...	342 ..
Shale, gray	28 ...	370 ..
Limestone	10 ...	380 ..
Shale, gray	19 ...	399 ..
Shale, sandy	90 ...	489 ..
Slate, dark	10 ...	499 ..
Coal	6	499 6
Fire clay	1 6	501 ..
Sandstone, gray	3 ...	504 ..
Shale, light	8 ...	512 ..
Limestone	9 ...	521 ..
Shale, blue	4 ...	525 ..
Limestone	7 ...	532 ..
Sand, shale	34 ...	566 ..
Slate, black	3 6	569 6
Coal (No. 5)	1 6	571 ..
Slate, dark	4 ...	575 ..
Limestone	17 ...	592 ..
Sand, shale	20 ...	612 ..
Slate, black	4 ...	616 ..
Shale, light	6 ...	622 ..
Limestone	4 ...	626 ..

No. 3

Lincoln Oil and Gas Co.—No. 3

Parish farm, No. 1

SW. ¼, SE. ¼, SE. ¼, sec. 82, T. 17 N., R. 2 E.

Curb elevation—644 feet

Driller's log

	Thickness *Feet*	Depth *Feet*
Pennsylvanian system		
Limestone, argillaceous, light gray	10	200
Same	5	205
Missing	10	215
Same	5	220
Shale, sandy gray, and coal	30	250
Shale, sandy, brown	10	260
Shale, laminated, sandy, light and medium gray banding—some carbonaceous partings	5	265
Shale, gray, slightly sandy	5	270
Shale, gray to brown, slightly sandy	5	275
Same	5	280
Shale, black, carbonaceous, slightly sandy	20	300
Missing	40	340
Limestone, hard crystalline, white to light gray	5	345
Limestone, hard crystalline, white and gray	5	350
Shale, brown, with some thin beds of black carbonaceous shale	5	355
Shale, pink	5	360
Shale, variegated light colored with some limestone, possibly concretions	10	370
Shale, gray, with thin interbedded limestone	10	380
Shale, brown, shading from reddish to gray	10	390
Shale, gray, medium dark	10	400
Missing	25	425
Limestone, brown to gray with carbonaceous and argillaceous partings	5	430
Shale, gray, with thin bedded limestone	10	440
Shale, gray to brown, with occasional lime pellets, probably concretionary	20	460
Shale, red cavy	15	475
Slate, blue	50	525
Slate, white	75	600
Slate, blue	25	625
Slate, white	5	630
Sand, salt water	30	660
Coal	8	668
Slate, white	12	680
Red rock	40	720
Slate, blue	30	750
Slate, white	50	800
Shale, red	25	825
Coal	5	830
Slate, white	20	850
Shale, black	25	875
Mississippian system		
Upper Mississippian sub-system		
Chester series		
White lime	25	900
Slate, blue, 8¼-inch set 925 feet, cave	25	925
Shale, black, underreamed 8¼-inch 1005 feet	25	950

No. 3—*Concluded*

Slate, white	25	975
Lime, blue	5	980
Slate, blue	20	1000
Lime, sandy, with water	20	1020
Slate, blue	10	1030
Shale, red, cave, 6⅝-inch set 1050 feet	10	1040
Lime, sandy, underream, 6⅝-inch, 1100 feet	20	1060
Lime, white	20	1080
Slate, blue, caves	20	1100
Lime, with show oil	5	1105
Slate, blue	10	1115
Sand, water	10	1125
Lower Mississippian sub-system		
Lime, broken	20	1145
Lime, with water in 1300	230	1375
Slate, white	25	1400
Lime	50	1450
Slate, blue	50	1500
Lime, blue	25	1525
Lime, white	75	1600
Slate, blue	25	1625
Lime, white, hard, carried water	125	1750
Lime, white, bottom of lime formation	20	1770
Shale, blue	5	1775
Lime, blue	20	1795
Shale, red	5	1800
Shale, white	5	1805
Lime, blue 5 3/16-inch, set 1820	15	1820
Lime, broken	10	1830
Sweetland Creek shale		
Shale, broken	10	1840
Shale, black	60	1900
Shale, black	50	1950
Lime, gray	5	1955
Shale, black	40	1995
Silurian system		
Lime and flint	10	2005
Cavity with white mud	5	2010
Lime and flint	16	2026
Lime, softer, light buff sandy	10	2036
Lime and flint	4	2040

No. 3

Lincoln Oil and Gas Co.—No. 3

Parish farm, No. 1

SW. ¼, SE. ¼, SE. ¼, sec. 32, T. 17 N., R. 2 E.

Curb elevation—644 feet

Log based on study of samples

	Thickness *Feet*	Depth *Feet*
Samples begin at 190 feet		
Limestone, argillaceous, light-gray, sandy; siltstone, light-gray, sandy; shale, green-gray, laminated, micaceous, sandy; everything pyritic	10	200
Pennsylvanian system		
Same, limestone most abundant; some carbonaceous soft, black shale, and carbonaceous bits all through sample	5	205

No. 3—Continued

Missing	10	215
Same, with some chalky white chert	5	220
Siltstone, gray, micaceous (muscovite) pyritic, calcareous, glauconitic, sandy, carbonaceous; coal, glossy, iridescent, dense, laminated, 50 per cent of sample	30	250
Siltstone as in preceding, dark gray, with faint chocolate cast and limonitic spots, laminated with some laminae gray and others carbonaceous	10	260
Same, less brownish	10	270
Same, very fine grained, distinctly light brown	10	280
Shale, black, fissile, filled with powdery, pyritic seams and impregnated with pyrite and mica	20	300
Missing	40	340
Limestone, light gray, finely crystalline with laminae of siltstone, dark calcareous; some soft white chert	5	345
Same, darker	5	350
Shale, mottled, light- and dark-gray, soft, poorly laminated, non-calcareous; some thin layers of harder, black, carbonaceous shale	5	355
Shale, highly calcareous, variegated red, purple and green-gray, the last being harder than the rest	5	360
Same, less red and purple, more gray with brown, so sample looks lighter colored; contains bits of white, calcareous segregations.	10	370
Same, dark green to light greenish-gray, with pyritic segregations along old plant remnants	10	380
Same, dark purplish-brown, with an abundance of small pyritized fossils, some of which show impressions	10	390
Same, darker, less purple	10	400
Missing	25	425
Limestone, light drab, medium crystalline, good fossils of small brachiopods; shale, non-calcareous, dark green or brownish, poorly laminated; remnants of plant fragments	5	430
Shale, greenish-gray, while larger fragments are rich chocolate or purplish; non-calcareous	10	440
Shale, dark, in fragments, light-greenish gray in cuttings; hard, non-laminated when fresh, non-calcareous	20	460
Same	14	475
Horizon of No. 5 coal		
Shale, black, carbonaceous, poorly fissile; rounded fragments of chert and limestone that may be surficial	5	480
Siltstone, greenish-gray, abundant pyrite in small crystals; some shale, greenish or black, probably from above	20	500
Shale, bluish-black, carbonaceous, soft	20	520
Shale, light greenish-gray; limestone, dark gray, crystalline	20	540
Shale, black, carbonaceous, fissile, combustible	10	550
Missing	1110	1660
Lower Mississippian system		
Limestone, blue-gray, finely crystalline, granular with fragments of fine-grained, bluish fissile siltstone and a little chalky chert	5	1665
Missing	1665	1960
Sweetland Creek shale		
Siltstone, fine grained, or silty shale, non-calcareous, fissile, fragile, dark-blue or brown-black, with sand grains of medium size and angular contour, and with large rosin-like spores	2	1962
Shale, dark chocolate-brown or light-green, hard, fissile, spores abundant, especially in brown; fragments of a crystalline rock, either black and white quartzite or pyroxenite, probably foreign, as are other fragments of quartz, etc., in sample	8	1970
Same, all black, with foreign material	10	1980
Same, some rusty brown	5	1985

No. 3—*Concluded*

Same, with much foreign material ground up and looks like sandstone; the shale is mainly dark, almost black, dense, non-fissile, but brittle, breaking into angular fragments; sandstone, fine grained, gray, heavily pyritic; limestone, bluish gray, very cherty, the chert dense, bluish white or blue; large iron flakes; some purple shale	10	1995
Silurian system		
Shale, 60 per cent, dark green, brittle, dense, non-laminated; 10 per cent limestone, blue-gray, pyritic, sandy; 30 per cent blue or blue-white dense chert	5	2000
Limestone, light bluish gray, sandy, finely crystalline, rusty from drill cuttings and with much dense bluish-white chert, and shale from above; the sand grains are large, sub-angular	2	2004
Same, less rusty	2	2004
Siltstone, light gray greenish tinge, fine grained, sandy calcareous	1	2005
Same, chert is dark blue; limestone is light-gray, rusty, pyritic	..	2005
Fragments shot from well showing light bluish-gray, finely crystalline limestone and dense blue chert with white coating	20	2010
Mainly blue chert, with greenish, pyritic siltstone, angular quartz sand grains and some limestone as before, and calcite crystals.	..	2010
Same as fragments, 1990-2010 feet	5	2015
Same, chert, probably 70 per cent, with some greenish-gray siltstone and black shale	2	2017
Same, more siltstone	1	2018
Fragments from second shot, same as from first shot	9 ?	2018
Same, sandy	2	2020
Odor of oil	2	2022
Mostly chert with a quantity of green, siliceous, non-laminated, soft shale and some hard brown laminated shale. Shale may be cavings. Some dolomite and calcite, a few sand grains and a little pyrite	4	2026
Chert and fine-grained, sandy dolomite and dark-gray, hard shale, somewhat laminated	2	2028
Chert and fine grained sandy dolomite; some calcite and pyrite, slightly less chert. Slight smell of oil	4	2032
Fine-grained, sandy dolomite, cream colored with very little chert; some siliceous cement present. Porosity small	4	2037
Dolomite sandy, fine-grained with equal quantity of chert. Little calcite and pyrite	3	2040

No. 4

Powers Well—northeast of Decatur

Cen. W. ½, W. ½, SW. ¼, sec. 1, T. 16 N., R. 2 E.

Curb elevation—691 feet

	Feet	*Feet*
Pleistocene system		
Clay	40	40
Cement gravel	25	65
Quick sand	20	85
Clay and gravel	5	90
Black mud	10	100
Quick sand	15	115
Sandy clay	5	120
Quick sand	10	130
Black mud	5	135
Pennsylvanian system		
White shale	5	140
Limestone	15	155
White shale	55	210
Red shale	10	220
Brown shale	25	245
White shale	5	250
Brown shale	5	255
Gritty shale	10	265
Black shale	7	272
White shale	26	298
White limestone	19	317
Black shale	18	335
White limestone	5	340
White shale	7	347
White shale	13	360
Black slate	45	405
White shale	35	440

No. 4—*Concluded*

White limestone 10		450
Red shale 20		470
Blue lime 10		480
White shale 10		490
Red shale 7		497
Black shale 21		518
Gray limestone 36		554
White slate 31		585
Black slate 6		591
Coal (No. 5)..... 5		596
Fire clay 4		600
White slate 20		620
White limestone 1		621
White shale 24		645
Black shale 35		680
Gritty shale 40		720
Black shale 20		740
Gritty shale with salt water 20		760
White sand 40		800
Black shale 2		802
Coal 3		805
Broken sand and water....31		836
Black shale 10		846
White shale 46		892
Gritty shale 144		1036
Broken sand 9		1045
Mississippian system		
Chester series		
White limestone 60		1105
Black shale 5		1110
Red shale 10		1120
Gritty shale 10		1130
White shale 20		1150
Gritty shale 10		1160
Slate 10		1170
Sand and salt water..... 5		1175
Partial log of same well from study of samples		
Coal 7		809
Shale, light, sandy..... 5		814
Slate, black 5		819
Limestone 5		824
Sand, shale, coarse.....10		834
Shale, light, gritty..... 5		839
Slate, hard 85		924
Sand, coarse 20		944
Shale, white and black, oily smell 10		954
Shale, dark 5		959
Shale, hard 5		964
Shale, sandy 5		969
Sand 15		984
Sand, brown, little shale... 5		989
Limestone 11		1000
Missing 70		1070
Limestone 40		1110

No. 5

Lincoln Oil Co.—No. 1

Caroline Powers

NW. cor., SE. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—620 feet

Driller's log

	Thickness *Feet*	Depth *Feet*
Pennsylvanian system		
White slate	79	200
Lime	10	210
Blue slate	40	250
White slate	40	290
Lime	10	300
White slate	40	340
Red shale	15	355
White slate	20	375
Black shale, set 10 in. pipe at 385 feet.....	15	390
White shale	60	450
Blue shale	25	475
Horizon of No. 5 coal		
White shale	10	485
Lime (shell)	5	490
White slate	60	550
Black slate with little water	15	565
Brown slate	65	630
Coal	5	635
Black shale	5	640
Lime (shell)	5	645
White slate	15	660
Lime	5	665
Brown slate	25	690
Black slate	20	710
White slate	65	775
Black slate	15	790
Lime	5	795
Brown slate	10	805
Black slate	65	870
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Lime	25	895
Slate, white	15	910
Red shale	15	925
White shale	20	945
Lime	15	960
Red rock	40	1000
White slate, set 8 in. pipe at 1055	55	1055
Salt sand	10	1065
Salt sand with lots of water	30	1095

No. 5—*Concluded*

Lower Mississippian sub-system		
Lime	65	1160
Brown lime	40	1200
Red lime	10	1210
Black lime	20	1230
Black lime	85	1315
Blue lime	35	1350
Yellow lime	15	1365
Blue lime	65	1430
Blue slate (break)	170	1600
Lime	40	1640
White lime	100	1740
Blue lime	25	1765
Blue slate	10	1775
Red slate	10	1785
White shale	15	1800
Brown lime	5	1805
Gray lime	10	1815
Blue slate, set 6⅝ in. pipe at 1820	5	1820
Sweetland Creek shale		
Brown shale	163	1983
Silurian system		
Lime	23	2006
Show oil sand	60	2066

No. 5

Lincoln Oil Co.—No. 1

Caroline Powers

NW. cor. SE. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—620 feet

Partial log based on study of samples

	Thickness *Feet*	Depth *Feet*
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Sand, angular, sub-angular and round, clear white	30	1095
Lower Mississippian sub-system		
Limestone, fine grained, dense white. Sample about 50 per cent sand like above	65	1160
Dolomite, fine grained, dense, black-brown, with fragments of white limestone and rounded, white quartz	40	1200
Limestone, fine grained, dense, gray-brown, with white limestone and clear quartz fragments	11	1211
Limestone, granular, crystalline, gray-black and brown. On solution in HCl leaves thin black laminae which may be carbonaceous in composition as well as containing considerable argillaceous material. Few fragments of white limestone. Quartz grains common	20	1230
Same, but black laminae fewer and very small	85	1315
Limestone, fine grained, bastard limestone and very fine grained gray sandstone. 73 per cent insoluble in HCl	35	1350
Sandstone, very fine, buff calcareous. 98 per cent insoluble in HCl	15	1365
Sandstone, very fine-grained, gray calcareous. 67 per cent insoluble in HCl	65	1430
Shale, gray clay, slightly calcareous	170	1600
Dolomite, porous, argillaceous, gray	15	1615
Limestone, white, granular, oolitic (?)	..	1615
Limestone, granular gray-white with much blue chert. Sample about 70 per cent chert	15	1655
Limestone, granular white with much blue-white chert and a few small, angular, clear sand grains	95	1740
Quartz, clear angular; chert, white, and shale, greenish-gray calcareous. About equal amounts of each	25	1765

No. 5—*Concluded*

Shale, green-gray, calcareous, with fragments of fine grained, dense, white limestone, brown limestone and green-gray calcareous shale	10	1775
Limestone, white; shale, dark gray; chert, white; angular clear quartz fragments; green-gray shale 20 per cent insoluble in HCl	10	1785
Shale, greenish-gray; clay	15	1800
Limestone, pink, purplish, green-gray and white; crystalline limestone with chert and green-gray shale fragments. Crinoid stems, fragments common	5	1805
Limestone, dense, fine grained, greenish-gray and buff-white	10	1815
Shale, dark green or siltstone, noncalcareous, no spores	5	1820
Sweetland Creek shale		
Shale, black, containing *Sporangites*, commonly the thin walled type; also green shale from above	100	1920
Missing	63	1983
Silurian system		
Limestone, fine grained, crystalline, white to faint tan tinge. About 50 per cent of sample blue-white, blue-green, and white translucent chert. Some fragments of greenish siltstone	5	1988
Same, but limestone buff colored. Less chert	5	1993
Like the last; 42 per cent insoluble in HCl, dolomitic	5	1998
Dolomite, fine grained, buff colored, with chert fragments; 24 per cent insoluble in HCl	5	2003
Like last with 20 per cent chert, mostly dolomitic	3	2006
Like last, 10 per cent chert	4	2010
Same, less dolomitic	1	2011
Same, chert 40 per cent	4	2015
Same, darker buff, more dolomitic chert, 50 per cent; few angular quartz grains	5	2020
Same, light brown in color, chert 10+ per cent	5	2025
Same, chert 20 per cent	10	2035
Same, chert 5 per cent	5	2040
Same, but gray colored with considerable green-gray dolomite	5	2045
Dolomite, fine grained, crystalline, green-gray, with only a few fragments of buff dolomite	5	2050
Same, without buff dolomite	10	2060

Seventy-seven feet into Silurian ("Niagara") limestone. Upper 17 feet dry; next 45 feet showed oil, and last 15 feet dry. Made very little bottom water. Best pay between 2020 and 2040 feet. Pay ends at 2045 feet. Top pay 1998 feet. Steel line run before shot showed 124 feet fluid, about 75 feet oil.

No. 6

Lincoln Oil and Gas Co.—No. 2

Caroline Powers farm

SW. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—631 feet

Driller's log

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Drift	121	121
Pennsylvanian system		
Shale	69	190
Lime	15	205
Shale	655	860
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Lime	15	875
Shale, white	15	890
Lime	13	903
Shale, red	12	915
Shale, white	20	935
Lime	5	940
Shale, red	20	960
Shale, white	60	1020
Lime	15	1035
Shale, green	3	1038
Lime, blue, salt water	10	1048
Shale, green	12	1060
Lime	5	1065

No. 6—*Concluded*

Slate, black	5	1070
Lime	10	1080
Lower Mississippian sub-system		
Lime, hard	70	1150
Lime	10	1160
Lime, brown	40	1200
Lime, black	25	1225
Lime, gray	55	1280
Lime, blue	75	1355
Lime, yellow	10	1365
Lime	55	1420
Slate, blue	170	1590
Lime, blue	30	1620
Lime	45	1665
Lime, white	75	1740
Lime, blue	20	1760
Slate, white	55	1815
Lime	20	1835
Sweetland Creek shale		
Shale, brown	149	1984
Silurian system		
Oil sand	96	2080
Lime, blue	120	2200
Lime and sand, little water	40	2240
Water and oil (?)	5	2245
Lime	55	2300
Lime	85	2385
Ordovician system		
Maquoketa shale		
Slate, blue	50	2435
Lime	65	2500
Slate, brown	70	2570
"Trenton" formation		
Rock (Oil show 2625-2700	230	2800

No. 6

Lincoln Oil and Gas Co.—No. 2

Caroline Powers farm

SW. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—631 feet

Log based on study of samples

	Thickness *Feet*	Depth *Feet*
Pennsylvanian system		
Limestone, medium to light gray, subcrystalline, some fossil fragments noted, either small stems or spines; some pyrite and gray shale and sand grains	15	205
Missing	660	865
Mississippian system		
Chester series		
Limestone, medium-gray, subcrystalline, medium grained; a dark gray shale, hard, some greenish shale, some sand and pyrite	15	880
Missing	140	1020
Mixture of fine-grained, angular sandstone and dark and medium-grained shale, some limestone, some red shale, some pyrite	15	1035
Shale, light grayish-green, calcareous, some fine grit	3	1038
Sandstone, fine-grained, angular, some about 1/5 shale like last; some red to purple shale; some limestone fragments	10	1048
Shale, medium-gray, hard, smooth, some pyrite	12	1060
Missing	5	1065
Shale, darker than last, brownish-gray, some limestone, some sand	5	1070
Sandstone, light-gray, fine calcareous, shaly, some dark shale, some pyrite	10	1080
Ste. Genevieve, St. Louis-Salem limestone		
Limestone, light tan-gray, fine grained, dense, a coarsely plicated fossil fragment noted (probably a *Spirifer*), some fine angular sand, shale, pyrite and limonite	70	1150
Limestone, mixture of dark tan limestone and white limestone, some sand, shale and pyrite. Some small fragments adhere to some larger ones and are brown, giving the appearance of a lump of brown sugar (oil?)	10	1160

No. 6—*Concluded*

Limestone, dark, some tan-gray and some gray, fine-grained, dense, impure, some gray shale	40	1200
Limestone, dark gray, dense, siliceous. Some fossil fragments noted, among them a crinoid stem, occasional shale or chert fragments and sand grains	5	1225
Limestone, medium-gray, fine-to medium-grained, subcrystalline, some darker limestone	55	1280
Limestone, darker than last. Some almost black, some sand	75	1355
Osage-Warsaw? formations		
Sandstone, exceedingly fine, angular sand, brownish gray, some shale and limestone	10	1365
Mixture of shale and gray, subcrystalline limestone, some fine sand	55	1420
Shale, medium gray, smooth hard	170	1590
Limestone, gray, impure, shaly, fine-grained; some darker gray shale	30	1620
Keokuk-Burlington limestone		
Limestone, light-gray, subcrystalline, about ½ dark or light chert	45	1665
Limestone, light-gray, subcrystalline, sample about 1/3 chert	85	1740
Limestone, light-gray and light-green, subcrystalline limestone, about ½ gray and pink chert	20	1760
Shale, light-gray, slight greenish cast, calcareous	55	1815
Limestone, light greenish-gray, shaly, some gray shale, some chert.	20	1835
Sweetland Creek shale		
Shale, hard, dark-gray, smooth; some greenish-gray, some limestone and chert fragments	40	1875
Shale, hard, chocolate-brown, containing *Sporangites huronensis*.	46	1921
Silurian system		
Missing	139	2060
Limestone, dark-gray, fine-grained, dense, shaly; some pyrite and shale; some mica	120	2180
Limestone, dark, greenish-gray, shaly and light gray, crystalline limestone	20	2200
Like preceding, some greenish-gray shale	45	2245
Limestone, light-gray, sample has slight green cast, subcrystalline to crystalline; some darker sugary limestone	35	2280
Limestone, light-gray, subcrystalline; some green shale, some chert	25	2300
Missing	15	2315
Like the last, slightly darker	15	2330
Limestone, medium-gray, subcrystalline, medium to coarse grains; some pinkish limestone, some green and gray shale and pyrite.	20 ?	2340
Like preceding, slightly darker; no pink limestone	10	2350
Limestone, tan-gray, subcrystalline; some chert, pyrite and shale, one green speck in the limestone noted	25	2375
Ordovician system		
Maquoketa shale		
Shale, medium-gray, hard, smooth, silt shale, some limestone fragments	60	2435
Like preceding, about 1/3 limestone	15	2450
Kimmswick-Plattin ("Trenton")		
Limestone, dolomitic, light, tan-gray, subcrystalline, about ½ of sample is gray shale	130	2280
Like preceding, slightly less shale	25	2605
Limestone, dolomitic, light tan-gray, subcrystalline to crystalline, medium-grained, some gray shale	15	2620
Like preceding, less shale	40	2660

No. 7

Pfeiffer farm—No. 3

SE. ¼, NW. ¼, NE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—664 feet

	Thickness Ft.	in.	Depth Ft.	in.
Pleistocene system				
Soil	30		30	
Gravel and sand	120		150	
Pennsylvanian system				
Slate	45		195	
Black shale	20		215	
White limestone	32		247	
Black shale	11		258	
White limestone	4		262	
White shale	38		300	
White limestone	5		305	
White shale	35		340	
White limestone	10		350	
Black shale	5		355	
White shale	10		365	
White limestone	13		378	
Coal	2		380	
White shale	10		390	
Red rock	4		394	
Brown shale	15		409	
White shale	11		420	
Blue shale	25		445	
White shale	28		473	
Blue limestone	5		478	
White shale	38		516	
Horizon of No. 5 coal				
Black shale	3		519	
White shale	40		559	
Black slate	2		561	
White shale	3		564	
Brown shale	56		620	
Black shale	65		685	
Sandy shale	25		710	
Black shale	5		715	
Limestone	23		738	
Black shale	3		741	
Limestone	9		750	
Black slate	6		756	
White shale mixed with shells of limestone	9		765	
Black shale	14		778	
Blue limestone	9	6	789	6
Blue shale	8	6	798	
White shale	6		804	

No. 8

Atlantic Oil and Gas Company

Bledsoe farm—No. 1

SW. ¼, SE. ¼, sec. 5, T. 16 N., R. 2 E.

Curb elevation—614.5 feet

	Thickness Ft.	in.	Depth Ft.	in.
Pleistocene system				
Soil, soft drilling	12		12	
Gravel, soft drilling	9		21	
Clay, soft drilling	9		30	
Cement gravel, hard drilling	20		50	
Quicksand, filled up in pipe	18		68	
Red mud, soft drilling	5		73	
Clay, yellow, soft drilling	17		90	
Mud, brown, soft drilling	15		105	
Pennsylvanian system				
Shale, blue, soft drilling	30		135	
Shale, blue	20		155	
Shale, brown	15		170	
Shale, blue	5		175	
Shale, hard	15		190	
Lime, gray, hard	7		197	
Shale, blue, soft	8		205	
Lime, gray, hard	9		214	
Shale, soft	76		290	
Lime, gray, hard	10		300	
Shale, soft	37		337	
Lime, gray, hard	6		343	
Red rock, soft	12		355	
Lime, hard	8		363	
Shale, white, soft	7		370	
Lime, blue, soft	25		395	
Shale	10		405	
Lime, hard	4		409	
Shale, blue, hard	26		435	
Lime, hard	10		445	
Shale, white	15		460	
Shale, black or dark	20		480	
Horizon of No. 5 coal				
Shale, white	35		515	
Lime, hard	3		518	
Shale, blue	7		525	
Shale, white, soft	35		565	
Shale, gray, soft	10		575	

No. 8—*Concluded*

Shale, brown .....55 ...	630 ..
Shale, white ..... 5 ...	635 ..
Shale, black, hard...25 ...	660 ..
Shale, gray, soft.....20 ...	680 ..
Shale, black ..... 5 ...	685 ..
Lime, hard .....20 ...	705 ..
Shale, brown .....10 ...	715 ..
Lime, gray .....18 ...	733 ..
Shale, blue ..... 7 ...	740 ..
Shale, gray, hard....10 ...	750 ..
Shale, blue, soft.....75 ...	825 ..
Shale, black .....55 ...	850 ..
Shale, gray .....25 ...	875 ..
Shale, white .....10 ...	885 ..
Mississippian system	
Upper Mississippian sub-system	
Chester series	
Lime .....35 ...	920 ..
Red rock .....10 ...	930 ..
Shale, dark ..... 5 ...	935 ..
Lime, gray .....15 ...	950 ..
Shale, gray .....15 ...	965 ..
Lime, hard ..... 5 ...	970 ..
Shale, blue .....20 ...	990 ..
Red rock ..... 5 ...	995 ..
Lime, hard ..... 5 ...	1000 ..
Red rock .....10 ...	1010 ..
Sand water, white...20 ...	1030 ..
Shale, white .....35 ...	1065 ..
Sand water, white...25 ...	1090 ..
Shale, white ..... 3 ...	1093 ..
Lower Mississippian sub-system	
Lime, gray .....87 ...	1180 ..
Lime, red .....10 ...	1190 ..
Lime, blue .....35 ...	1225 ..
Lime, brown .....25 ...	1250 ..
Lime, blue .....10 ...	1260 ..
Lime, brown ..... 5 ...	1265 ..
Lime, gray .....17 ...	1287 ..
Slate, blue ..... 3 ...	1290 ..
Lime, gray .....30 ...	1320 ..
Coal ..... 2 ...	1322 ..
Lime, gray, sandy...28 ...	1350 ..
Lime, brown ..... 5 ...	1355 ..
Lime, gray .....50 ...	1405 ..
Slate, blue .....15 ...	1420 ..
Lime, gray, sandy...30 ...	1450 ..
Slate, white .....57 ...	1507 ..
Lime, gray .....13 ...	1520 ..
Slate, gray, sandy....20 ...	1540 ..
Lime .....10 ...	1550 ..
Slate, gray .....75 ...	1625 ..
Lime, white, hard..105 ...	1730 ..
Lime, blue, hard.....65 ...	1795 ..
Red rock ..... 5 ...	1800 ..
Lime, brown, hard...12 ...	1812 ..
Slate, gray, soft.....20 ...	1832 ..
Lime, gray, hard....23 ...	1855 ..
Sweetland Creek shale	
Shale .....25 ...	1880 ..
Lime, gray ..... 5 ...	1885 ..
Shale, brown .....103 ...	1988 ..
Silurian system	
Lime .....10 ...	1998 ..
Producing oil sand... 6 ...	2004 ..
Lime, flinty .....28 ...	2032 ..
Sand, showing oil....30 6	2062 6

No. 9

Well located 2½ miles S. and ¼ mile East of Pfeiffer well (No. 8)

NE. cor. SE. ¼, SE. ¼, sec. 8, T. 16 N., R. 2 E.

Curb elevation—602 feet

	Thickness *Ft. in.*	Depth *Ft. in.*
Pleistocene system		
Soil	20 ...	20 ..
White mud	50 ...	70 ..
Quick sand	15 ...	85 ..
Yellow mud	15 ...	100 ..
Black mud	20 ...	120 ..
White mud	10 ...	130 ..
Blue mud	5 ...	135 ..
Black mud	25 ...	160 ..
Brown mud	10 ...	170 ..
Pennsylvanian system		
Limestone	5 ...	175 ..
Black shale	25 ...	200 ..
Limestone	10 ...	210 ..
White shale	5 ...	215 ..
Brown shale	85 ...	300 ..
White shale	20 ...	320 ..
White limestone	15 ...	335 ..
Brown shale	15 ...	350 ..
White limestone	10 ...	360 ..
Red rock	9 ...	369 ..
White shale	15 ...	384 ..
Brown shale	16 ...	400 ..
White shale .....114 ...		514 ..
Coal (No. 5).....	2 ...	516 ..
Brown shale	44 ...	560 ..
Gray shale	73 6	633 6
Hard shell	2 ...	635 6
Coal	4 6	640 ..
White shale	40 ...	680 ..
Black shale	40 ...	720 ..

No. 10

*Decatur Coal Company—Shaft No. 1**

Sec. 11?, T. 16 N., R. 2 E.

Curb elevation—672 feet

	Thickness Ft.	in.	Depth Ft.	in.
Pleistocene system				
Surficial deposits, consisting of clay, sand, hardpan, and two distinct forest beds	110	6	110	6
Pennsylvanian system				
Shale, argillaceous	52	6	163	..
Shale, bituminous	3	...	166	..
Shale, calcareous	14	...	180	..
Sandstone, marly	1	...	181	..
Shale, calcareous	32	...	213	..
Sandstone, argillaceous	5	...	218	..
Shale, red	2	...	220	..
Limestone, argillaceous	8	...	228	..
Shale, brown	7	...	235	..
Limestone, argillaceous	2	...	237	..
Shale, calcareous	2	6	239	6
Coal and bituminous shale	2	...	241	6
Shale, calcareous	5	6	247	..
Shale, brown	2	...	249	..
Sandstone, argillaceous	41	8	290	8
Coal	..	6	291	2
Shale, argillaceous	8	6	299	8
Limestone, nodular	9	...	308	8
Shale, calcareous	5	...	313	8
Shale, argillaceous	10	...	323	8
Limestone, hard	9	...	332	8
Shale, argillaceous	2	6	335	2
Shale, bituminous	2	...	337	2
Shale, argillaceous	12	...	349	2
Limestone, hard	7	6	356	8
Limestone, argillaceous	1	6	358	2
Shale, black and gray	1	...	359	2
Shale, argillaceous	3	6	362	8
Limestone, argillaceous	1	6	358	2
Shale, black and gray	1	...	359	2
Shale, argillaceous	3	6	362	8
Limestone, argillaceous	20	6	383	2
Shale, argillaceous	9	...	392	2
Sandstone, argillaceous	27	6	419	8
Shale, calcareous	2	...	421	8
Shale, bituminous	1	6	423	2
Coal	6	1	429	3
Shale, argillaceous, nodular	15	...	444	3
Shale, argillaceous, slaty	19	...	463	3
Limestone, hard, gray	17	...	480	3
Shale, soft	1	6	481	9
Shale, bituminous	1	...	482	9
Shale, argillaceous	4	6	487	3
Shale, brown	..	6	487	9
Shale, calcareous	9	3	497	..
Limestone, argillaceous	2	...	499	..
Shale, calcareous	3	3	502	3
Shale, red, variegated	9	...	511	3
Shale, gray, argillaceous	18	...	529	3
Shale, bituminous	3	3	532	6
Shale, gray, argillaceous	1	3	533	9
Shale, bituminous	1	6	535	3
Shale, gray, calcareous	6	...	541	3
Shale, bituminous	1	...	542	3
Coal and limestone	1	...	543	3
Shale, bituminous	..	6	543	9
Limestone, soft	1	...	544	9
Shale, argillaceous	2	...	546	9
Shale, bituminous	..	7	547	4
Coal	..	8	548	..
Shale, gray	..	9	548	9
Limestone, argillaceous	6	9	555	6
Shale	..	6	556	..
Limestone	2	10	558	10
Coal	..	6	559	4
Shale, blue and gray	14	5	573	9
Sandstone, marly	1	6	575	3
Shale, calcareous	5	...	580	3
Sandstone	15	...	595	3
Slate, gray	5	9	601	..
Shale, bituminous	2	3	603	3
Coal (No. 5)	3	6	606	9
Fire clay	2	...	608	9
Missing	47	3	657	..
Limestone	3	...	660	..
Coal	2	...	662	..
Missing	20	...	682	..
Limestone	3	...	685	..
Missing	35	...	720	..
Coal	2	...	722	..
Missing	27	...	749	..
Coal	1	...	750	..
Missing	33	...	783	..
Coal	2	...	785	..
Missing	20	...	805	..
Coal	5	...	810	..
Missing	29	...	839	..
Coal	1	...	840	..
Missing	13	...	853	..
Limestone	2	...	855	..

* Record of shaft to a depth of 608 feet 9 inches is taken from Vol. VII, p. 17 of the Ill. Geological Survey Worthen reports. The remainder of the log represents estimated thicknesses and depths and should not be considered as accurate.

No. 11

Decatur Coal Company—Shaft No. 2 NW. ¼, SW. ¼, sec. 14, T. 16 N., R. 2 E.

Curb elevation—667 feet

	Thickness Ft.	in.	Depth Ft.	in.
Pleistocene system				
Soil and loamy clay.	25	...	25	..
Sand and water (flow of 400 gallons per minute)	30	...	55	..
Clay, blue	4	...	59	..
Drift wood and soil..	2	...	61	..
Sand, green	4	...	65	..
Sand, gray	6	...	71	..
Clay, hard blue.....	9	...	80	..
Sand and gravel....	53	...	133	..
Pennsylvanian system				
Hardpan	23	...	156	..
Sandstone	1	6	157	6
Shale, soft	6	...	163	6
Shale, gray and blue sandy	28	...	191	6
Clay shale	15	...	206	6
Slate, blue	7	...	213	6
Fire clay, ferruginous	6	...	219	6
Conglomerate limestone	7	...	226	6
Slate, brown	10	...	236	6
Flint stone	2	6	239	..
Slate, black	1	...	240	..
Flint rock	2	6	242	6
Coal	..	10	243	4
Fire clay	8	...	251	4
Shale, blue sandy...	10	...	261	4
Flint stone	3	...	264	4
Clay shale	5	...	269	9
Shale, sandy	21	...	290	4
Slate, black	2	6	292	10
Coal	1	...	293	10
Fire clay	6	...	299	10
Shale, black and 1 inch of coal	8	1	307	11
Fire clay	6	...	313	11
Shale, black	3	...	316	11
Limestone, impure .	1	...	317	11
Shale, brown	8	...	325	11
Sandstone	1	...	326	11
Slate, black	4	...	330	11
Flint stone	11	...	341	11
Slate, black	12	...	353	11
Fire clay	4	...	357	11
Limestone	10	...	367	11
Slate, black	2	...	369	11
Fire clay	8	...	377	11
Clay shale	13	...	390	11
Sandstone	5	...	395	11
Flint stone	2	...	397	11
Slate, blue	8	...	405	11
Shale, clay	31	...	436	11
Sandstone, blue	1	...	437	11
Slate, black	3	...	440	11
Coal	1	4	442	3
Fire clay	6	...	448	3
Shale, sandy	10	...	458	3
Shale, black	33	...	491	3
Slate, hard black ...	5	...	496	3
Coal (local)	..	3	496	6
Fire clay	4	...	500	6
Limestone	11	...	511	6
Shale, black	4	...	515	6
Shale, clay	2	...	517	6
Coal	4	...	517	10
Fire clay	2	...	519	10
Conglomerate stone..	3	...	522	10
Clay shale, gray and blue	14	...	536	10
Slate, black, and ½ inch coal	4	...	540	10
Fire clay	4	...	544	10
Sandstone	7	...	551	10
Shale, gray	6	...	557	10
Slate, black	2	...	559	10
Coal	1	4	561	2
Clay shale	..	6	561	8
Coal	2	10	564	6
Shale, hard gray ...	8	...	572	6
Limestone	2	6	575	..
Bituminous shale and coal	6	...	575	6
Fire clay	4	...	579	6
Sandstone	17	...	596	6
Clay shale	3	...	599	6
Sandstone	13	...	612	6
Clay shale, dark.....	8	...	620	6
Slate, black	1	6	622	..
Coal (No. 5)	4	6	626	6

No. 12

*Manufacturers and Consumers Coal Co.—Shaft No. 1**

NE. cor., sec. 22, T. 16 N., R. 2 E.

Elevation—614.78 feet

Partial log

	Thickness Ft.	in.	Depth Ft.	in.
Limestone	5	...	150	..
Coal	..	8	208	..
Limestone	10	...	250	..
Limestone	8	...	275	..
Coal	1	6	348	..
Limestone	8	...	408	..
Limestone	15	...	440	..
Coal	1	6	486	6
Fire clay	3	...	489	6
Coal	1	6	491	..
Limestone	3	...	510	..
Coal	4	2	560	..

*Thicknesses and depths are approximate.

No. 13

Manufacturers and Consumers Coal Co.—Shaft No. 2.*

NE. cor. sec. 22, T. 16 N., R. 2 E.

Curb elevation—615 feet

Partial log

	Thickness Ft. in.	Depth Ft. in.
Coal	10	240 ..
Coal	12	295 ..
Limestone	10 ...	340 ..
Limestone	15 ...	365 ..
Coal	18	435 ..
Coal	3	495 ..
Limestone	10 ...	505 ..
Coal	5 ...	560 ..

No. 14

Niantic Coal Co.—Shaft

SW. cor. NW. ¼, sec. 12, T. 16 N., R. 1 W.

Curb elevation—601.5 feet

	Thickness Ft. in.	Depth Ft. in.
Pleistocene system		
Soil and brown clay	11 ...	11 ..
Sand and gravel	4 ...	15 ..
Gravelly hard pan	25 ...	40 ..
Blue hard pan	10 ...	50 ..
Soft clay	15 ...	65 ..
Gray hard pan	10 ...	75 ..
Soft brown clay	7 ...	82 ..
Pennsylvanian system		
Limestone	10 ...	92 ..
Blue flinty rock	2 ...	94 ..
Black slate	3 ...	97 ..
Fire clay	6 ...	103 ..
Limestone	10 ...	113 ..
Blue and gray shale	7 ...	120 ..
Black shale	1 ...	121 ..
Coal	2	121 2
Fire clay	1 ...	122 2
Nodular limestone	5 ...	127 2
Clay shale	5 ...	132 2
Soft blue sandstone	16 ...	148 2
Gray shale	42 ...	190 2
Coal	1 3	191 5
Fire clay	2 6	193 11
Sandstone	10 ...	203 11
Gray shale	45 ...	248 11
Hard flinty rock	10 ...	258 11
Black shale	3 ...	261 11
Fire clay	9 ...	270 11
Blue and red shales	15 ...	285 11
Black slate	5 ...	290 11
Coal	1 3	292 2
Fire clay	4 6	296 8
Black shale	11 ...	307 8
Coal	2 6	310 2
Clay shale	15 ...	325 2
Black shale	3 ...	328 2
Coal (local)	10	329 ..
Fire clay	2 ...	331 ..
Gray shale	14 ...	345 ..
Hard black rock, (limestone)	1 ...	346 ..
Black slate	3 ...	349 ..
Coal (No. 5)	5 6	354 6

No. 17

Kelley well

NE. cor., SE. ¼, NE. ¼, sec. 30, T. 15 N., R. 2 E.

Curb elevation—692 feet

	Thickness Feet	Depth Feet
Pleistocene system		
Drift	176	176
Pennsylvanian system		
Brown shale	59	235
Black shale	10	245
Blue shale	7	252
Limestone	8	260
White shale	9	269
Sandstone	20	289
Black shale	15	304
Blue shale	11	315
Limestone	5	320
Blue shale	5	325
Limestone	15	340
Black shale	16	356
Limestone	8	364
Blue shale	12	376
White shale	11	387
Brown shale	12	399
Sandstone	5	404
Brown shale	31	435
White shale	25	460
Brown shale	28	488
Limestone	30	522
Blue shale	23	545
Black shale	15	560
Limestone	12	572
Black shale	8	580
Limestone	3	583
Blue shale	18	601
White shale	12	613
Black shale	7	620
Limestone	3	623
Blue shale	37	660

*Thicknesses and depths are approximate.

No. 17—*Concluded*

Horizon of No. 5 coal		
Black shale	10	670
White shale	33	703
Blue shale	22	725
Brown shale	50	775
Black shale	8	783
Blue shale	53	836
Limestone	6	842
Brown shale	70	912
Black shale	58	970
Blue shale	52	1022
Black shale	5	1027
Sandstone	30	1057
Blue shale	6	1063
Black shale	10	1073
Blue shale	5	1078
Black shale	12	1090
Mississippian system		
Chester series		
Limestone	40	1130
Blue shale	18	1148
Red shale	8	1156
Limestone	2	1158
White shale	12	1170
Blue shale	13	1183
Limestone	4	1187
Blue shale	51	1238
Red shale	4	1242
Limestone and salt water.	18	1260
White shale	6	1266
Sandstone	37	1303
Red shale and salt water.	5	1308

No. 18

Blue Mound well

NW. cor. NE. ¼, SW. ¼, sec. 32, T. 15 N., R. 1 E.

Curb elevation—607 feet

	Thickness		Depth	
	Ft.	*in.*	*Ft.*	*in.*
Pleistocene system				
Clay and sand	18	...	18	..
Sand	5	...	23	..
Clay, coarse gravel	3	...	26	..
Cemented clay, gravel	5	...	31	..
Blue clay	22	...	53	..
Cemented clay, gravel	3	...	56	..
Clay and sand	14	...	70	..
Cemented clay, gravel	3	...	73	..
Boulders and gravel.	2	...	75	..
Soft clay and shale.	23	...	98	..
Soft clay	1	...	99	..
Pennsylvanian system				
Black shale	1	...	100	..
Bone coal	..	6	100	6
Soft clay and shale	10	6	111	..
Sand shale	3	...	114	..
Limestone	5	...	119	..
Sandstone	6	...	125	..
Clay shale	9	...	134	..
Clay shale	20	...	154	..
Clay shale	9	...	163	..
Clay shale with hard bands	22	...	185	..
Clay shale	6	...	191	..
Limestone	9	...	200	..
Blue clay shale	1	...	201	..
Black shale	4	...	205	..
Dark blue shale	7	10	212	10
Bone	..	2	213	..
Fire clay	5	...	218	..
Bastard limestone	7	...	225	..
Blue clay shale	7	...	232	..
Limestone	1	...	233	..
Light clay shale	6	...	239	..
Sand and limestone mixed with shale	5	...	244	..
Sandy shale	11	...	255	..
Sandy shale	5	...	260	..
Sand shale	8	...	268	..
Sand shale	7	...	275	..
Clay shale	16	...	291	..
Clay shale	10	...	301	..
Black shale	1	...	302	..
Coal	..	6	302	6
Fire clay	1	6	304	..
Clay shale	9	...	313	..
Clay shale with hard bands	17	...	330	..
Clay shale with hard bands	22	...	350	..
Black clay shale	15	...	365	..
Clay shale soft, with cave	12	...	377	..
Red soapstone, soft	5	...	382	..
Red soapstone, soft	3	...	385	..
Limestone	4	...	389	..
Clay shale	6	...	395	..
Clay shale	14	...	409	..
Clay shale	6	...	415	..
Clay shale	4	...	419	..
Clay shale	9	...	428	..
Dark blue shale	4	8	432	8
Coal	2	6	435	2
Fire clay	1	6	436	8
Coal	..	8	437	4
Clay shale	13	8	451	..
Limestone	4	6	455	6
Clay shale	4	3	459	3
Coal	3	6	463	3
Shale	1	3	464	6
Limestone	4	6	469	..
Clay shale	10	...	479	..
Clay shale	7	...	486	..
Black shale	3	...	489	..
Coal, clean parting	5	3	494	3
Fire clay	1	6	495	9
Clay shale	8	3	504	..
Clay shale	14	...	518	..
Clay shale	12	...	530	..

No. 18—*Concluded*

Black shale	3	...	533	..
Coal (No. 5)	1	8	534	8
Soft crumbly shale	3	4	538	..
Clay shale	5	...	543	..
Clay shale with hard bands	21	...	564	..
Clay shale with hard bands	18	...	582	..
Coal	3	6	585	6
Sand clay shale mixed	12	6	598	.
Sand clay shale mixed	2	...	600	..
Black sandy shale	2	...	602	..
Coal	1	5	603	5
Clay and sandy shale mixed	5	7	608	..
Clay and sandy shale mixed	18	...	626	..
Clay shale	13	4	639	4
Coal	1	2	640	6
Mucky shale	1	6	642	..
Mucky shale	1	...	643	..
Hard sandstone	9	...	652	..
Black shale	1	...	653	..
Coal	..	3	653	3
Black shale	2	7	655	10
Coal mixed with sulphur	2	5	658	3
Fire clay	1	6	659	9
Clay shale	4	3	664	..
Sandstone	4	...	668	..
Sandstone and sand shale mixed	15	...	683	..
Flowing salt water at	..	...	670	..
Clay shale with hard bands	7	6	690	6
Black shale	2	3	692	9
Coal	..	6	693	3
Clay shale	1	9	695	..
Clay shale	12	...	707	..
Clay shale	3	...	710	..
Sandstone	6	...	716	..
Black shale	3	...	719	..
Coal	..	8	719	8
Clay shale	2	4	722	..
Clay shale	14	...	736	..
Dark shale	2	...	738	..
Clay shale	2	...	740	..
Coal	..	2	740	2
Clay shale	1	10	742	..
Coal	..	6	742	6
Clay shale	3	6	746	..
Dark shale	3	...	749	..
Coal and sulphur	..	8	749	8
Sandstone and sand shale	10	4	760	..
Dark clay shale	2	...	762	..
Dark clay shale	3	...	765	..
Black shale	7	...	772	..
Coal	..	8	772	8
Clay shale	3	4	776	..
Sandstone	3	...	779	..
Sand shale	10	...	789	..
Coal	3	...	792	..
Clay shale	1	...	793	..
Sandstone	14	...	807	..
Sandstone	11	...	818	..
Sand shale and clay shale mixed	6	...	823	..
Clay shale	12	...	835	..
Sandstone	5	...	840	..
Sandstone hard	10	...	850	..

No. 20

Macon County Oil and Gas Co.

John M. Hill farm

NW. ¼, NE. ¼, sec. 3. T. 14 N., R. 2 E.

Curb elevation—701 feet

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Drift sand, gravel	160	160
Pennsylvanian system		
White shale	50	210
Blue shale	45	255
Limestone	5	260
White shale	40	300
Blue shale	30	330
Black shale	12	342
White shale	20	362
Limestone	18	380
Sandy brown shale	40	420
White shale	30	450
Blue shale	15	465
Limestone	20	485
White shale	30	515
Blue shale	40	555
Black shale	15	570
Blue shale	20	590
White shale	15	605
Limestone	5	610
White shale	4	614
Limestone	6	620
White shale	30	650
Limestone	2	652
Coal	4	656
Slate	1	657
White shale	30	687
Horizon of No. 5 coal		
Black shale	15	702
Blue shale	20	722
White shale	48	770
Brown shale	80	850
Blue shale	80	930
Limestone	3	933
Blue shale	6	939
Black shale	61	1000

No. 20—*Concluded*

Limestone	4	1004
Black shale	56	1060
Gray sandstone and salt water	45	1105
Blue shale	10	1115
Mississippian system		
Chester series		
Limestone	8	1123
Blue shale	10	1133
Brown shale	27	1160
Limestone	2	1162
Brown shale	13	1175
Blue shale	6	1181
Red shale	12	1193
Limestone	2	1195
Red shale	5	1200
Blue shale	18	1218
Limestone	15	1233
Blue shale	5	1238
Red shale	10	1248
Blue shale	5	1253
Sandstone	12	1265
Red shale	5	1270
Blue shale	6	1276

MOULTRIE COUNTY

No. 16

Moultrie County Coal Company

Lovington well

SE. cor., SW. ¼, NE. ¼, sec. 27, T. 15 N., R. 5 E.

Elevation, top of shaft—669.65 feet

	Thickness		Depth	
	Ft.	*in.*	*Ft.*	*in.*
Pleistocene system				
Soil, black	2	...	2	..
Clay, yellow	12	...	14	..
Clay, blue	58	...	72	..
Gravel	3	...	75	..
Hard clay and gravel	8	...	83	..
Gravel	7	...	90	..
Hard clay and gravel	26	...	116	..
Sand	11	...	127	..
Clay, red	5	...	132	..
Red clay and gravel	13	...	145	..
Pennsylvanian system				
Sand rock	4	...	149	..
Sand shale	4	...	153	..
Sand shale, blue	29	...	182	..
Sand shale	2	...	184	..
Sandstone	18	7	202	7
Coal	..	10	203	5
Sandstone	..	7	204	..
Clay shale	7	...	211	..
Sandstone	4	...	215	..
Sand shale, blue	14	6	229	6
Shale, dark with sandstone bands	13	6	243	..
Shale, blue	12	5	255	5
Coal	2	...	257	5
Sand shale	15	7	273	..
Shale, dark blue	24	8	297	8
Slate, fossiliferous	1	4	299	..
Slate, black	3	6	302	6
Coal	1	...	303	6
Clay shale	4	6	308	..
Sandstone, dark	23	...	331	..
Shale, fossiliferous	1	...	332	..
Shale, dark blue	18	9	350	9
Coal	..	3	351	..
Fire clay	2	...	353	..
Clay shale	5	...	358	..
Limestone	5	...	363	..
Clay shale	6	...	369	..
Conglomerate	3	...	372	..
Limestone	25	8	397	8
Sand shale, dark	2	4	400	..
Sand shale	11	10	411	10
Coal	..	3	412	2
Sand shale	3	11	416	1
Shale, blue	9	...	425	1
Shale, dark blue	8	3	435	4
Coal	..	1	435	5
Shale, dark blue	6	5	439	10
Coal	..	5	440	3
Sand shale, blue	2	10	443	1
Sand shale	5	...	448	1
Sandstone	5	...	453	1
Shale, dark blue	23	10	476	11
Coal	..	8	477	5
Clay shale	4	6	481	11
Limestone	1	...	482	11
Shale, blue	2	...	484	11
Red shale	5	...	489	11
Shale, blue	11	6	501	5
Shale, black	..	6	501	11
Shale, fossiliferous	1	11	503	10
Coal	1	3	505	1
Clay shale	3	10	508	11
Sandstone, shaly	10	...	518	11
Sandstone, dark	22	...	540	11
Sandstone, white	18	...	558	11
Sandstone	23	...	581	11
Shale, blue	2	6	584	5
Limestone, nodular	3	6	587	11
Limestone	5	7	593	6
Shale, black	1	...	594	6
Shale, dark blue	10	5	604	11
Clay shale	3	...	607	11
Shale, blue	3	...	611	..
Sandstone	16	...	627	..
Shale, blue	1	...	628	..
Shale, dark blue	14	6	642	6
Shale, black	3	2	645	..
Coal	..	6	646	6

No. 16—*Concluded*

Clay shale	5 10	652	..
Sandstone	4 ...	656	..
Shale, blue	1 ...	657	..
Sandstone	7 ...	664	..
Shale, blue	1 ...	657	..
Sandstone	7 ...	664	..
Sandstone, shale partings	11 ...	675	..
Sand shale, dark	9 ...	684	..
Shale, dark blue	30 6	714	6
Shale, black	.. 6	715	..
Coal	1 ...	716	..
Clay shale	2 6	718	6
Sand shale, blue	4 6	723	..
Sand shale	9 ...	732	..
Limestone	8 ...	740	..
Shale, blue	1 6	741	6
Limestone	12 10	754	4
Shale, dark blue	1 8	756	..
Shale, gray	7 ...	763	..
Sandstone	19 ...	782	..
Sandstone, dark	19 ...	801	..
Shale, dark blue	24 ...	825	..
Shale, black	5 ...	830	..
Shale, blue	10 ...	840	..
Shale, dark blue	10 ...	850	..
Shale, dark blue	16 ...	866	..
Shale, blue	7 6	873	6
Coal	3 2	876	8
Shale partings	1 11	878	7
Coal	1 4	879	11
Limestone, blue	3 1	883	..
Clay shale	5 ...	888	..
Slate, black	3 ...	894	..
Limestone, blue	9 6	900	6
Slate, black	2 4	902	..
Coal (No. 6)	8 10	911	8
Sandstone	8 4	920	..

No. 26

Well near Bethany

NE. cor., NE. ¼, NW. ¼, sec. 2, T. 13 N., R. 4 E.

Curb elevation—585+ feet

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Soil	3	3
Clay	32	35
Sand	30	65
Pennsylvanian system		
Slate	35	100
Coal	2	102
Slate	48	150
Lime	15	165
Slate	5	170
Lime	10	180
Coal	6	186
Water sand, hole full of water	14	200
Blue mud	25	225
Blue mud	5	230
Lime	5	235
Blue mud	5	240
Lime	40	280
Blue mud	70	350
Red rock	20	370
Slate, blue	15	385
Slate, white	35	420
Lime	5	425
Salt sand, hole full of water	35	460
Shale, gray	5	465
Lime, white	5	470
Shale, blue	15	485
Lime	5	490
Slate, white	40	530
Lime, white, sandy	5	535
Shale, blue	15	550
Slate, white	25	575
Slate, blue	15	590
Slate, white	25	615
Lime, white	10	625
Shale, white	75	700
Slate, black	30	730
Lime, blue	10	740
Slate, blue	60	800
Lime, white, with thin coal seams	75	875
Slate, white	25	900
Slate, black	25	925
Slate, white	45	970
Slate, dark	30	1000
Slate, white	20	1020
Shale, brown	6	1026
Slate, black, horizon of No. 5 coal	24	1050
Slate, white	25	1075
Slate, dark	40	1120
Shale, white	20	1140
Lime, broken	10	1150
Slate, white	50	1200
Lime, white. Set 8-inch casing, underreamed to 1500; 5 bailers water	10	1210
Sand, white	20	1230
Lime, coarse, gray	10	1240
Slate, sandy, gray	35	1275
Slate, white	25	1300
Shale, dark, sandy	25	1325
Lime shale	5	1330
Slate, dark	10	1340
Sandy lime	10	1350
Slate	25	1375
Shale, white, bad dry cave	25	1400
Slate, sandy; set 6⅝-inch casing at 1410; underreamed to 1650	20	1420

No. 26—*Concluded*

Slate, blue, cavy	30	1450
Shale, blue sandy	55	1505
Mississippian system		
Upper Mississippian sub-system		
Chester series		
Lime, white; 8½-inch casing at 1490; (Well dry")	5	1510
Slate, blue	10	1520
Red rock	30	1550
Lime, brown	40	1590
Slate, sandy	40	1630
Red cave	15	1645
Sand, white	5	1650
Red rock, casing under-reamed to 1650	5	1655
Sand, white	10	1665
Slate, red	10	1675
Slate, brown	25	1700
Lime, gray	25	1725
Slate, blue	10	1735
Sand, white	5	1740
Shale, red	5	1745
Lime, gray, with slate seams	30	1775
Lower Mississippian system		
Lime, blue	25	1800
Lime	40	1840
Lime, white, fine	15	1855
Lime, coarse, gray	5	1860
Lime, gray	15	1875
Lime, brown	25	1900
Lime, brown and black	50	1950
Lime, brown	25	1975
Lime, white, coarse	15	1990
Lime, brown, coarse	10	2000
Lime, gray, fine	40	2040
Lime, brown, fine	10	2050
Lime, brown, 15 bailers of water	25	2075
Lime, brown, 500 feet of water	15	2090
Lime, brown	15	2105
Lime, brown, hole full of water	20	2125
Lime, gray	?	....
Lime, gray, sandy	23 ?	2150

PIATT COUNTY

No. 2

J. L. Apple Oil Prospecting Co.

N. G. Pattengill farm—No. 1

SW. ¼, SE. ¼, sec. 3, T. 17 N., R. 4 E.

Curb elevation—641 feet

	Thickness *Feet*	Depth *Feet*
Pleistocene system		
Clay and gravel	25	25
Sand	15	40
Cement gravel	20	60
Quicksand	10	70
Cement gravel	20	90
Quicksand	15	105
Cement gravel	25	130
Quicksand	7	137
Clay, gravel	8	145
Quicksand	10	155
Water gravel	5	160
Pennsylvanian system		
White lime (?)	17	177
White mud	23	200
Black shale	10	210
Coal	1	211
Shale, brown	24	235
Shale, black	25	260
Shale, white	40	300
Shale, black	20	320
Shale, gritty	40	360
Shale, white	20	380
Shale, gritty	30	410
Shale, black	50	460
Shale, gritty	40	500
Shale, black	30	530
Shale, white	20	550
Shale, black	10	560
Limestone, brown	10	570
Shale, white	50	620
Shale, black	15	635
Coal (No. 5)	2	637
Shale, white	63	690
Shale, brown	50	740
Shale, black	50	790
Shale, brown	40	830
Shale, black	30	860
Shale, white	20	880
Shale, black	20	900
Limestone, brown	40	940
Shale, brown	30	970
Shale, gritty	55	1025
Shale, black	25	1050
Slate, black	20	1070
Shale, brown	30	1100
Mississippian system		
Upper Mississippian sub-system		
Limestone, brown	40	1140
Shale, red	70	1210
Slate, gritty	20	1230
Red rock	35	1265
Slate, gritty	5	1270
Limestone, white	10	1280
Sand and salt water	55	1335
Lower Mississippian sub-system		
Limestone, white	15	1350
Limestone, brown	50	1400

SANGAMON COUNTY

No. 15

Mechanicsburg Coal Company

NE. cor., NW. ¼, NE. ¼, sec. 26, T. 16 N., R. 3 W.

Curb elevation—585 feet

	Depth *Feet*
Base of No. 6 coal	277
Base of No. 5 coal	305