STATE OF OHIO
FRANK J. LAUSCHE, Governor
DEPARTMENT OF NATURAL RESOURCES
A. W. MARION, Director
DIVISION OF GEOLOGICAL SURVEY
JOHN H. MELVIN, Chief

REPORT OF INVESTIGATIONS NO. 10
PETROLEUM AND NATURAL GAS SERIES NO. 2

OIL AND GAS IN PERRY COUNTY

By
ROBERT L. ALKIRE

COLUMBUS
1952

STATE OF OHIO
FRANK J. LAUSCHE, Governor
DEPARTMENT OF NATURAL RESOURCES
A. W. MARION, Director
DIVISION OF GEOLOGICAL SURVEY
JOHN H. MELVIN, Chief

REPORT OF INVESTIGATIONS NO. 10
PETROLEUM AND NATURAL GAS SERIES NO. 2

OIL AND GAS IN PERRY COUNTY

By
ROBERT L. ALKIRE

COLUMBUS
1952

STATE OF OHIO

Frank J. Lausche, Governor

DEPARTMENT OF NATURAL RESOURCES

A. W. Marion, Director

NATURAL RESOURCES COMMISSION

Lew Reese, Chairman

John A. Silpher, Vice Chairman
C. D. Blubaugh
Bryce Browning
C. L. Dow
Roy Battles, Secretary
A. W. Marion
L. L. Rummel
George Wenger

DIVISION OF GEOLOGICAL SURVEY

John H. Melvin, Chief

PREFACE

The first commercial oil and gas production in Perry County was discovered in the Berea sand at Corning in the year 1891. Drilling in eastern Ohio, which had been centered principally in counties to the south and east, moved rapidly into Perry. In the haste to develop the Corning pool few logs were made of the wells drilled. Lease production either was not carefully recorded or was destroyed later as production declined and companies disbanded. The Oakfield pool, discovered several years after Corning, also offers little information which could be used in a critical analysis of the Berea sand and its producing characteristics.

The Berea has produced elsewhere in Perry County but the vast majority of wells drilled following the Corning-Oakfield development were seeking production in the Clinton. With the discovery of oil at Bremen, Fairfield County, drilling moved eastward into Jackson Township, Perry County, and the Junction City and New Straitsville pools were found in 1909. Exploration rapidly extended over all of Perry and has been successfully maintained through the years. Today it ranks as one of the most heavily drilled areas in eastern Ohio.

Although many thousands of wells have explored the Clinton, very little is understood of the erratic character changes within the formation or of the occurrence or absence of oil and gas within relatively short distances. Numerous theories have been presented and tested but the problem of locating new fields or of extending existing producing areas remains one of the most challenging in the petroleum geology of Ohio.

The files of the Ohio Fuel Gas Company, Preston Oil Company, Pure Oil Company, Waverly Oil Works Company, National Gas and Oil Corporation, and the Division of Mines were indispensable as sources for much of the data presented. Numerous members of the Survey staff contributed generously of their time and energy. To all the writer expresses his sincere appreciation.

Robert L. Alkire

Blank Page

CONTENTS

ILLUSTRATIONS

PLATES

TABLES

FIGURES

CHAPTER I

INTRODUCTION

With the discovery of oil at Corning in 1891, Perry County rapidly advanced to rank with other prolific producing areas in Ohio. This position has been maintained through the years by such notable oil fields as Junction City, New Straitsville, New Lexington, Crooksville, Roseville, and recently Clayton.

In addition to the large quantities of gas associated with oil which have been recovered, a number of extensive gas fields have been developed. The most outstanding of these are Somerset, Thornville, Mt. Perry, Rushville, and Sayre.

In the intervening years since the first well at Corning, over 5,200 test holes have penetrated the rock strata of this county, (Plate I). The following list, by townships, shows the number of wells drilled to January 1, 1950:

Township	Clinton Sand	Berea Sand
Bearfield	79	100
Clayton	305	5
Coal	352	3
Harrison	352	8
Hopewell	189	15
Jackson	840	60*
Madison	223	
Monday Creek	45	15
Monroe	41	1,500*
Pike	139	35
Pleasant	37	150
Reading	444	35
Salt Lick	40	24
Thorn	165	
Totals	3,251	1,950

Total wells drilled 5,201
* Estimated

The average depth of the Berea sand in Perry County is 1,000 feet and of the Clinton 3,000 feet. The estimated total footage drilled in search of Berea production is 1,950,000 feet and for Clinton 9,753,000 feet. Together these total 2,216 miles or approximately the distance from New Lexington to Reno, Nevada.

It would be very difficult to determine the total amount of oil and gas which has been produced in Perry County. In some instances production figures are not available and in others the records have been destroyed or the companies are no longer in business. There is no doubt though that the County ranks high among the successful oil and gas producing counties in Ohio.

PRODUCING SANDS

BEREA SAND

The Berea sand is one of the most familiar and easily recognized markers for the driller in eastern Ohio. Known also as the "grit," it occurs persistently over most of the eastern portion of the State.

MAP OF OHIO SHOWING THE LOCATION OF PERRY COUNTY

FIGURE 1

It is overlain by the Sunbury, or "Coffee," shale which is dark brown to black in color, somewhat flaky, and tough. The Berea is a fine-grained, light to bluish gray sandstone, containing varying amounts of clay, and generally hard to drill. It is underlain by the soft, clay-like, Bedford shale, which may occur in a wide range of colors from light gray to dark brown.

In Perry County, the Berea is found 600 feet below the surface at the western edge of Thorn Township and 1,100 feet along the southeastern border of Monroe Township (Plate II). It varies in thickness from a few inches, recorded in several widespread wells, to as much as 102 feet, which was logged in one well in Pleasant Township. The average thickness for the county is 35 feet.

The first production of oil and gas in the Berea sand in Perry County was discovered in August 1891, at the village of Corning in Monroe Township. The Toledo and Ohio Central Railroad, in the search for fresh water for their roundhouse, drilled unsuccessfully to a depth of 1,507 feet. At that point they struck oil in the Berea and turned the area into an oil man's paradise for the next ten years. Numerous other localities in Perry County have proved productive in the Berea sand, but none has ever approached the size or prolific character of Corning, (Plate II).

THE CLINTON SAND

The Clinton sand does not come to the surface in Ohio. All that is known of its areal extent and lithologic characteristics has been derived from the drill records of the many thousands of test wells which have penetrated it seeking oil and gas production. From this source we have found that the sand reaches a maximum thickness of more than 100 feet near the eastern edge of the State and thins gradually to the west, grading into shale along an irregular north-south line in central Ohio. It ranges in depth from nearly 8,000 feet in eastern Washington County to about 1,200 feet at its western limits.

The geologic age of the Clinton sand has not been definitely determined. It is generally considered to be a member of the Medina series (Silurian) and to correlate with the Whirlpool sandstone of the Niagara Gorge, Niagara Falls, New York. In eastern Ohio it occurs approximately 100 feet below the base of the Niagara, or "Big" limestone, in the north, 150 feet in the central, and more than 200 feet in the southern area.

In Perry County, the Clinton varies in depth below the surface from 2,450 feet in western Thorn Township to 3,900 feet in eastern Monroe Township, and increases in average thickness from 10 feet in the former to 40 feet in the latter (Plate IV). Its thickness is extremely variable in many areas due to the existence of shale partings. A number of test wells in southwestern Reading Township found no evidence of the sand, and in a small area in eastern Clayton Township as much as 70 feet has been found, although such extremes are unusual.

The Clinton is a fine-grained, compact sandstone, varying in color from light gray to pink. Pay sections are generally shot with from 20 to 120 quarts of nitroglycerine. The sand usually responds by trebling its natural production. Salt water has been recorded in several widely scattered wells, but such reports are rare and the sand is generally considered to be free of this condition.

The first productive Clinton sand well in Perry County, of which the Survey has record, was drilled by the Alberta Oil and Gas Company in 1909 within the corporate limits of Junction City, Jackson Township. In the years following this discovery, commercial oil and gas production has been found in this sand in every township in the County, (Plate III).

Clinton Sand Production

The amount of oil or gas to be derived from a Clinton sand well is based upon three very important conditions, namely, pay thickness, sand characteristics, and well spacing. The first, pay thickness, varies extremely from one pool to another and often quite appreciably in offset wells in the same pool. The second, sand characteristics, is one of the most baffling of all petroleum geology problems in Ohio. The last, well spacing, is governed to a certain extent by the two preceding conditions and by the desires of the individual operators.

Experience has indicated that structural influences have had little if anything to do with the present location of productive zones in the Clinton sand. For this reason local geologists have applied principles of sedimentation in seeking new production, but this has had only limited success.

The Clinton sand is believed to have been deposited by an advancing sea whose sediments were being derived from mountains lying to the east and northeast. The zones of oil and gas accumulation within the sand appear to have a direct relationship with the actions of this sea during Clinton time. As the sea advanced, sand bars were formed near the shore line and these are now believed to be the zones of porosity which have allowed for the accumulation of oil and gas. Much of the production in the northern portion of the State is thought to be derived from such porous sand lenses. In the central and southern areas the sand is more regular in thickness and areal extent, and production appears to be centered in zones of porosity determined by processes of sedimentation about which there is little presently understood.

To date, the most successful method employed in Perry County in locating new production is the proper evaluation of oil and gas shows in wildcat wells. Although it is not always true, oil usually lies to the west or up dip from a show of oil. Likewise, gas generally lies to the east or down dip from a show of gas. When shows or either occur in a wildcat well these facts should be considered in any further prospecting in the immediate vicinity. There is no known solution for moving away from a completely dry hole where the Clinton sand is present but porosity and permeability are lacking.

Well spacing has been extremely variable depending upon individual operators and the size of wells in a particular pool. Most of the larger companies, when acreage will permit, attempt to maintain a standard of one well to each 20 acres for oil and for gas one well to 80 or 100 acres. Much of the County has been developed by small operators so that spacing is actually much closer than the above figures.

Individual recoveries from oil wells in Perry County range from 3,000 to 35,000 barrels depending upon the three factors mentioned above. The average porosity of the Clinton sand is from 12 to 17 per cent and the permeability varies from 0 to 150 millidarcys.

"MEDINA" SAND

Numerous wells in the eastern half of Perry County have recorded a sand below the Clinton which the drillers have termed the "Medina." To date, neither the geologic correlation nor the areal extent of this sand has been determined. The only productive area so far discovered in the county is located in Bearfield and Pleasant Townships (Plate III).

The practice of extending most Clinton sand wells to the "Medina" in Perry County has only recently become general. For this reason much information regarding its presence and thickness is not available. Too, in recording the "Medina" many drillers have failed to note whether sand or the usual red shale (Red Medina) was found. In the gas producing area the sand usually occurs from 80 to 100 feet beneath the top of the Clinton sand and averages from 6 to 8 feet thick.

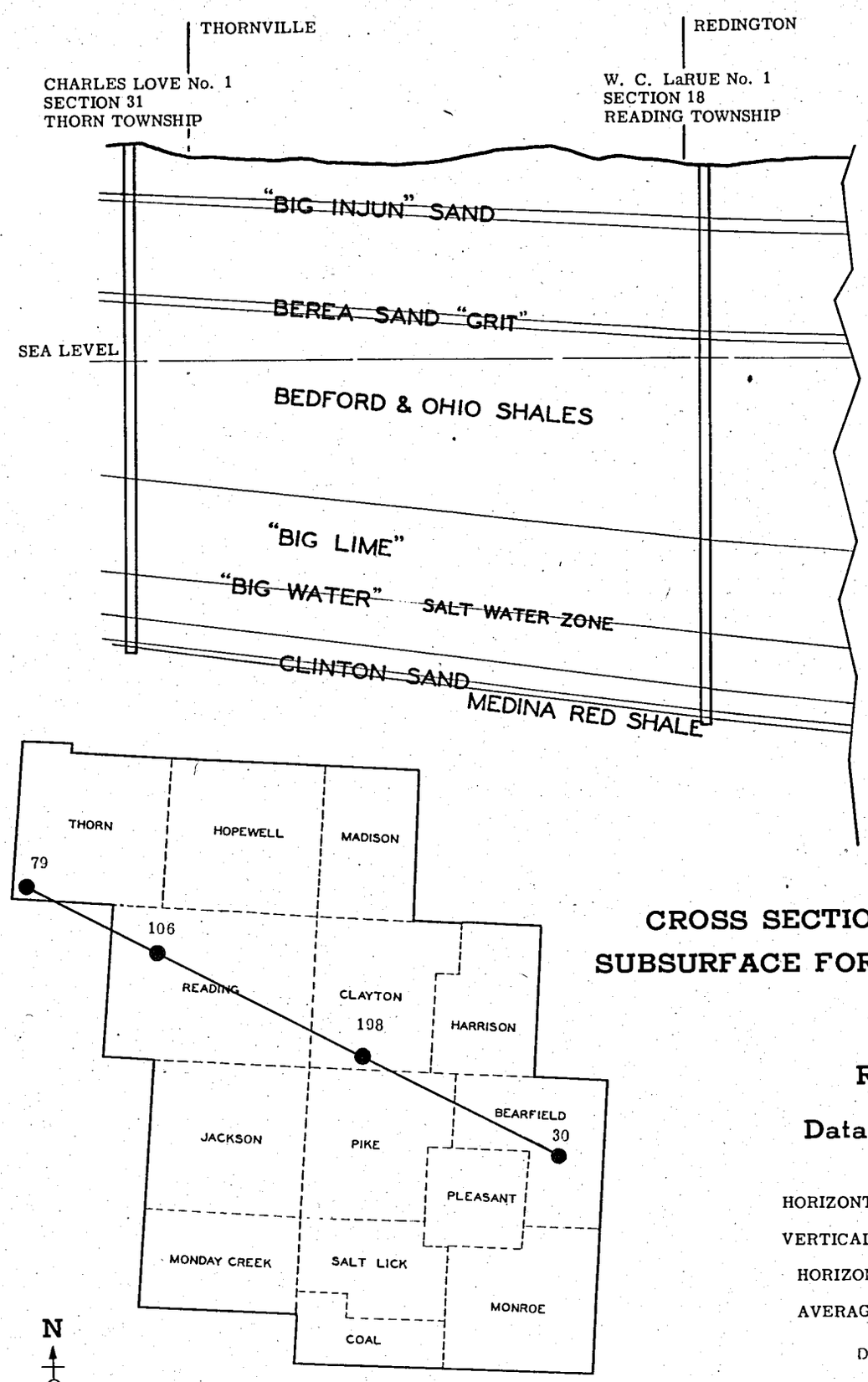
OTHER POSSIBLE PRODUCING ZONES

Very little oil or gas has been derived from the sands above the Berea in Perry County. Of the many hundreds of wells which have penetrated the Second Cow Run, Salt, Maxton, Keener, Big Injun, and Squaw sands, not more than a dozen have found sufficient quantities of oil or gas to warrant producing.

The Ohio shale series, below the Berea, has yielded small quantities of gas, but, to date, this source has been relatively unimportant.

The Newburg is believed to be the zone at the disconformable contact between the Bass Island and Niagara limestone series and the location of the Second, or "Big," water. Small sand lenses are occasionally found, but this contact is usually a porous dolomitic limestone carrying large quantities of salt water. In several small areas in Perry County, gas has been found in or near this zone.

Only two wells have penetrated formations below the "Medina" sand in Perry County. One, drilled many years ago in Monday Creek Township, stopped with a hole full of water in the Trenton



LOCATION OF CROSS SECTION IN PERRY COUNTY
(Number Reference - See Appendix)

CROSS SECTION SHOWING DIP OF SOME SUBSURFACE FORMATIONS IN PERRY COUNTY

by

Robert L. Alkire

Data from drillers' logs.

HORIZONTAL SCALE 1 INCH = 2 MILES
VERTICAL SCALE 1 INCH = 500 FEET
HORIZONTAL DISTANCE = 24.5 MILES
AVERAGE DIP = 22.5 FEET PER MILE

Drafting by D. Meacham

Plate No. 4

limestone. The other, completed in Bearfield Township in 1948, found salt water in the St. Peter horizon. In Ohio the Trenton limestone has been found productive only in the western portion. The St. Peter has produced oil and gas in several widely scattered areas of the State, but these are quite distant from Perry County. Until more test wells are drilled to formations below the "Medina" in this area, it is not possible to determine their potential productive capacities.

WELL CUTTINGS SAMPLE STUDY

Preliminary Description of Samples of Drill Cuttings from the Ohio Oil Company No. 1 Well Drilled on the D. W. Bolyard Farm, Section 6, Pleasant Township, Perry County.

	Top	Bottom
Pennsylvanian System		
Conemaugh Series		
Shale, bluish gray, calcareous	0	15
Shale, bluish gray, sandy	15	45
Allegheny Series		
Shale, bluish gray, sandy, micaceous	45	105
Sandstone, LOWER FREEPORT?, shale, bluish gray	105	120
Sandstone, LOWER FREEPORT?, white, fine-grained	120	130
Coal, MIDDLE KITTANNING	130	135
Shale, gray to bluish gray	135	165
Samples Missing	165	215
Pottsville Series		
Coal, BROOKVILLE?, sandstone, white, fine-grained	215	220
Clay, bluish gray	220	230
Sandstone, HOMEWOOD?, white, fine-grained	230	252
Siltstone and clay, gray to bluish gray	252	280
Sandstone, white, fine-grained	280	300
Shale, bluish gray	300	340
Siltstone, MASSILLON?, bluish gray, micaceous	340	370
Mississippian System		
Logan Formation		
Sandstone, white, fine-grained	370	475
Shale, bluish gray	475	654
Cuyahoga Formation		
Black Hand Member		
Sandstone, white, fine-grained	654	680
Sandstone, white to brown, fine-grained	680	684
Cuyahoga Member		
Shale, bluish gray, sandy	684	705
Clay, gray	705	725
Shale, gray to bluish gray	780	1,157
Berea Formation		
Sandstone, gray, fine-grained	1,157	1,165
Sandstone, gray, fine-grained, shale	1,165	1,174
Bedford Formation		
Shale, red to reddish brown	1,174	1,192
Shale, gray to reddish brown	1,192	1,200
Devonian System		
Ohio Shale		
Shale, gray to bluish gray	1,200	2,060

	Top	Bottom
Shale, dark gray to black	2,060	2,070
Shale, gray to dark gray	2,070	2,549
Devonian Limestones		
Delaware and Columbus		
Limestone, white to gray, dense, shale	2,549	2,575
Limestone, white to gray, shale, white chert	2,575	2,640
Oriskany Horizon		
Limestone, gray to brown, dolomitic	2,640	2,665
Silurian System		
Monroe-Salina and Niagara Groups		
Dolomite, gray to brown, dense	2,665	2,930
Dolomite, gray to dark gray, brown, dense, anhydrite	2,930	3,210
Dolomite, gray to dark gray, dense	3,210	3,230
Dolomite, white to gray, crystalline	3,230	3,240
Dolomite, white, gray to brown, crystalline	3,240	3,390
Dolomite, white, gray to brown, crystalline, impure	3,390	3,408
Dolomite, gray, dark gray to brown	3,408	3,416
Dolomite, gray, dark gray to brown, crystalline	3,416	3,425
Dolomite, gray, dark gray to brown, crystalline, impure	3,425	3,433
Dolomite, gray to dark gray	3,433	3,439
Dolomite, gray to dark gray, impure	3,439	3,457
Clinton Group		
Shale, bluish gray	3,457	3,485
Shale, red to dark gray	3,485	3,550
Shale, gray to green and reddish brown	3,550	3,609
Medina Group		
Shale, red to dark gray, dolomitic limestone	3,609	3,625
Dolomite, gray to brown, crystalline	3,625	3,635
Shale, dark gray	3,635	3,651
Sandstone, CLINTON, gray, fine aggregate	3,651	3,673
Shale, dark gray, red fragments, dolomitic	3,673	3,752
Ordovician System		
Richmond Group		
Shale, QUEENSTON, red, gray to green, calcareous	3,752	3,760
Shale, QUEENSTON, red, calcareous	3,760	3,777
Total Depth		3,777

Preliminary Description of Samples of Well Cuttings from the Metzgar et al. No. 3 Well Drilled on the Floyd Sims Farm, Section 23, Bearfield Township, Perry County.

Silurian System	Top	Bottom
Medina Group		
Shale, gray, green to red, some dolomite	3,780	3,785
Shale, dark gray	3,785	3,795
Sample Missing	3,795	3,804
Sandstone, CLINTON, gray, fine aggregate	3,804	3,845
Shale, dark gray	3,845	3,852
Shale, dark gray, some dolomite	3,852	3,925
Dolomite, gray, crystalline, sandy	3,925	3,928

	Top	Bottom
Ordovician System		
Richmond, Maysville, Eden, and Utica Groups		
Shale, QUEENSTON, red, calcareous	3,928	4,180
Shale, dark gray, calcareous	4,180	5,199
Trenton and Black River Limestones		
Limestone, white to gray, shale, dark gray	5,199	5,233
Limestone, white to gray and brown	5,233	5,255
Limestone, gray, white and brown	5,255	5,298
Limestone, brown, gray and white	5,298	5,348
Limestone, gray, brown and white	5,348	5,407
Limestone, brown, gray and white	5,407	5,592
Limestone, brown, gray and white, shale, green	5,592	5,597
Limestone, gray and brown, dolomitic, dense to crystalline	5,597	5,603
Limestone, gray, dark gray and brown, dolomite fragments	5,603	5,745
Dolomite and limestone, gray, dense to crystalline	5,745	5,752
Dolomite, white, finely crystalline, green shale fragments	5,752	5,762
Limestone, gray to brown, dense, dolomite fragments	5,762	5,845
Dolomite and limestone, gray to brown, dense	5,845	5,858
Limestone, gray to brown, dense	5,858	5,895
Dolomite, gray, dense	5,895	5,913

Original and Insoluble Residue Sample Study
by George G. Shearrow

Glenwood Formation		
Dolomite, gray, dense, finely crystalline 70%. The 30% residue is finely dolocastic gray and green shale with traces of sand	5,913	5,922
Limestone, brown, dense, 90%. The 10% residue is finely porous brown shale with traces of sand	5,922	5,930
Dolomite, gray, finely crystalline, 75%. The 25% residue is sand, frosted, rounded to subangular, with some green shale and trace of pyrite	5,930	5,945
Dolomite, gray, finely crystalline, 95%. The 5% residue is sand, frosted, rounded to subangular with trace of green shale	5,945	5,955
Dolomite, gray, finely crystalline to brown, coarsely crystalline, 97%. The 3% residue is finely dolocastic white chert, green shale, and quartz fragments	5,955	5,995
St. Peter Formation		
Dolomite, gray to brown, crystalline to dense, ranging from 0 to 80%. The residue is mainly sand grains, frosted, rounded to subangular, sometimes aggregated, with some finely dolocastic green shale and gray shale	5,995	6,062
Lower Magnesian Series		
Dolomite, gray to brown, finely crystalline, 0 to 75%. The residue is subangular sand, gray and green shale, with marked horizon of oolites at 6,062 to 6,065 feet	6,062	6,090

METHOD OF DRILLING

The rocks of Ohio, as in the other Appalachian states, are penetrated by cable tools with more ease and less expense than by any other known method. Numerous attempts to employ rotary type operations have resulted in costly bit replacements due to the presence of hard and extensive limestones and sandstones. The equipment used and the methods employed in cable tool drilling have

changed little through the years. Portable equipment has recently become available and many of the drilling contractors have found it more mobile and less costly to operate than the older style rig.

METHOD OF CASING

The casing program for wells in Perry County varies slightly from one area to another. This is due to the presence or absence of coal, and to varying quantities of salt water found in the shallow sands and within the "Big Lime" formation. A generalized casing program follows:

Casing Size	Amount	Purpose
10"	38 feet	Conductor, to protect fresh water
$8\frac{1}{4}$"	174 feet	To protect coal and fresh water
6 - 5/8"	760 feet	To shut off salt water in Big Injun sand
5 - 3/16"	3,178 feet	To shut off salt water in the "Big Lime"
2" tubing	3,412 feet	To carry production

TABLE 1

PERTINENT DATA CONCERNING OIL POOLS IN PERRY COUNTY

Pool Name	Clayton	Corning	Crooksville-Roseville	Glenford	Hopewell	Junction City	New Straitsville	Oakfield	Portersville	South Somerset	West Somerset	Thorn
Location - Township	Clayton, N. E. Reading, S. and E. Madison	Monroe	E. Harrison	W. Hopewell	S. Hopewell	S. Reading N. W. Pike	Coal, S. W. Salt Lick, S. W. Monroe	E. Pleasant S. E. Bearfield	E. Bearfield	Reading (Central)	N. W. Reading	E. Thorn
Discovery Date	1935	1891	1910	1950	1943	1909	1909	1896	1917	1928	1924	1941
Producing Sand	Clinton	Berea	Clinton	Clinton	Clinton	Clinton	Clinton	Berea	Berea	Clinton	Clinton	Clinton
Average Depth - Top Sand - Feet	3,250	1,200	3,475	2,700	2,950	2,900	3,500	1,100	1,250	2,900	2,800	2,700
Average Sand Thickness-Feet	40	20	45	20	30	30	30	20	20	30	30	35
Acres Developed	7,000	6,000	2,300	120	1,050	10,000	4,100	1,050	160	280	200	420
Wells Drilled -Total	450	1,500*	300	11	90	1,000*	425	250*	38	34	21	27
Producers	350	1,250*	250	6	63	800*	385	200*	28	28	12	19
Dry	100	250*	50	5	27	200*	40	50*	10	6	9	8
Largest Initial Well - Bbls.	575	125	510	85	260	300	330	150*	15	220	190	240
Average Initial Well - Bbls.	100	20	75	35	80	50*	50	30*	5	65	50	92
Average Well Spacing - Acres	18	10	**	20	16	14	+	8*	5	10	16	22
Est. Maximum Ultimate Production From Largest Well in Pool - Bbls.	65,000	15,000*	35,000	15,000	30,000	35,000	110,000	15,000*	3,000*	30,000	25,000	30,000
Present Status of Pool	Producing	Nearly abd. ++	Producing and drilling	Producing and drilling	Producing and drilling	Producing +++	Producing	Nearly abd. ++	Abandoned	Producing	Producing	Producing

* Estimated
** Outside of Sections 4 and 21, Villages of Roseville and Crooksville, 13 acres. In Sections 4 and 21, including town lot drilling, 4 acres.
\+ Outside of Section 29, Village of New Straitsville, 13 acres. In Section 29, including town lot drilling, 5 acres.
++ Almost completely abandoned. Occasional well drilled between old wells and ahead of natural water drive.
+++ Considerably abandoned.

CHAPTER II

DEVELOPMENT BY TOWNSHIPS

BEARFIELD TOWNSHIP

The first successful Clinton sand well in Bearfield Township, of which the Survey has record, was completed in October, 1929, on the Samuel Pettit farm in the southeastern quarter of Section 26. The sand was found from 3,939 to 3,980 feet and produced 290,000 cubic feet of gas.

Approximately ten dry holes, or comparatively small producers, were drilled between 1929 and 1942. In the latter year, two dry holes and one gas well were completed in Section 34. In June, 1943, the first successful "Medina" sand well in Bearfield Township was discovered on the William Schwartzel farm in Section 15. It produced 357,000 cubic feet natural with 1,170 lbs. rock pressure. The Clinton sand was reached at 3,845 feet and the "Medina" sand at 3,947 feet. Previously, a limited number of Clinton dry holes had been extended to the "Medina" but without apparent success. After the Schwartzel discovery, it became common practice in Bearfield and adjoining townships to extend most Clinton tests to the "Medina" sand. If both sands were found productive, they could be produced through the same tubing.

The Clinton-"Medina" sand drilling activity reached its peak during the years 1947 through 1949. Some sixty wells were completed, of which only a few found both sands non-productive. In a southwesterly direction, the mile-and-a-half-wide pool extends from Section 11 to Section 34 and into adjoining Pleasant Township. Present drilling may further extend the limits of this pool.

The average thickness of the Clinton sand in Bearfield Township is 40 feet. Records indicate that it varies from 10 to 60 feet, but in most instances, this variation is not great in offset wells. The "Medina" sand, where present, is always 70 to 100 feet below the Clinton. It rarely exceeds 10 feet in thickness and generally averages about 6 feet in this township. It is often found to be entirely absent.

Oil and gas have been found in the Berea sand at several distant localities in Bearfield Township. The first discovery occurred in 1926 in the southwestern corner of Section 27 as the result of offsetting production in adjoining Pleasant Township. The Survey has no logs of these wells or for those drilled in a small pool just west of the village of Portersville, developed a few years later. In 1929, several small gas wells were drilled in Section 1, but efforts to extend this discovery were not made until 1942. Four small gas wells and three dry holes completed the additional development.

Most of the Clinton sand wells in Bearfield Township encountered shows of oil and gas in the Berea. Salt water, so common in the townships to the north and west, has not been found extensively in Bearfield. Although it has not been productive to date, the second Berea sand is present in the southern portion of the township. The first Berea, which lies approximately 50 feet above the second, has an average thickness of 20 feet. In the northwestern portion of the township it is found at 1,100 feet and in the southeastern at about 1,200 feet in depth.

Of the 79 Clinton sand wells drilled in Bearfield Township, 24 have produced gas, 1 oil and gas, and 54 were dry holes. Thirty-two of the dry holes were extended to the "Medina" and found production.

The deepest exploratory well in Perry County was completed in October, 1948, on the Floyd Sims farm in the northwest quarter of Section 23, Bearfield Township. The log of this unsuccessful test follows:

Surface elevation 885.3 feet above sea level

	Top	Bottom
Berea sand.....	1120	1140
Clinton sand.....	3804	3845
"Medina" sand.....	3922	3928

Trenton limestone.....	5209	5913	
St. Peter sand.....	6059	6100	salt water
Total depth		6100	

Much of the township remains to be tested for Clinton sand production. The entire western half has yet to be explored, and much of the southern portion has not been sufficiently tested to abandon further investigation. The "Medina" sand, too, holds further possibilities, especially to the north of the present development.

CLAYTON TOWNSHIP

The first Clinton sand well in Clayton Township, of which the Survey has record, was drilled in 1917 on the J. L. Wilson farm in the northwest quarter of Section 21. Although this well is reported to have had an initial production of 10 barrels of oil and 3,000,000 cubic feet of gas per day, it did not immediately stimulate further search. Several tests were made some years later, but only one appears to have had success. This was also on the Wilson farm in the southeastern quarter of Section 21 and is reported to have made 60 barrels of oil.

Approximately 20 exploratory wells were drilled in the township between 1917 and 1935. These were either unsuccessful or their results not sufficiently encouraging to warrant additional tests.

In May, 1935, the Pure Oil Company completed well No. 1 on the James A. Hull farm in the northwest quarter of Section 18. It produced 24 barrels of oil and 520,000 cubic feet of gas during the first day and was the "discovery" well in what later became the Clayton oil and gas pool. A number of offset wells were drilled during the years 1936 to 1940, but activity did not reach the boom stage until 1941. In that year, and in the following three years, drilling spread rapidly to the east and to the north. Almost 10 square miles of productive area was proved by 225 oil and gas wells and the limits of the pool are now defined by 35 dry holes.

Clayton has proved to be one of the most prolific oil pools discovered in Perry County. The largest well was completed in September, 1941, by the Preston Oil Company on the M. A. Shaw farm in the northwestern quarter of Section 8. This well reached the Clinton sand at 3,307 feet and produced 575 barrels of oil during the first 24 hours. Offsets were almost equally successful. The average initial oil production over the entire pool has been estimated to be 75 barrels per well a day.

In 1944, the Preston Oil Company began a gas repressuring program on their J. H. Cookson lease in the southeastern quarter of Section 8. This program has been expanded by the company and is reviewed in Chapter III , "Secondary Oil Recovery," page 40 .

The Berea sand has failed to produce either oil or gas in commercial quantities in Clayton Township. A number of shows have been encountered while drilling to the Clinton; but in very few, if any, instances have they been produced successfully. Salt water is generally present and in many wells it accompanies a show of gas. The area is not considered promising for Berea sand production.

In Clayton Township, the Clinton sand attains a maximum thickness of approximately 70 feet in the northwestern quarter of Section 11. Its average thickness in the Clayton pool is 40 feet. The sand is present over the entire township and is relatively consistent in thickness, although it is not uncommon to find 10 to 20 feet variation in offset wells.

Of the 305 wells which have tested the Clinton sand in Clayton Township, 218 produced oil and gas, 19 found gas, and 68 were dry holes. Nearly all of the producing wells are located within the confines of the Clayton pool which encompasses one-third of the area of the township. The portion beyond the limits of the pool has only been partially tested. Many of the tests in the southern half of the township have had shows of oil and gas which appear worthy of additional exploration.

COAL TOWNSHIP

The account of the "New Straitsville pool" given in Ohio Geological Survey Bulletin 12 is too extensive to be repeated in entirety here. However, some excerpts from Dr. Bownocker's work covering this early development in the township are of interest:

"The first test of the Clinton sand was made on the Jones farm, southeast quarter of Section 19. The well was drilled by the Purvis-Martin Oil and Gas Company and was completed July 4, 1909, the Clinton sand being struck at 3,202 and found 25 feet thick. For ten months the well averaged 22½ barrels of oil per day..... In August, 1909, the company began its second well, located on the Martin land due south of the center of Section 30..... The top of the Clinton sand was reached at 3,140 feet and the bottom at 3,168. It was shot with 60 quarts of nitroglycerine, but the only reward was a small flow of gas estimated at 250,000 cubic feet per day, and 2½ barrels of oil.

"Well No. 2 on the Jones farm was located about 700 feet south of No. 1, and was completed in November, 1909. The Clinton sand was found at a depth of 3,236 feet and the bottom at 3,261 giving it a thickness of 25 feet. The top 4 feet of the sand was very soft and gave a heavy flow of gas, estimated at 2,000,000 cubic feet per day, but the closed or rock pressure was only 460 pounds..... The well was shot, but made no oil at all, and was abandoned.

"The fourth well of the company was Martin No. 2 and was located about 50 feet south of the center of Section 30. The desired sand was reached at 3,104 feet and measured 38 feet in thickness. The sand was not uniform; at the top it was quite soft while below a couple of small breaks seemed to be present. The sand was shot with a heavy charge—about 100 quarts—and a 5-barrel well secured. The company next drilled Martin No. 3, about 1,400 feet due west of No. 2 and on the same farm. It was completed early in July, 1910, and was shot with 60 quarts, but the only reward was a showing of oil and some gas.

"The Columbus Hocking Coal and Iron Company has made two tests to the Clinton on its property in this township. The first was on the northeast quarter of Section 30 and was completed late in 1909. After having been shot with 60 quarts the well began producing at the rate of 35 barrels a day..... The second test of this company was located 1,700 feet southeast of the first one. It was completed in December, 1909, and after having been shot with 60 quarts of nitroglycerine began flowing about 75 barrels of oil a day. By July 20 of the ensuing year it was producing 50 barrels, thus demonstrating excellent staying qualities. The well has never been pumped, but flows quite regularly at intervals of four hours.

"One additional well remains to be mentioned. This is on the farm of the Clancey heirs near the western edge of New Straitsville. It was drilled by the Ebenezer Oil and Gas Company and the Clinton sand was penetrated June 25, 1910. When visited the well had not been cleaned and connected with the tank, so its capacity was not determined. The density of the oil was 46° B. and the temperature 78° F. The well head is 760 feet above sea level, and the Clinton sand, which was reached at a depth of 3,106 feet, lies 2,346 below. Since this field was visited a well has been completed near the corporation line, the sand, about 25 feet thick, having been struck at a depth of 3,129 feet. It began producing oil at from 30 to 40 barrels a day.

"The Clinton sand in this pool is persistent and quite thick. Its color is usually gray and its texture varies from well to well. Little or no water occurs in the sand, but it is abundant in the Big lime."

The city of New Straitsville was engulfed by over 100 oil wells during the next few years and development moved north into Section 20 and west into Section 30. Dry holes and small producers appear to have discouraged further expansion.

In 1919, a 200-barrel well was discovered along the southern edge of Section 33. During the following 10 years, this productive area was extended into Sections 27, 28, 32, and 34. The eastern portion of the township was developed during the middle 1920's and was carried on as late as 1942.

Very few wells in Coal Township have discovered production in the Berea sand. The only one of which the Survey has record is a gas well located in Section 25. It is an offset to several wells in Salt Lick Township. Doubtless, some of the Clinton sand wells encountered varying amounts of gas in the Berea, which, in some instances, may have been produced if the Clinton was found dry.

Salt water in this sand is generally expected, and, although shows of oil and gas can be found, they may usually be expected to be insufficient to qualify as commercial production.

To date, over 350 Clinton sand wells have been drilled in Coal Township, making it one of the most heavily drilled areas in Perry County. The operations have also been very successful with 290 oil and gas wells, 12 gas wells, and only 48 dry holes.

The largest well on record is reported to have had an initial production of 330 barrels; but the initial field average at New Straitsville was about 50 barrels.

The Clinton sand is generally about 30 feet thick throughout the township. The small percentage of dry holes and consistent productive areas indicate the even character of the sand body.

Very little area remains to be explored in Coal Township. Future development, in nearly every instance, will offset either present or former producing areas.

Two secondary oil recovery projects located in this township are reviewed in Chapter III.

HARRISON TOWNSHIP

The early activity in Harrison Township is recorded by Dr. Bownocker as follows: "On November 10, 1909, a well was started on the farm of David Allen, Section 8 of Harrison Township, about two miles southwest of Roseville, and progress was such that the well was not completed until March 29, 1910..... This well started pumping 15 barrels a day, though some have reported the rate as high as 25 barrels..... It is the deepest oil well in Ohio, and one of the deepest in this country.

"A well was completed by the Ohio Fuel Supply Company in the valley at Crooksville in October, 1909, and is reported to have started producing gas at the rate of 2,000,000 cubic feet a day..... The Clinton sand, 28 feet thick, was struck at 3,409. January 5, 1910, a well was completed by the same company one location from the above, and began producing ten barrels of oil a day, and six months later was making 15 barrels. The well was first shot with 60 quarts, and later with 200..... The well head is 760 feet above ocean level, and the Clinton sand was struck at a depth of 3,407. The sand is 54 feet deep; it contained a break at 3,422 feet, and 14 feet of pay beginning at 3,444."

Nineteen oil wells were drilled during the next five years following the discovery on the Allen farm. These were confined to the southeastern quarter of Section 8 and the northeastern quarter of Section 17. The largest well, of which the Survey has record, produced about 200 barrels per day. Dry holes and light producers halted further expansion.

The period between 1917 and 1926 found little drilling activity in Harrison Township. In the latter year, a well on the Brown farm in Section 19 is reported to have made 4,500,000 cubic feet of gas in the Clinton. Offset wells soon moved into Sections 13, 17, 18, 20, 24, and 29. In 1929, the oil pool at Roseville was discovered and, within a year, 39 wells were completed in and about the city. One of the largest was the Russell German well which flowed 185 barrels after shot. The Clinton was reached at 3,469 feet with oil pay from 18 to 45 feet in good sand.

Several successful wells were found in Section 5 in 1930 and an occasional test was made in other sections during the following years. In 1948, a small oil and gas pool was struck in Section 33 and, in 1949, a number of successful wells were completed in the area between Crooksville and Roseville.

Berea sand production in Harrison Township has been negligible. Two wells in Section 9, the largest of which had a natural open flow of 230,000 cubic feet, comprise the entire productive area so far discovered. Salt water occurs in this sand over much of the township so that the outlook for future production is not encouraging.

Along the western edge of Harrison Township, the Clinton sand averages 40 feet in thickness and increases to approximately 50 feet along the eastern edge. Some 352 wells have penetrated the Clinton; 67 produced gas, 222 both oil and gas, and 56 were dry. Nearly three-fifths of the area of the township has proved productive.

The southwestern portion of the township is the only remaining area of size yet to be tested. Eight widely scattered dry holes and one small gas well have apparently discouraged further prospecting. This is a rather large area to be condemned by so few unsuccessful tests.

HOPEWELL TOWNSHIP

In Bulletin 12, Dr. Bownocker reports that four wells have been drilled in Hopewell Township: "One along the eastern line of Section 11 produced some oil, but the well has been abandoned. The other tests were as follows: A dry hole along the eastern border of Section 17, a dry hole on the eastern side of Section 12, and one on the southeastern quarter of Section 24."

Thus, from Dr. Bownocker's observations, we can place the date of the first wells in Hopewell Township in the years 1908 to 1910. The failure of these wells discouraged further attempts for exploration until 1924. In that year, a dry hole was drilled in the southwest quarter of Section 3. In the following year, 1925, 2 gas wells and 1 dry hole were drilled in Section 1; 2 gas wells and 1 dry hole in Section 2; and 1 dry hole in Section 20. During the years 1926 to 1930, wells were drilled in Sections 5, 7, 8, 9, 11, 15, 17, 21, 22, 28, 29, and 30. Small quantities of gas and some oil were found in Sections 5, 8, 28, and 30. The remainder of the test holes were dry.

Successful development in Hopewell Township began in 1943, in the southeastern corner of Section 34. The Industrial Gas Corporation, in that year, discovered 470,000 cubic feet of gas with 900 pounds rock pressure in the Owen Swinehart No. 1 well. In the northeast quarter, the Earl Baker No. 1 well produced 35 barrels of oil the first 24 hours after shot. These wells led to the discovery of the Hopewell oil and gas pool which, in turn, led to the rapid development of much of the southern half of the township. Drilling is still in progress. The most successful area, to date, lies in the northwest quarter of Section 34 and the northeast quarter of Section 33. Three wells on the H. C. Albert farm in Section 34 have produced 250, 260, and 220 barrels per day after shot.

The only productive area so far developed in the Berea sand in Hopewell Township is at the junction of Sections 24, 25, and 26. Six gas wells and an equal number of dry holes confined the area of production to approximately 300 acres. Initial open flows from the six producing wells averaged 250,000 cubic feet per day, and 20 feet of Berea sand was found at 800 feet in depth.

Many of the Clinton sand wells drilled in the township have recorded salt water in the Berea. Other wells have failed to make note of this condition. Generally, it is believed that the area is not favorable for Berea production because of the probable presence of salt water in the sand.

Although Clinton sand dry holes are somewhat systematically scattered over Hopewell Township, there still remains much area worth further prospecting. The sand varies in thickness from 20 feet in the northwestern corner to approximately 40 feet along the eastern and southern edge. It maintains good character with few shale breaks recorded, and no logs have recorded the sand missing entirely.

To date, some 189 wells have been drilled into the Clinton sand in Hopewell Township. Of these, 51 have produced gas, 63 found oil and gas, and 75 were dry holes.

Successful development is presently going on in Sections 17, 18, 27, 32, 33, 34, and 35. This will undoubtedly lead to further testing elsewhere in the township.

JACKSON TOWNSHIP

In the following paragraphs from the "Bremen Oil Field," (Bulletin 12) Dr. Bownocker reviews the first Clinton sand oil and gas development in Jackson Township.

"Naturally the success achieved by drilling a few miles to the west aroused the enterprising citizens of Junction City, and on March 14, 1909, the Alberta Oil and Gas Company began drilling within the corporation. The Clinton sand was found at a depth of 2,854 feet, and after shooting with

40 quarts it began flowing oil at the approximate rate of 150 barrels a day. By the middle of July, 1910, it still flowed occasionally, but the production had dropped to 15 barrels per day. The well was sufficient to start the boom, and others were sunk as rapidly as possible. By the date just given, 65 wells, only one of which was dry, had been completed within the corporation of 640 acres, and three strings of tools were at work. Since March, 1910, work has been quieter and the excitement has subsided. Probably the decrease in the price of oil and the fear of further reductions have been the most potent agency in checking the drill. Wells have varied greatly in size, from those scarcely large enough to warrant tubing to Crown No. 2, which was shot about December 1, 1909, and started flowing at the rate of 300 barrels a day. By the middle of the following July its daily output had dropped to 30 barrels. The Perry-Noble No. 3 was another large producer. It was shot April 16, 1910, and started flowing at the rate of 225 barrels a day. Three months later this had dropped to 45 barrels. Of the 65 wells in the corporation, not more than a half-dozen started at 10 barrels or less. Wells of this size are pumped from the start; others flow at first.

"Much drilling has been done and is still in progress south and west of Junction City, the results being similar to those given for other parts of the Bremen field. The limits of the territory have not been determined.

"Some farms in the vicinity of Junction City have been leased since the drilling of the Kochensparger well in 1902. The price has varied from 50 cents to $3.00 per acre, the common figure being $1.00."

By 1920, nearly two-thirds of the township had been found productive. Scattered tests in the remaining area were either dry or produced only shows. Occasional offset wells have since been drilled without success.

In many of the early wells, considerable quantities of gas were encountered in the Berea sand. Since oil was the primary objective, these gas pays were cased off, and the wells continued to the Clinton. After 1920, when the oil boom had subsided, many of these areas were redrilled and the gas recovered.

The Survey has logs of only a few of the 800 Clinton sand wells drilled in Jackson Township. In many instances logs were either not made or have been lost in the intervening years. The development of the Bremen oil field is one of the most interesting and successful in Ohio's history. Dr. Bownocker has given a very excellent account of the beginning of the field, but much development occurred after his review was published. No effort will be made here to carry the story forward. It is our hope that another "Bremen Oil Field" may be prepared in the future and published as a sequel to Dr. Bownocker's excellent beginning.

MADISON TOWNSHIP

"The only test of which the Survey has knowledge in Madison Township is in the southwestern quarter of Section 5. A flow of gas was secured, but apparently the result has not encouraged further drilling." This was related by Dr. Bownocker on page 35 of Bulletin 12.

We have not located this well definitely in our present records, but we believe it is the W. L. Bolen well which was drilled in 1908 with a reported open flow of 500,000 cubic feet of gas. A gas well of that size in those days, when oil was the primary objective, would have been of little interest, and, therefore, possibly abandoned. Nevertheless, this is the first well in what was later to be the Mt. Perry gas pool. Our records are not complete enough to trace the progress of this pool, but it appears to have developed gradually until 1939. It extends northward from the town of Mt. Perry along the eastern portions of Sections 6 and 7 and along the western portions of Sections 5 and 8. In all, 21 gas wells and four dry holes have more or less defined its limits.

The next well of which we have record in the township was drilled in 1909 on the E. M. Krofft farm in the northeastern quarter of Section 9. It recorded the Clinton sand from 3,225 to 3,290, but was dry. A well drilled in 1924 on the Alonzo Burgess farm in the southeastern quarter of Section 18 is reported to have produced 1,500,000 cubic feet of gas. No effort was made to extend this discovery until 1938. At that time, several rather distant offset wells were drilled to the north and east, but were either small producers or completely dry. Subsequent drilling during 1940 enlarged

the original productive area and indicated that this pool, although separated by dry holes, apparently is an extension of the gas pool to the north of Mt. Perry.

A small oil pool was developed on the Melick farm along the waters of Turkey Run in Sections 20 and 21. Our records of this pool are not complete, but we believe the development began about 1934 and ended in 1938. Approximately 20 producing wells were drilled, the largest of which is reported to have produced 55 barrels. This unique productive area comprised about 135 acres and is now completely surrounded by dry holes.

Two small oil and gas wells were completed in 1942; one in the northeast quarter of Section 32 and the other in the southwest quarter of Section 33. These were the first productive wells in Madison Township to become a part of the highly productive Clayton pool in Clayton Township which adjoins Madison on the south. Subsequent drilling developed a mile-wide productive belt extending northeastward into Sections 28, 27, 22, 21, and 15. The largest producer of which we have record made 155 barrels and was drilled in 1948 on the Rolland Beard farm in the southwestern quarter of Section 32. The Clinton sand was found at 3,231 feet below the surface.

The Berea sand contains salt water over much of Madison Township. Of the many wells drilled to the Clinton sand, only a few record shows of oil or gas in the Berea. It is unlikely that it will become a source for future production in this township.

To date, January, 1950, some 223 test wells to the Clinton sand have been drilled in Madison Township. Of these, 47 have found gas, 94 produced both oil and gas, and 82 resulted in dry holes. Approximately one-half of the area of the township has proved productive. The remaining portion has been somewhat thoroughly tested and does not appear encouraging for large-scale new production.

MONDAY CREEK TOWNSHIP

On page 31 of the "Bremen Oil Field," (Bulletin 12) Dr. Bownocker gives the following interesting review of early developments in Monday Creek Township:

"About a score of wells have been drilled in this township, with but little success. The following record of the Perrill well at Maxville shows the succession of the important strata as far down as the Clinton:

	Thickness Feet	To bottom of formation Feet
Drive pipe	27	27
Fresh water at 250 feet		
Berea sand	25	830
Casing 6½ inch, 840 feet		
Bedford and Ohio shales	1,128	1,958
"Big lime"	810	2,768
Gas at 2,426 feet		
Water at 2,442 feet		
Clinton sand	33	2,973
Bottom of well 2,984 feet		

"This well was completed in July, 1909, and is reported to have begun producing 40 barrels of oil a day; and a year later, about one-fourth as much.

"The Columbus Hocking Coal and Iron Company has drilled a number of wells. One on the southeast quarter of Section 22 gave a moderate flow of gas which is piped four miles to Kachelmacher's brick yard and used in burning brick. Another well, drilled a few hundred feet to the south, was dry. The company drilled also in the southwestern corner of Section 11, but found only a shell of the desired sand; a depth of 3,565 feet was reached. A well in the southeastern corner of Section 13 was dry.

"Other wells were drilled in this township as follows: a small oil well and a dry hole on the southeastern quarter of Section 4, and a dry hole along the western border of the section; two dry

holes on Section 5, one the southeastern quarter, and dry, and one near the northern line of the section, the latter making a showing of oil; a small oil well and a dry hole on Section 7, the former on the northwestern quarter and the latter on the southeastern; a dry hole on the northwestern quarter of Section 8; two wells on Section 9, an oil well that started about 30 barrels on the northeastern quarter and a dry hole on the southeastern; a dry hole on the northwestern quarter of Section 10; a dry hole drilled by the Carter Oil Company on the northeastern quarter of Section 19, and a small oil well, drilled by the same company, and now abandoned on the same quarter of Section 20."

From the New Lexington Herald, September 12, 1907, we find the following interesting item reprinted from the Logan Journal:

"The Standard Oil Company is becoming hungry for leases. The known oil territory in Ohio is becoming exhausted and it will be necessary for that big oil company to secure more land on which to put down additional wells. For the past two weeks field agents have been operating in all sections of Monday Creek and Jackson Townships, Perry County.

"The incentive for this activity is no doubt the big oil well which was struck at Bremen, 7 miles northwest of this section recently. Previously, hundreds of acres have been leased in these two townships, but in recent years, have been allowed to lapse..... The lease rental given the farmers is 25 cents per acre for the first year and $1.00 per acre thereafter.

"One attempt has been made to discover gas or oil in that section, but the hole was a duster. It was located on Coalbrook Creek, three miles north of Maxville. Much trouble was experienced with the well, but after shooting, but a slight trace of the oleogenous stuff was found. With an oil gusher at Bremen, it is thought something of value either in the oil or gas line will be discovered by future drilling."

From the January 7, 1909, issue of the New Lexington Herald, this item appears: "Maxville The oil fever is raging in the southwest part of our township. The Eureka Company will drill two more wells at once, and the Carter Oil Company will drill on the Harvey Howdyshell land on the Logan Road, a short distance south of Maxville; hence the demand for lumber and coal is on the increase."

Unfortunately, the "oil fever is raging" period was shortlived. The Eureka tests were both dry and the Carter wells only small oil producers. During the years 1909 and 1910, some 28 wells were drilled to the Clinton sand in search of production. Nearly every section in the township received at least one trial hole. They were all failures from the standpoint of commercial production. Only six had shows of oil, which, after shot, produced as much as 10 barrels.

With these discouraging results, all efforts to find production ceased until 1918. At that time, offset wells in the Gore field in Falls Gore Township, Hocking County, to the south, moved into Sections 23 and 24. This productive area proved small with only 7 oil wells and as many dry holes defining its extent. The largest of these wells is reported to have made 75 barrels per day. The others produced considerably less. The only successful development of either oil or gas in Monday Creek Township, to date, covers an area of not more than 100 acres.

The deepest well in the township was completed in March, 1911, on the A. H. Patton farm in the southeastern quarter of Section 17. A partial record follows:

	Top	Bottom	
Big Lime.....	1929	2696	Salt water 2475
Clinton sand.....	2846	2869	Very small show of gas, oil, and water at 2860
Slate and shells.....	2869	4168	
Trenton.....	4168	4288	Salt water, hole full
Total depth.....		4288	

The show of water, recorded in the Clinton sand in this well, has also been reported in several others in this township, one of the very few areas of such occurrence in Perry County.

Approximately 6 wells in this township have found production in the Berea sand. These are located immediately south of the village of Maxville. The largest of the wells is reported to have had an initial production of 500,000 cubic feet per day. The sand lies approximately 725 feet below the surface. Elsewhere in the township salt water has been found at this horizon.

In all, 45 wells have tested the Clinton in Monday Creek Township. One produced gas and 7 both oil and gas, all in Sections 23 and 24. The remaining 37 dry holes, or small producers, are scattered throughout the township and portray a dismal outlook for future production. However, possibilities for several small pools are not entirely eliminated, especially as offsets to some of the reported good shows of oil in previous wells. A large area along the eastern edge of the township has not been tested, and, therefore, cannot be entirely condemned.

MONROE TOWNSHIP

It is difficult to place the date of the first well that reached the Clinton sand in Monroe Township. Many hundreds were drilled to the productive Berea sand during the development of the Corning field before 1900. It seems logical to assume that some courageous drillers, with dry holes in the Berea, probably explored deeper horizons and, therefore, might have reached the Clinton. The Survey files are far from complete for this township, so it is not possible to estimate such a date.

The first test of which the Survey has record was drilled by the Big Basin Oil Company, in 1921, on the Edgar Erwin farm in Section 32. The Clinton sand was found from 3,713 to 3,764 feet. The first seven feet was broken and the remainder was very hard and limy with only a small show of gas at 3,759 feet. In the following year, another dry hole was completed on the W. T. Marshall farm in the northwestern corner of Section 31. In 1923, the Ohio Fuel Supply Company completed a test on the Corning Mining Company property in the center of Section 22. It reached the Clinton at 3,684 feet, and, after drilling 32 feet of sand with no pay, was abandoned.

As the New Straitsville field progressed eastward, it entered the southwestern portion of Monroe Township. In January, 1936, the Kachelmacher Estate completed the Hemlock Coal No. 1 well in Section 30, with an initial production of 101 barrels. Five additional wells were completed during the following year. Dry holes now surround these producers, so it is unlikely that the productive area will be enlarged. During 1943 and 1944, eight wells were drilled in Section 31 by the Preston Oil Company; four produced oil, two gas, and two were dry. The largest of the oil wells produced 90 barrels.

The deepest well, to date, in Monroe Township, was completed in 1948 by the Ohio Fuel Gas Company in the northeastern quarter of Section 35. The Clinton sand was found from 3,875 to 3,902 feet and the "Medina" sand from 3,954 to 3,976 feet. A total depth of 3,976 feet was reached without finding production.

No attempt will be made here to review the discovery and early development of Berea sand production in this township. On pages 257 to 265 of Bulletin 1, Geological Survey of Ohio, Dr. J. A. Bownocker gives an interesting account of this under the heading, "The Corning Oil and Gas Field."

In the years since Dr. Bownocker's report, additional wells have added to the productive area of the Berea. It now covers almost three-fourths of the township, extending over a wide area from the northeast corner to the Clinton sand production in the southwest corner. Although occasional dry holes have been drilled, much of the northwest and southeast portions of the township remain to be explored.

Forty-one wells have tested the Clinton in this township; twenty-two of which produced oil or gas, and nineteen of which proved dry. The greatest portion of this testing was done in the southern half of the township.

The Clinton sand appears to reach its maximum thickness in Monroe Township in the southwestern corner, where the average is 40 feet. From scattered wells over the remainder of the of the township, the average thickness is 30 feet.

So little testing of the Clinton has been done in Monroe Township that it would be pure speculation to predict definitely the presence or absence of future oil and gas possibilities. The entire northwestern area is open for further prospecting. The Clinton-"Medina" gas pool in Bearfield Township, to the north, trends toward the Clinton production in the southwestern corner of Monroe. The "Medina" sand has been found in several wells in that area, even though dry and thin. At the present time, one dry hole in Section 1 has halted further efforts to extend the Clinton-"Medina" pool into Monroe Township. Additional tests to trace this potential production in that area appear justified.

PIKE TOWNSHIP

As drilling moved eastward from the discovery of oil at Bremen in Rush Creek Township, Fairfield County, it passed across Jackson Township, Perry County, and into the western portion of Pike Township.

At the time of publication of the "Bremen Oil Field," (1910) about twelve wells had been drilled in Pike Township. All were either in or near New Lexington and only about half had been successful. In the following year, the boundaries of the pool were confined to the area immediately west of New Lexington and as far south as the center of the township. Numerous attempts have been made to extend the field, but all have been unsuccessful.

Production from the Berea sand in Pike Township is confined principally to the southeastern corner. Here, in Sections 34 and 35, some 25 wells have been drilled, 18 of which have produced gas, 3 oil and gas, and the remainder were dry. Elsewhere in the township, an occasional occurrence of salt water or show of gas or oil is recorded.

The development in Sections 34 and 35 began in 1946 and to date some 700 acres have proved productive. The Berea sand occurs, approximately 30 feet thick, at an average depth of 700 feet. The wells were relatively small, averaging 100,000 cubic feet after shot, and the initial rock pressure was 260 pounds per square inch.

Much of Pike Township remains to be tested for potential Berea sand production. The small volume found in the wells already completed is not encouraging.

Of the 140 Clinton sand wells drilled in Pike Township, 110 are in the producing area. The remaining 30 are scattered and have offered little encouragement for further exploration. Many failures found the sand broken by shale, and in any area where this occurs, little possibility for commercial production may be expected.

PLEASANT TOWNSHIP

On page 33 of Bulletin 12, Pleasant Township is recorded as follows:

"At least two Clinton wells have been sunk in the township. In the spring of 1909 one was drilled on the McGonagle farm, a half mile south of Moxahala..... The Clinton sand was found 52 feet thick, but it contained not even a smell of oil or gas. About a year later the Penn Oil Company, of Pittsburgh, drilled a well two miles south of Moxahala, on land of James Kelly, but it, too, was a failure."

The Survey records indicate the next Clinton sand test well was drilled in Section 24. It, too, was unsuccessful. The first Clinton sand production was discovered in 1943 with the completion of the Willard Rugg well in the northwestern quarter of Section 6. The sand was encountered at 3,645 feet; oil and gas at 3,661 feet, and the big gas at 3,673 feet. It produced 2,000,000 cubic feet of gas and 2 barrels of oil the first day. An offset well to the northwest, drilled by the Ohio Oil Company, initially produced 660,000 cubic feet of gas and 14 barrels of oil. Two other offsets were failures.

Intensive development of the Clinton sand in this township actually began in February, 1947, when the Denmen Estate well in Section 33 was brought in with 2,100,000 cubic feet in the Clinton sand, and 400,000 cubic feet in the "Medina." The well later proved to be an extension of the Sayre Clinton-Medina sand gas pool of Bearfield Township. During 1947, 1948, and 1949, thirty-two wells were drilled in Sections 4, 21, 28, 29, 31, and 33. Eleven produced gas and 19 were dry in the Clinton sand. Of the 19 dry, 16 found gas in the "Medina."

The Berea sand lies approximately 1,100 feet below the surface in Pleasant Township. It varies in thickness from 15 to 45 feet and has proved productive of both oil and gas. Although small amounts of both have been found in scattered wells, the principal producing area is located in Sections 32 and 33.

The search for Berea production is this township began prior to 1900, but much of the area which comprises the oil pool in Sections 32 and 33 was developed between 1930 and 1940.

Salt water has been found in the Berea in a number of wells, but it does not appear to be of sufficient extent to eliminate the possibilities for future oil and gas production.

Approximately two-thirds of Pleasant Township remains to be tested for possible Clinton sand production. Of the 37 wells drilled, 28 are located in the eastern third. The sand averages 40 feet in thickness, and seems to be consistent and free of extensive shale breaks.

READING TOWNSHIP

Under the heading, "Reading Township," Dr. Bownocker reports the following in Bulletin 12: "In the northwest quarter of Section 32, seven wells have been drilled, of which three produce oil. In the southern half of Section 35, out of five wells drilled, two oil producers were gotten. On the land of the St. Joseph's Literary Society, four gas wells have been secured in the southwestern quarter of Section 14..... Occasionally, a small oil or gas well has been secured elsewhere in the township, but the usual result has been a dry hole."

The Survey has not been able to obtain the logs of any of the wells mentioned by Dr. Bownocker. But from his report and from newspaper accounts at that time, we are able to place the first wells drilled in Reading Township in the year 1907. They were located in the southeastern quarter of Section 36W and in the southwestern quarter of Section 31. These wells formed the northern extension of the Bremen field which was proving highly successful in Jackson Township which adjoins Reading on the south.

Shortly after the above discovery, six oil wells and five dry holes were drilled in the southeastern quarter of Section 35E. In the northwestern quarter of Section 32, out of ten wells drilled, only five were successful.

From the initial "discovery" well in 1907 until 1910, approximately 100 test wells were drilled in Reading Township. For the most part, these were located in the southern portion and only half were successful producers. The productive areas were as follows: a small gas pool in Section 11W, another in Section 14E, a small oil and gas pool in Section 26W, one in Section 32, and the two previously mentioned in Sections 35E and 36W.

Activity in the township subsided after this period of boom development until 1924. In that year, a small oil well was discovered in the southeastern corner of Section 11W. Additional offsets were completed in 1926, 1928, and 1929. The center of this small oil and gas pool was found to lie in Section 12W. In all, some 13 wells were drilled, ten of which were producers. Three small oil and gas wells were drilled in the southeastern quarter of Section 13W in 1927. Several gas wells were also discovered in the northeastern corner of Section 24W in the same year, and several small gas wells were found in the southeastern corner of Section 36E.

The most successful development during this period occurred in Sections 19 and 20. In the eastern portion of Section 19, a small oil field was developed in 1928. Twelve successful wells were drilled ranging in initial production from 15 to 220 barrels. The entire pool covered about 200 acres and extended slightly into Section 20. A pool of several small wells was also developed in the center of Section 20.

In the year 1930, drilling activity began moving to the northern half of Reading Township. Eight good gas wells drilled in the northern portions of Sections 16 and 17 discovered the Somerset gas pool, which was to reach its peak of development some fifteen years later. Three good gas wells were found in Section 13E in 1935. Sections 5, 6, 7, 8, and 9 were discovered to be a part of the Somerset gas pool during the years from 1934 to 1939.

The period between 1940 and 1947 found the Somerset pool extended to the north and to the east to the township line. In Sections 1 and 12, the western extension of the prolific Clayton oil and gas pool was found.

The largest well in the Somerset gas field, of which the Survey has record, was drilled in 1930 on the Harry Lehman farm in the northwest quarter of Section 15. The Clinton sand was encountered at 3,015 feet below the surface. The initial rock pressure in the area was approximately 900 pounds per square inch.

The Clinton sand varies in thickness in Reading Township from 20 feet in the northwestern corner to nearly 50 feet along the eastern edge of Section 12. The average thickness over the northern half of the township is 35 feet and 30 feet over the southern half. The only area in which the sand has been found completely absent is in the southwestern portion of Section 30, the northeastern corner of Section 36W, and the northwestern corner of Section 31.

Approximately 20 wells in Reading Township have discovered gas in the Berea sand. They occur either in relatively small groups, or usually as a single well. The largest of these groups is located in Section 22 and is comprised of seven wells. From these records, the Berea was encountered near 750 feet in depth with an average sand thickness of 20 feet. The best producer is reported to have made 600,000 cubic feet per day.

In nearly every instance, the discovery of production in the Berea sand in this township occurred while drilling to the Clinton. When the Clinton was found dry, the well was plugged back to the Berea. If the Clinton produced, a nearby offset was usually then drilled to recover the Berea sand gas.

Salt water and shows of gas and oil have been found closely associated in the Berea over much of Reading Township. The areas of brine saturation have not been extensive, so that chances for additional production from this horizon are not entirely eliminated.

Nearly all of Reading Township has been tested for oil and gas production in the Clinton sand. Of the 444 wells drilled to date, 122 have encountered gas, 153 produced both oil and gas, and 169 resulted in dry holes. Most of the dry holes have had shows of oil or gas. A number of these in the less heavily drilled southern half of the township appear worthy of further investigation. Several areas between existing fields have not been tested sufficiently to condemn possible future production.

The remaining areas to be tested are limited and such new pools as may be discovered will be comparatively small.

SALT LICK TOWNSHIP

Drilling methods have changed little since 1900 and the operational handicaps encountered then are not unlike those which befall the drillers today. For this reason, the account by Dr. Bownocker, on page 32 of Bulletin 12, under the heading, "Salt Lick Township," is presented:

"But one well has been drilled in this township, and that was about one-half mile west of McCuneville. The elevation of the well head is 797 feet above ocean level.

"At 1,510 feet the drill struck a sandstone about one foot thick which contained a heavy black oil. The sand was shot with 8 quarts and the well pumped; it yielded five barrels the first day, three the second, and then two a day for approximately two weeks. The driller calls this sand the Gordon. It lies in the Ohio shales and is probably of local extent only; at any rate it has not been reported elsewhere in Ohio. Not satisfied with the production, the tubing was drawn and the drill started for the Clinton. Work progressed favorably until the "Big water" was reached at 2,756 feet. Casing was inserted at about 2,800, and after pumping 2,600 feet of water from this, the hole was dry until 20 feet advance was made, when another heavy flow was encountered and the well filled to within 20 feet of the top. Again the casing was set and drilling resumed. Seven additional times heavy flows of water were found, and each time the casing was reset. The last flow was only 6 feet above the base of the "Big lime," and the casing was finally set 8 feet below the base of that formation. To add to the trouble the packer broke twice, necessitating drawing the casing each time, making 10 changes in all.

"At a depth of 3,070 feet the well began caving and of course this delayed the work, but the liner was finally set on top of the Clinton sand. This formation was 32 feet thick and varied somewhat in color as follows:

	Feet
Gray sand	12
White sand	1½
Pink sand	5
Lighter colored sand, gray near the bottom	13½

"The next step was to shoot the well, for the sand made a showing of oil. Fifty quarts of nitroglycerine increased the production to such an extent that the bailer came up filled with the fluid and it was decided to shoot again. Accordingly, a dump shot of 200 quarts and 100 feet of loaded anchor were placed in the well. The liner was then withdrawn, and after two unsuccessful efforts to discharge the shot, the line was run and a bridge found about 30 feet above the top of the anchor. On the following day the driller ran down the tools to remove the bridge, and after about ten minutes' work it gave way and discharged the shot. The tools were blown up about 300 feet in the hole and torn loose from the cable, but were removed without great difficulty. Next an effort was made to clean the well. As soon as the bottom of the casing was reached, water again appeared and could not be controlled. Thinking that the casing was leaking, it was again withdrawn, but found to be all right. Apparently the shoulder of Clinton sand on which it rested had been partly blown away, letting the water flow in below. Not knowing what to do, and completely discouraged, the company plugged the hole, drew the casing, and quit."

The next well, of which the Survey has record, was drilled in 1911 by the Peabody Coal Company on their property in Section 4. The Clinton was reached at 3,223, and, although 56 feet of sand was present, it was broken by shale breaks and had only a show of oil.

The New Straitsville oil and gas pool in adjoining Coal Township was being developed at this time, and, as drilling progressed northward, it moved into the southwestern corner of Section 21. Twelve oil wells were found, but 5 dry holes prevented further expansion of this pool into Salt Lick Township.

A small pool was discovered in 1921 on the property of the Sunday Creek Coal Company in Section 23. The Clinton sand was topped at 3,393 and oil was found at 3,404 and 3,418 feet. The well is reported to have produced 100 barrels after shot. Several offset wells were drilled but were comparatively small. Outlying dry holes have discouraged further development.

Two wells were completed in Section 18 in 1940 but they were not of commercial value and no effort has been made to offset them.

Most of the wells drilled in Salt Lick Township have found salt water present in the Berea sand. Two relatively small pools have been discovered. The first, found in 1929, is located in Sections 10 and 11. Four gas wells and 4 dry holes were completed. The largest of the wells produced 1,250,000 cubic feet of gas at total depth of 947 feet. The second pool is in Section 24 in the southeastern corner of the township. It was discovered in 1948 and to date 5 gas wells and 1 small oil well have been completed. The Berea sand is found at approximately 975 feet and varies from 9 to 20 feet in thickness. The largest well in this pool is reported to have produced 1,500,000 cubic feet per day. Five dry holes have halted further development.

Many of the dry holes and small producers drilled in this township have found the Clinton sand to be soft or to have shale partings. Here, as elsewhere in Ohio, whenever shale breaks are numerous or extensive, dry holes or small producers are found. In Salt Lick Township, the Clinton sand averages 30 feet in thickness, but the persistence of shale partings over much of the area forecast a poor future potential production. Some 40 wells have already been drilled to this horizon, but only half have shown production, many of which were comparatively small.

THORN TOWNSHIP

The following articles from the NEW LEXINGTON HERALD report the first drilling activity in Thorn Township.

September 20, 1906:

"The New Perry County Oil, Gas, and Fuel Company, recently organized at Thornville, this county, has been incorporated in the sum of $10,000 during the week. The stock of the company is divided into 400 shares, which sell at $25 per share. It is the intention of the promotion to drill for oil and gas in the vicinity of Thorn Township."

On January 10, 1907, this item appeared. "Thornville—The home gas company expects to begin work on a well just as soon as the derrick can be built. Everyone is hopeful that they may find gas."

From the NEW LEXINGTON HERALD on May 30, 1907: "Thornville—The gas well is a fixture and the people of this community can bow to the home company for their pluck in this matter. The well is now capped and under control, and we trust our people will be able to induce a manufacturing company of some sort to locate here. It will mean much to this place, otherwise if the product of the well is sold and piped away, we will soon forget that we have any gas here. We understand that more of the territory will be developed at once. This is said to be ר five million well."

And on December 5, 1907: "The Perry Oil and Gas Company struck a big gasser in its field near Thornville Friday afternoon. It is claimed that the well will have a capacity of 12,000,000 cubic feet. This is the third good strike made by the Perry Company which is made up purely of local capital, and indications are good for far better ones."

It is unfortunate for the civic-minded citizens of Thornville that they were unable to entice industry to their new-found gas. Instead it was sold to a pipe line company and enjoyed by people elsewhere.

The development of the Thornville pool progressed rather slowly until 1919. By that time, 63 gas wells and 13 dry holes had determined its productive area. The original rock pressure was 750 pounds per square inch. The Clinton sand was found to vary in thickness from 10 to 20 feet and the pay section was usually in the upper 5 to 8 feet. Surface elevation in the pool area is around 900 feet above sea level, and the top of the sand was encountered at about 2,395 feet deep in Section 6 and 2,450 feet in Section 3. The principal operators in the field were the Ohio Fuel Supply Company and the Logan Natural Gas Company.

Sporadic tests, which produced either failures or small producers, were made over the township from 1918 until 1935. In the latter year, the Somerset pool of Reading Township was extended into Sections 35 and 36, in the southeastern corner of Thorn. Twelve gas wells and 3 dry holes defined the limits of this extension during the following year. The Clinton sand was found at 2,000 feet.

In June, 1941, Davis and Hazlett drilled in the W. J. Starkey No. 1 in the northwest quarter of Section 13. The well produced 240 barrels of oil after shot and discovered the Thorn pool. Subsequent offset drilling during the next two years resulted in 19 oil and gas wells and 8 dry holes. The producing wells ranged from 15 to 240 barrels of oil with as much as 1,500,000 cubic feet of gas per day. Records show the Clinton sand varied in thickness from 20 to 35 feet. The pay zone usually occurred about 3 feet below the top and the sand varied from 2 to 8 feet in thickness. The principal operators were Davis and Hazlett, the Ohio Oil Company, the Industrial Gas Corporation, and the Palm Oil Corporation.

In August, 1940, the Ohio Fuel Gas Company completed the Edward Hanby No. 1 in the northeast quarter of Section 28. This well produced 2,270,000 cubic feet. A second well, about 1,800 feet to the east, produced 1,260,000 cubic feet. Efforts to offset these wells have been unsuccessful, except for two oil wells on the Lyle and Winegardner farms in the northwest quarter of Section 27. Both of these wells had an initial production of 50 barrels after shot, but no further effort has been made to extend this discovery.

From 1905 to date, some 165 wells have been drilled in Thorn Township seeking Clinton sand production. Of these, 83 resulted in gas wells, 22 were oil wells accompanied by appreciable quantities of gas, and 60 were dry holes. Therefore, some 36 per cent of the tests were unsuccessful.

Four wells encountered sufficient gas in the Newburg horizon to warrant production. The first of these was discovered on the D. N. Caryer farm in the southwestern corner of Section 3. The well was dry in the Clinton, but was plugged back to produce 293,000 cubic feet of gas which had been found in the Newburg. In the southeastern quarter of Section 13, two wells encountered

1,000,000 and 744,000 cubic feet, respectively. In the northeastern quarter of Section 34, the Ira Bashmore No. 1 found 390,000 cubic feet at this horizon.

Wells in the northwestern corner of Thorn Township found the Berea sand at 600 feet in depth and those in the southeastern corner at near 850 feet. It varies in thickness from 20 feet in the former area to 35 feet in the latter. The only reported production from this sand in Thorn Township occurred in two wells in the southeastern corner of Section 27 and one in the northeastern corner of Section 28. Here the sand was found at 800 feet and the largest well produced 200,000 cubic feet per day with 250 pounds rock pressure.

Most of the wells drilled in this township were seeking production in the Clinton and the logs have not indicated either oil and gas shows or the presence of water in the Berea. It is known, though, that in this area the sand contains salt water and undoubtedly most of the wells encountered it without noting such on the log.

Thorn has not proved to be one of the more successful producing townships in Perry County to date. Two relatively small pools and one medium-sized Clinton sand producing area have been found. This sand varies in thickness from 10 feet in Section 6 in the northwestern corner of the township to about 30 feet in Section 36 in the southeastern corner. The area of greatest thickness appears to be located in the Thorn pool in Sections 13 and 14 where one well records 42 feet of sand. The dry holes are so scattered as to make it appear that further testing would have little success. But the sand, although thinner than elsewhere in the County, is generally present without shale breaks and of comparatively good texture. This should not, therefore, entirely eliminate the possibilities for further production.

Several areas appear worthy of additional tests. One is in the northeast quarter of Section 11. Two wells have been drilled on the S. B. Yost farm in the northwest quarter of Section 12. One had a show of oil and the other is reported to have been a 5-barrel producer. These wells lie a little more than half-section distance from the Thorn pool and could indicate a possible extension or the presence of a new pool. Further examination could also be made of the area between the Thorn pool and the gas discovered in the western portion of Section 15. Sections 28 and 32 also appear worthy of further investigation.

CHAPTER III

SECONDARY OIL RECOVERY

THE CHARTIERS OIL COMPANY GAS REPRESSURING PROJECT*

In the latter part of November, 1933, The Chartiers Oil Company began a Clinton sand gas repressuring project on the Hocking Valley Products Company lease located in the northern half of Section 29, Coal Township, Perry County (Fig. 2).

The pressure plant consisted of a 25 horsepower Reed gas engine and a two-stage Worthington VS-2, 7 x 6, 300 psi compressor. A drip and meter were installed on the outlet line to the input well. Well No. 42 was cleaned out and converted for gas injection. No intensive cleaning out was done on the surrounding producing wells.

The plant began operating 24 hours a day six days per week. The outlet pressure started off slightly above 100 psi but gradually settled to approximately 25 psi and has remained there through the years. A little in excess of 50,000 cubic feet of gas per day passed through the plant during the first year. This gradually declined to the present average of 35,000 cubic feet per day. Approximately one-half of the input gas is recovered from affected wells, the remainder comes from wells beyond the limits of the repressured area. Intake pressures now average 8 psi.

No cores have been taken of the Clinton sand within the repressured area; therefore, no information is available as to porosity, permeability, oil content, etc.

Average daily oil production in 1933, the first year prior to repressuring, was 7.95 barrels. The average for the year 1950 was 9.59 barrels. The highest daily average during gas injection occurred in 1935 when 17.76 barrels per day was reached. The average for the 17 years of repressure operations is 13.00 barrels per day (Table 2).

The total oil recovered from the 12 wells affected by the program, to January 1, 1951, is 373,856 barrels (Table 3). No estimate is made here of the portion due to the secondary recovery operation (Fig. 3). The Company reports that it has been successful and it is now preparing to initiate a new project in Section 32, approximately one mile south of the present installation.

THE KACHELMACHER ESTATE HEMLOCK GAS REPRESSURING PROJECT

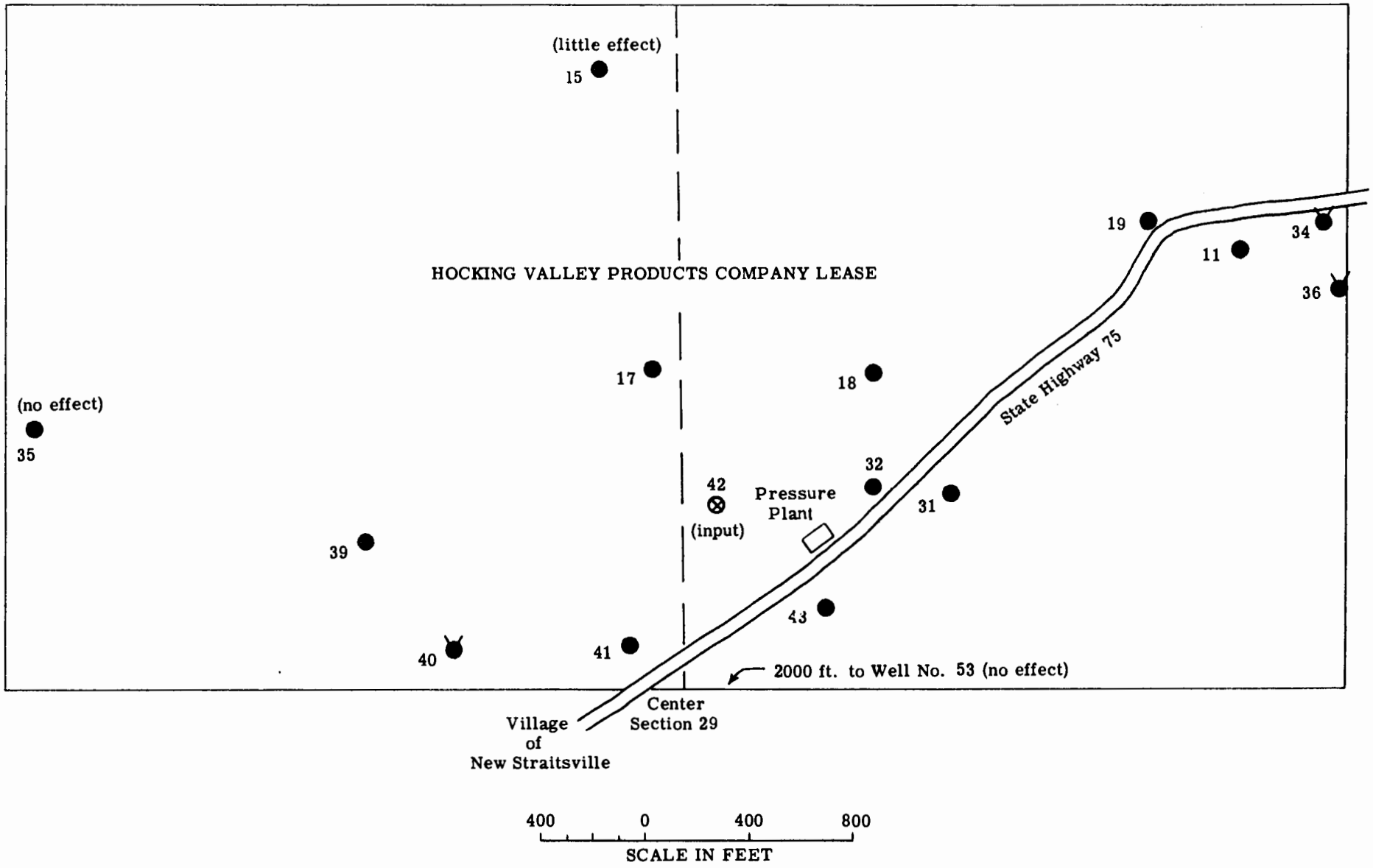
On May 28, 1945, the Kachelmacher Estate began a gas repressuring project on The Hemlock Coal Company lease located in Section 25, Coal Township, and Section 30, Monroe Township, Perry County (Fig. 4).

The Pennsylvania Grade Crude Oil Association, through their representative, Mr. Charles E. Stout, had reviewed this property for secondary oil recovery possibilities and finding it satisfactory had solicited the cooperation of Mr. John Conner, Executor Manager of The Kachelmacher Estate, to initiate a gas repressuring program. Mr. Stout's progress report, which appears in the February, 1946, issue of the Producers Monthly, presents data as to the preparations made for the project and the results obtained during the first seven months of operation.

A brief review of Mr. Stout's report follows:

---

* Based on correspondence with Mr. H. M. Brown, Treasurer, and personal interviews with Mr. H. W. Witschy, Field Foreman, of The Chartiers Oil Company.



THE CHARTIERS OIL COMPANY GAS REPRESSURING PROJECT

HOCKING VALLEY PRODUCTS COMPANY LEASE
SECTION 29, COAL TOWNSHIP
PERRY COUNTY, OHIO

Figure 2

TABLE 2

THE CHARTIERS OIL COMPANY GAS REPRESSURING PROJECT
HOCKING VALLEY PRODUCTS COMPANY LEASE
COAL TOWNSHIP, PERRY COUNTY

Annual and Cumulative Oil Production of Affected Wells*

Barrels

YEAR	PRODUCTION	CUMULATIVE
1911	6,750	6,750
1912	128,209	134,959
1932		293,175
1933	2,902	296,077
1934	5,116	301,193
1935	6,481	307,674
1936	5,921	313,595
1937	5,489	319,084
1938	5,093	324,177
1939	4,642	328,819
1940	4,922	333,741
1941	4,595	338,336
1942	4,522	342,858
1943	4,362	347,220
1944	4,169	351,389
1945	3,432	354,821
1946	3,786	358,607
1947	3,920	362,527
1948	4,023	366,550
1949	3,805	370,335
1950	3,501	373,856

* No annual production data available for years 1913 - 1933

TABLE 3

CHARTIERS OIL COMPANY GAS REPRESSURING PROJECT

HOCKING VALLEY PRODUCTS COMPANY LEASE
COAL TOWNSHIP, PERRY COUNTY, OHIO

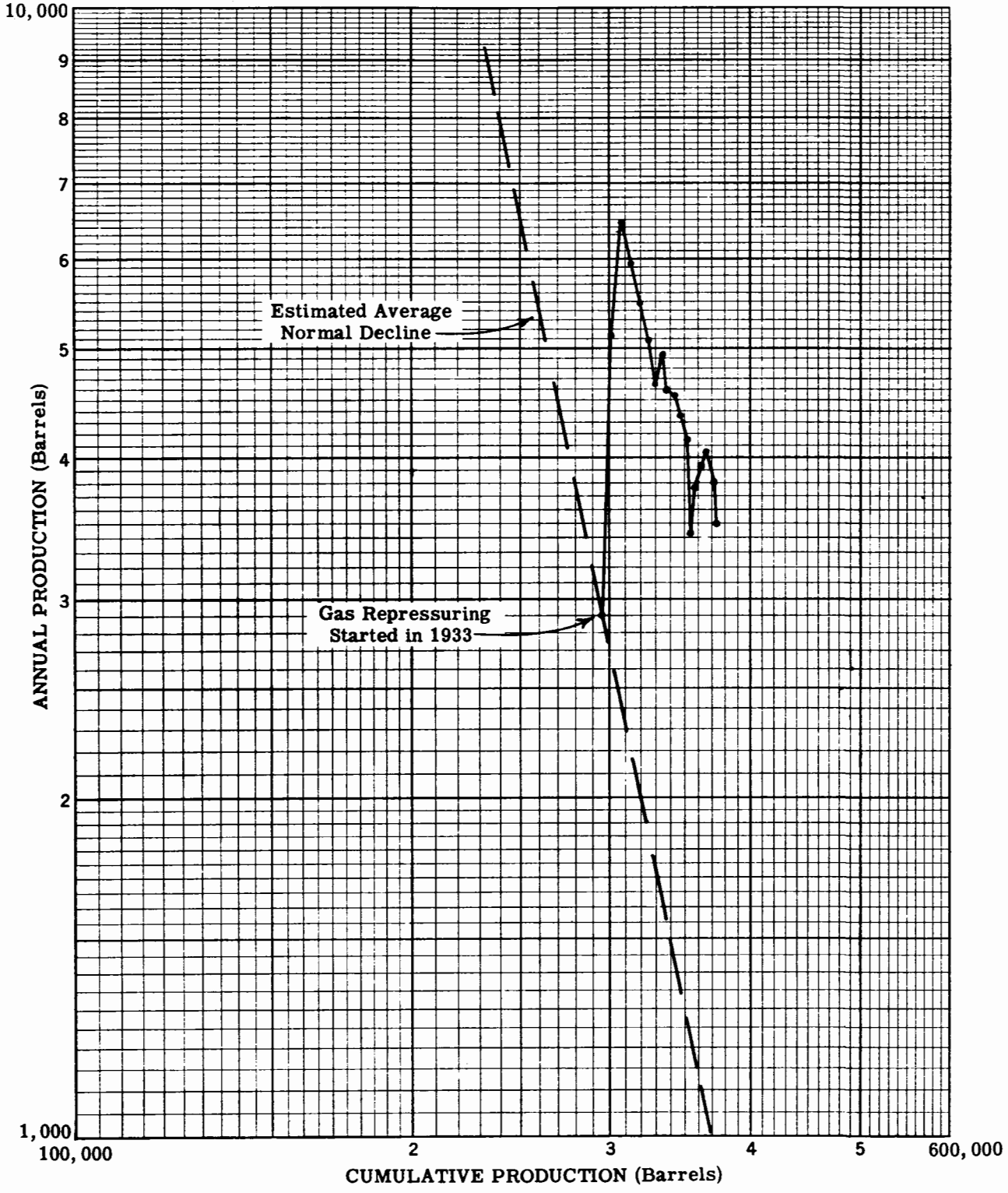
Annual and Total Production of Affected Wells*

Barrels

Year	Well No. 11	Well No. 15	Well No. 17	Well No. 18	Well No. 19	Well No. 31	Well No. 32	Well No. 35	Well No. 39	Well No. 41	Well No. 43	Well No. 53	Totals	Daily Average**
1933	307	130	140	125	306	335	--	197	382	268	364	348	2,902	7.95
1934	317	160	486	472	350	668	--	186	579	785	697	416	5,116	14.00
1935	439	206	736	789	392	760	7	184	744	1,091	762	371	6,481	17.76
1936	508	226	550	710	481	704	114	136	677	929	560	326	5,921	16.22
1937	505	219	426	669	495	710	164	123	542	858	509	269	5,489	15.04
1938	518	223	319	565	501	728	157	59	478	785	454	306	5,093	13.95
1939	516	213	290	236	498	772	165	97	423	799	348	285	4,642	12.75
1940	517	213	287	411	510	777	160	167	330	787	476	287	4,922	13.49
1941	508	202	291	417	507	677	144	223	308	700	349	269	4,595	12.58
1942	548	185	289	390	541	605	148	258	515	590	197	256	4,522	12.39
1943	506	200	194	339	524	606	124	246	498	529	347	249	4,362	11.95
1944	505	170	201	308	507	519	103	231	489	575	335	226	4,169	11.42
1945	440	152	190	263	435	343	103	229	423	407	243	204	3,432	9.40
1946	451	132	274	314	456	428	83	160	493	395	382	218	3,786	10.37
1947	423	145	220	465	458	436	119	41	512	450	353	298	3,920	10.74
1948	441	132	223	427	432	483	110	150	515	482	349	279	4,023	11.02
1949	433	121	216	384	421	511	118	166	503	343	324	265	3,805	10.42
1950	384	114	208	302	427	462	109	150	451	319	292	283	3,501	9.59
Totals 1933-1950	8,266	3,143	5,540	7,586	8,241	10,524	1,928	3,003	8,862	11,092	7,341	5,155	80,681	
Cumulative Well Production	44,418	18,901	29,194	32,336	48,969	44,821	17,028	19,652	33,003	32,579	23,106	29,849	373,856	

* No Annual Production Data Available For Years 1913-1933
** Based on 365 Days

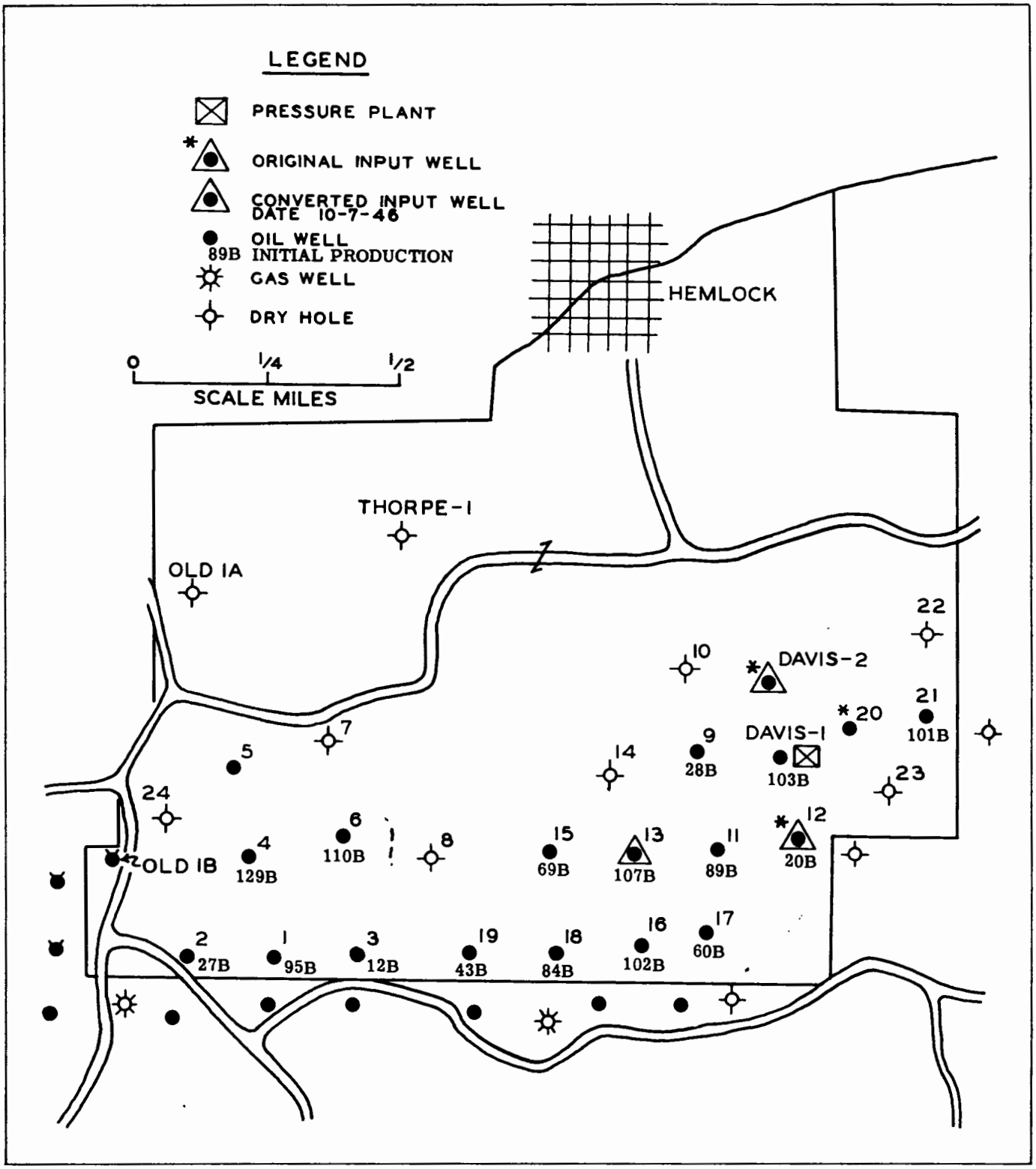
Figure 3



PRODUCTION DECLINE
1933 - 1950 *

The Chartiers Oil Company Gas Repressuring Project —— H. V. Products Co. Lease, Coal Township, Perry County

* No annual production data available for years 1913 - 1933



After C. E. Stout

* No initial production record available for No. 20 and Davis No. 2

KACHELMACHER ESTATE GAS REPRESSURING PROJECT

The Hemlock Coal Company Lease

Coal Township, Perry County, Ohio

Figure 4

Geology

"The producing formation is the Ohio Clinton sand of Silurian age. Lithology rather than structure is the dominant factor in accumulation of oil and gas in commercial quantities in porous lenses in the Clinton formation. On the Hemlock lease this lenticular nature is very apparent as illustrated on the isopach map, Fig. 5 ." The sand varies in thickness from 15 to 42 feet and, generally, the highest initial producing wells occurred where the sand exceeds 30 feet. The sand is hard and varies in color from white to pink and in texture from fine to coarse. Analysis of a chip core taken from well Hemlock No. 24 indicated a porosity range of from 1. 96 to 13. 22 per cent, permeability from zero to 72. 1 millidarcys, and oil saturation per acre foot of from 10 to 287 barrels. This well was not a commercial producer, therefore these results can not be considered as representative of the pool.

"The general structure in the area is monoclinal, dipping to the east. Contours drawn on top of the Clinton sand on the Hemlock lease indicate the presence of a nose trending from southwest to northeast across the property, dipping to the east as shown in Fig. 6 . The elevations shown are sub-sea level. The difference in sub-sea elevation between Well No. 24 on the west side of the property and Well No. 23 on the east side is ninety feet, indicating an east dip of approximately 60 feet to the mile."

Development

The Kachelmacher Estate began drilling on The Hemlock Coal Company lease in 1924 and through the years, to 1945, completed 19 oil wells and 7 dry holes. All of the producing wells are active and production to January 1, 1946, totaled 292, 500 barrels. Three dry holes had been drilled by prior owners. Before the repressuring project was installed all gas produced on the property had been marketed, except that needed for lease operations. Rock pressure tests taken in the fall of 1944 ranged from 35 to 150 psi, after a 24-hour shut-in period. No initial rock pressures for the wells are available.

Well Completion Method

The casing program for the wells required one to two joints of 10" conductor, some 750 ' of 8" casing to shut off shallow sand water, approximately 1, 150' of 6 - 5/8" casing set through the Berea sand, and 5 - 3/16" casing set 150 to 200' above the top of the Clinton sand near the base of the Niagara limestone. After shot the wells were cleaned out and a 4" perforated liner set on bottom.

Pressure Plant

The eastern portion of the lease was considered the best location to begin the repressuring program. The plant was constructed just east of Davis No. 1 well, and Davis No. 2 and Hemlock No. 12 wells, approximately 800 feet distant from the plant, were converted from producers to inputs. The plant consisted of a two stage compressor, a 35 horsepower gas engine, radiator-fan type cooler, and a 200 foot loop of four inch casing with a drip to serve as a gas cooler between compression stages. A meter and drip were installed on the line to the input wells. Total initial cost of the project was $4, 687. 00.

In the beginning the plant operated 8 hours per day six days a week. This was soon increased to 12 hours and finally, after 3 months, to 24 hours. Initial pressures ranged from 500 to 550 psi and a peak of 756 psi was reached about two months after operations began. Approximately 45, 000 cubic feet of gas per day passed through the plant, (Figure 7).

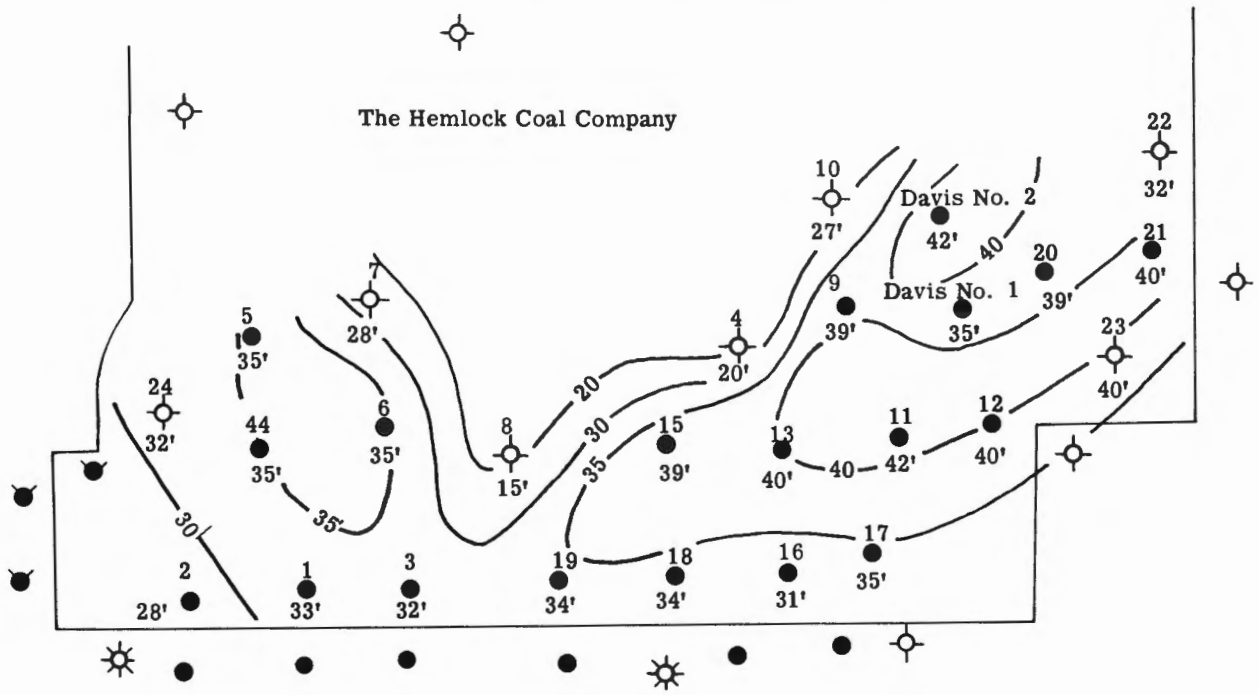
In concluding his report, Mr. Stout stated that although the program had been in operation only seven months there were indications of increased production which appeared to forecast a favorable future for the project.

To bring Mr. Stout's report on this project up to date, the writer contacted Mr. Connor and through his cooperation obtained the following data:

At the start of this repressuring project gas injection was alternated daily between Davis No. 2 and Hemlock No. 12. This alternation was continued for a period of several weeks and, although

FIGURE 5

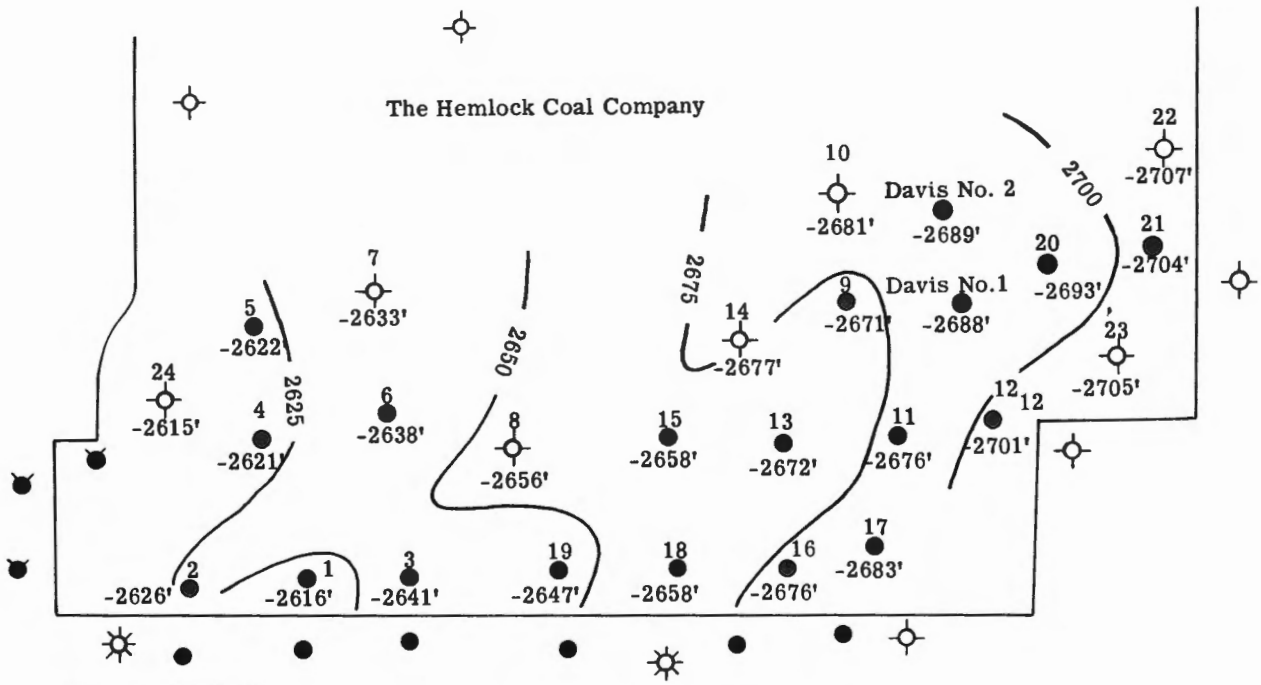
ISOPACH MAP OF CLINTON SAND



After C. E. Stout

FIGURE 6

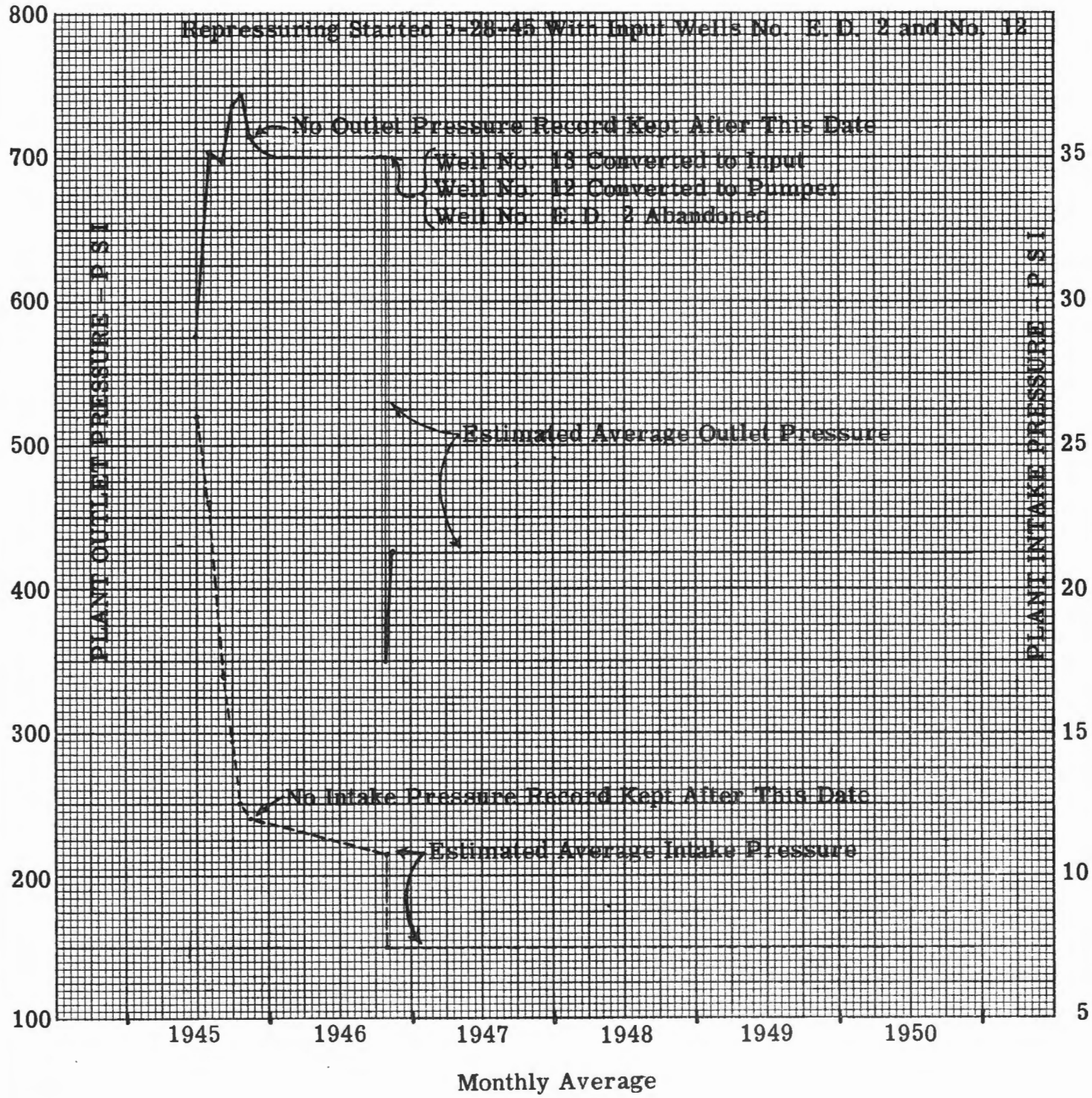
STRUCTURE CONTOURS - TOP CLINTON SAND



After C. E. Stout

KACHELMACHER ESTATE GAS REPRESSURING PROJECT

The Hemlock Coal Company Lease — Coal Township, Perry County, Ohio



KACHELMACHER GAS REPRESSURING PROJECT
Plant Operating Pressures

FIGURE 7

TABLE 4

KACHELMACHER ESTATE —— HEMLOCK COAL CO. LEASE

Well Data

Well No.	Completion Date	Elevation Feet	Clinton Top	Sand Bottom	Total Depth	Amount of 5-3/16" Casing	Initial Oil Production Bbls. Per Day	Remarks
1	5-14-24	1,021	3,637	3,670	3,670	3,425	95	
2	2-15-26	1,028	3,654	3,682	3,689	3,416	27	
3	6-28-29	1,021	3,662	3,694	3,700	3,436	12	
4	8-26-29	929	3,550	3,585	3,590	3,318	129	
5	7-26-30	996	3,618	3,653	3,653	3,383	89	
6	8-16-34	891	3,529	3,564	3,573	3,306	110	
7	2-6-35	999	3,632	3,660	3,670	3,415-	--	Dry Hole
8	5-15-35	878	3,534	3,549	3,611	3,318	--	Dry Hole
9	7-13-35	840	3,511	3,550	3,554	3,318	28	
10	11-6-35	912	3,593	3,620	3,629	3,366	--	Dry Hole
11	1-22-36	829	3,505	3,547	3,549	3,299	89	
12	4-27-36	814	3,515	3,555	3,557	3,280	20	
13	7-7-36	888	3,560	3,600	3,601	3,333	107	
14	9-16-36	982	3,659	3,679	3,710	3,435	--	Dry Hole
15	12-3-36	896	3,554	3,593	3,596	3,328	69	
16	1-29-37	937	3,613	3,644	3,649	3,380	102	
17	3-5-37	907	3,590	3,625	3,630	3,370	60	
18	4-10-37	917	3,575	3,609	3,611	3,360	84	
19	8-21-37	1,012	3,659	3,693	3,696	3,442	43	
20	10-14-37	921	3,614	3,653	3,655	3,396	No record	
21	8-18-41	882	3,586	3,626	3,630	3,349	101	
22	11-27-41	918	3,625	3,680	3,680	3,388	--	Dry Hole
23	5-10-44	875	3,580	3,620	3,633	3,348	--	Dry Hole
24	11-3-44	1,019	3,634	3,666	3,669	3,425	--	Dry Hole
1(E.D.)	6-14-37	938	3,626½	3,661½	3,668½	3,413	103	
2(E.D.)	12-17-37	919	3,608	3,650	3,650	3,401	No record	

TABLE 5

KACHELMACHER ESTATE

HEMLOCK GAS REPRESSURING PROJECT

Annual Lease Production

YEAR	BARRELS	CUMULATIVE (Bbls)
1924	4,670	4,670
1925	4,681	9,351
1926	6,593	15,944
1927	4,441	20,385
1928	3,354	23,739
1929	8,207	31,946
1930	13,650	45,496
1931	12,016	57,612
1932	8,468	66,080
1933	8,359	74,439
1934	13,837	88,276
1935	15,044	103,320
1936	25,286	128,606
1937	39,029	167,635
1938	21,688	189,323
1939	31,437	220,760
1940	18,874	239,634
1941	17,280	256,914
1942	13,244	270,158
1943	9,339	279,497
1944	6,801	286,298
1945	6,107	292,405
1946	6,201	298,606
1947	5,688	304,294
1948	5,445	309,739
1949	5,367	315,106
1950	4,794	319,900

TABLE 6

KACHELMACHER ESTATE —— HEMLOCK COAL COMPANY LEASE

Oil Production of Wells by Months - Barrels

Year 1945

Well No.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	17	22	17	17	22	15	15	17	22	23	17	21	225
2	10	13	10	10	13	10	10	13	11	10	7	9	126
3	7	9	7	7	9	7	7	9	8	9	7	9	95
4	31	39	31	31	39	29	24	30	30	28	23	24	359
5	31	36	31	31	39	29	24	30	31	30	24	24	360
6	62	77	62	62	77	62	62	77	69	90	69	69	838
9	31	36	31	31	52	62	85	102	67	83	62	60	702
11	25	30	24	24	30	25	25	27	20	22	17	17	286
12	17	22	17	17	13	Converted to Input							86
13	18	26	21	21	26	21	21	17	24	24	21	21	261
15	31	36	31	31	39	30	28	34	32	34	31	31	388
16	17	22	17	17	22	17	17	22	19	22	17	17	226
17	10	13	10	10	13	10	10	17	22	30	20	17	182
18	17	22	14	9	9	7	7	9	22	20	14	15	165
19	14	15	14	9	9	7	7	8	23	32	28	21	187
20	34	43	34	34	43	34	32	49	42	52	40	35	472
21	79	83	69	69	86	69	69	52	57	75	58	59	825
1 (E. D.)	31	39	31	31	36	31	29	34	27	4*	*	*	293
2 (E. D.)	5	9	7	5	5	Converted to Input							31
Total	487	592	478	466	582	465	472	547	526	588	455	449	6,107

Year 1946

1	22	18	17	17	23	18	26	21	20	26	21	21	250
2	10	8	7	7	9	7	9	7	6	9	7	6	92
3	9	7	7	7	9	7	9	7	6	9	7	6	90
4	29	24	24	24	30	24	30	24	21	24	24	24	312
5	30	24	24	24	30	24	30	24	24	30	24	24	312
6	87	69	70	68	86	66	89	69	69	86	70	69	898
9	74	58	59	50	67	58	68	50	58	65	46	45	698
11	22	15	17	17	22	17	2*	65	71	46	44	42	336

* Cleaning out.

TABLE 6 (Con't)

Well No.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
12	Input												
13	24	21	21	17	22	17	21	17	10	Converted to Input			170
15	34	27	6	36	39	31	40	26	31	34	30	29	363
16	18	12	14	14	15	14	17	14	14	17	14	14	177
17	18	12	14	16	21	21	21	14	15	16	14	8	190
18	15	12	13	16	14	17	14	14	16	16	14	12	173
19	17	11	7	9	31	26	30	24	23	30	14	28	250
20	46	32	28	36	43	32	43	35	34	43	32	30	434
21	73	54	56	58	70	56	67	55	52	63	52	47	703
1 (E.D.)	*	87	82	36	96	83	81	58	58	70	55	47	753
2 (E.D.)	Input										Abandoned		
Total	528	491	466	452	627	518	597	524	538	584	468	452	6,245

Year 1947

1	23	20	21	26	18	17	22	16	17	19	12	17	228
2	8	7	7	9	7	7	8	7	7	9	6	8	90
3	8	7	7	7	5	7	8	7	7	9	6	8	86
4	31	25	23	30	24	24	29	22	21	26	21	26	302
5	31	25	24	30	24	24	29	22	21	26	19	26	301
6	89	65	69	83	67	70	85	66	33	80	60	77	844
9	60	48	5*	33	25	25	64	46	39	41	40	42	468
11	52	41	41	51	34	40	38	34	41	48	38	45	503
12	Input		23	25	20	19	17	21	16	23	21	22	207
13	Input												
15	14	43	35	31	28	26	38	30	31	39	35	47	397
16	16	10	14	19	15	16	14	11	12	17	14	12	170
17	16	13	14	17	14	14	15	14	12	14	14	18	175
18	17	14	13	17	12	13	17	14	13	17	13	18	178
19	38	31	29	27	31	28	37	8	15	28	21	26	319
20	41	32	31	39	31	25	38	25	28	34	31	34	389
21	56	40	43	52	45	33	45	21	41	48	42	48	514
1 (E.D.)	57	45	43	52	44	43	44	31	34	41	38	45	517
2 (E.D.)	Abandoned												
Total	557	466	442	548	444	431	548	395	388	519	431	519	5,688

*Cleaning out.

TABLE 6 (Con't)

Year 1948

Well No.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	17	16	22	17	20	21	17	17	17	15	15	21	215
2	7	5	7	-	3	6	7	6	9	7	6	9	72
3	7	5	9	7	6	8	7	6	9	7	6	9	86
4	20	19	26	19	21	25	20	20	25	20	21	26	262
5	20	21	26	19	20	26	18	19	26	20	21	23	259
6	64	51	77	62	62	71	59	60	78	65	63	71	783
9	41	40	52	41	38	48	38	37	48	29	35	38	485
11	41	38	52	39	39	46	37	39	47	32	37	45	492
12	21	15	17	9	2	17	14	13	14	13	14	18	167
13	Input												
15	33	28	40	34	38	48	36	35	46	37	33	43	451
16	15	10	16	13	17	21	17	17	22	16	17	22	203
17	14	14	17	13	13	17	13	14	16	13	14	17	175
18	14	10	17	12	14	16	15	17	21	17	15	21	189
19	20	19	26	17	21	26	16	20	26	20	21	26	258
20	31	30	28	35	35	39	32	30	40	31	29	25	395
21	41	38	50	43	45	50	43	42	48	38	42	51	531
1 (E. D.)	26	24	27	*	13	52	41	41	52	41	45	60	422
2 (E. D.)	Abandoned												
Total	432	383	509	380	407	537	430	433	544	421	434	535	5,445

Year 1949

1	17	16	20	17	22	16	16	15	21	15	12	21	208
2	7	7	8	7	9	7	6	7	9	7	4	8	86
3	7	5	5	7	9	7	6	4	5	3	4	4	66
4	19	20	22	20	22	19	15	12	3*	21	21	25	219
5	19	21	25	18	21	25	17	20	23	17	20	25	251
6	55	59	75	61	72	61	54	57	60	51	42	63	710
9	37	35	42	34	40	38	33	36	41	34	34	41	445
11	35	34	43	34	41	39	31	35	39	29	33	34	427
12	14	14	17	14	16	13	14	12	13	10	10	12	159
13	Input												
15	29	38	43	35	47	36	34	35	43	36	33	46	455
16	19	21	26	20	26	17	33	40	67	46	42	42	399
17	14	14	17	14	17	13	14	17	17	13	14	18	182

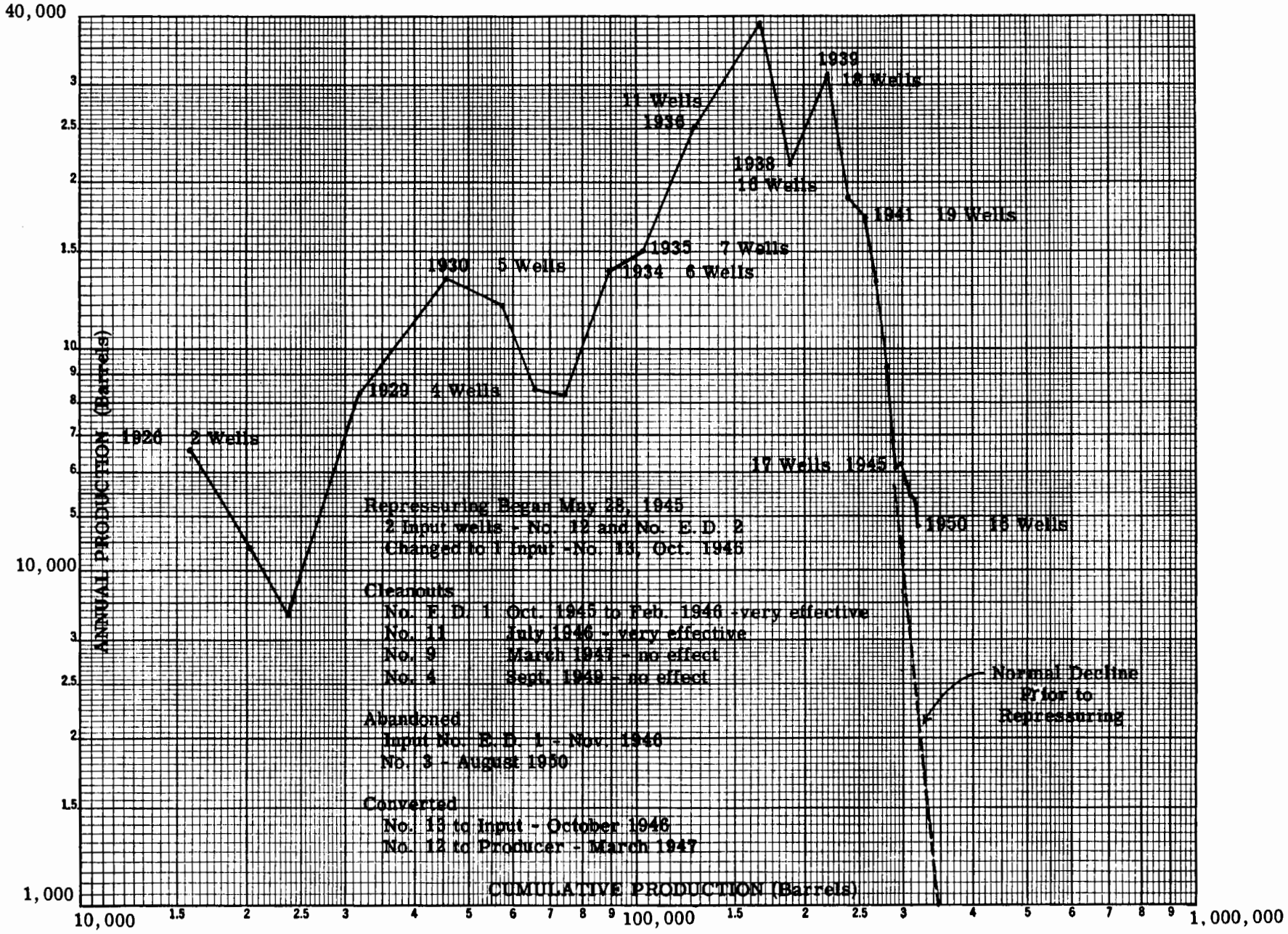
* Cleaning out.

TABLE 6 (Con't)

Well No.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
18	17	17	18	14	17	13	12	14	21	14	15	16	188
19	20	21	26	20	25	21	20	21	25	21	15	13	248
20	28	28	34	22	33	29	26	25	33	26	21	27	332
21	40	40	47	32	48	41	39	40	47	25	30	43	472
1 (E. D.)	50	51	75	41	48	38	35	33	41	34	33	41	520
2 (E. D.)	Abandoned												
Total	427	441	543	410	513	433	405	423	508	402	383	479	5,367

Year 1950

1	16	15	17	14	13	20	13	17	14	14	12	10	175
2	7	7	8	7	7	9	5	9	6	6	5	6	82
3	3	3	4	3	3	5	2	Abandoned					23
4	20	19	20	16	16	22	17	22	18	19	21	17	227
5	18	16	22	19	21	25	17	23	20	20	20	17	238
6	53	54	62	48	44	62	48	59	48	40	46	35	599
9	29	29	39	31	29	35	30	26	36	23	33	26	366
11	31	30	37	31	30	35	28	40	29	27	24	20	362
12	10	9	13	10	10	13	10	13	10	11	13	10	132
13	Input												
15	37	36	47	37	35	47	34	47	35	36	34	29	454
16	41	37	40	34	35	40	33	40	29	17	25	24	395
17	13	14	3	12	15	30	24	23	8	16	15	14	187
18	13	14	17	14	14	17	14	17	13	14	16	14	177
19	8	21	26	20	16	23	5	23	19	15	20	14	210
20	22	21	15	21	26	34	31	39	30	31	31	16	317
21	38	40	52	43	42	52	41	52	32	41	44	25	502
1 (E. D.)	33	31	32	29	29	36	30	34	25	24	24	21	348
2 (E. D.)	Abandoned												
Total	392	396	454	389	385	505	382	484	372	354	383	298	4,794



KACHELMACHER ESTATE GAS REPRESSURING PROJECT

THE HEMLOCK COAL COMPANY LEASE

PRODUCTION DECLINE

FIGURE 8

Davis No. 2 was higher, there was little difference between the input pressures of the two wells. After this testing period, in an effort to lower the input pressure, gas was injected into both wells until October 7, 1946. By that time the pressure was averaging 700 psi and plant operation becoming increasingly difficult. Valve and piston packing failures, overheating, etc., due to the high pressure load, made further operation inadvisable.

On the above date input wells Davis No. 2 and Hemlock No. 12 were reverted to producers and Hemlock No. 13, which had been cleaned out, was made an input. During the first week after conversion the input pressure averaged about 350 psi. The second week it reached 430 psi and continued to average between 400 and 450 psi until the plant was shut down in November, 1950. The least pressure averaged 5 to 10 psi. Hemlock No. 13 took approximately 50,000 cubic feet of gas per day which was very nearly the amount that Davis No. 2 and Hemlock No. 12 had been taking previously.

Plant operation was continuous, 24 hours a day six days per week, except for short period shut-downs due to plant failure or exceptionally severe winter weather.

The total oil produced from The Hemlock Coal Company lease to the date repressuring program began, June 1, 1945, is 289,000. Total production to January 1, 1951, is 319,900 barrels (Tables 4 and 5). No attempt will be made here to estimate the total oil recovered due to the secondary recovery program (Table 6). The pressure plant was shut down in November, 1950, because the company did not believe the project was profitable, (Fig. 8).

PRESTON OIL COMPANY PRESSURE MAINTENANCE PROJECT

In 1945 the Preston Oil Company began a pressure maintenance project on their oil producing leases in Sections 5 and 8 of Clayton Township. A pressure plant was installed and three wells were drilled and equipped as inputs. The input wells were located as follows: one in the southeast corner of Section 5, one in the center of the northwest quarter of Section 8, and another in the center of the southeast quarter of Section 8. Gas obtained from the producing wells and a nearby pipe line is used as the pressure medium.

No information is available as to the equipment employed, pressure of volume of injected gas, production prior to and after the initiation of the program, or other data necessary to evaluate its success. The plant has been in continuous operation since 1945 and the company advises that the program has been successful.

APPENDIX

INTRODUCTION

Plate I, accompanying this report, shows the location of all known wells which have been drilled in Perry County to January 1, 1951. The numbered wells have an accurate surface elevation and are listed in order by townships on the following pages. The map reference number, the section, farm name, and well number, total depth and the depth to the Berea, Clinton, and "Medina" sands are shown as recorded by the driller. The surface elevation, the elevation above or below sea level of the sands, and the initial production of each well is also listed.

BEARFIELD TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level: Berea	Clinton	Medina	Initial Production	Producing Sand
1	1	Goldie Heskett No. 1	1943	1170	1151-1169			949.6	-231			130 M	Berea
2	1	H. N. Fell No. 1	1943	1186	1165-1186			945.0	-220			190 M	Berea
3	1	Frank Walker No. 1	1943	1225	1205-1225			976.7	-228			70 M	Berea
4	5	S. C. Hinkle No. 1	1928	3710	1115-1130	3649-3694		964.6	-150	-2684		Dry	
5	5	E. D. Bateson No. 1	-	3624	1070-1085	3581-3624		922.3	-148	-2659		1,700 M	
												5 Bbl	Berea
6	5	C. M. Foraker No. 1	1933	3653	1052-1072	3585-3653		929.8	-122	-2655		2,000 M	Clinton
7	10	M. C. Canterbury No. 1	1947	3835	1072-1107	3708-3738	3806-3815	882.6	-189	-2825	-2923	Dry	
8	10	G. N. Jones Co. No. 9	1944	3751	998-1021	3633-3675	3747-3751	795.6	-202	-2837	-2951	190 M	Medina
9	10	G. N. Jones Co. No. 8	1943	3781	1003-1023	3664-3706	3778-3781	779.6	-223	-2884	-2998	440 M	Medina
10	11	Clara Williams No. 1	1948	3995	1189-1204	3867-3902	none	984.8	-240	-2928		Dry	
11	11	C. L. Rose No. 1	1947	4006	1213-1230	3896-3930	4000-4006	1001.5	-212	-2895	-2999	380 M	Medina
12	11	J. A. Wells No. 1	1947	3852	1138-1153	3815-3845		925.1	-213	-2890		800 M	Clinton
13	11	John Reed No. 1	1948	3989	1195-1212	3875-3916	3985-3989	975.5	-220	-2900	-3010	660 M	Medina
14	11	Grace Toki No. 1	1948	3986	1195-1213	3864-3910	3980-3986	973.9	-221	-2890	-3006	660 M	Medina
15	12	J. E. Sidwell No. 1	*					908.6				Gas	
16	14	O. O. Ketchum No. 1	1948	3967	1140-1155	3850-3874	3948-3955	906.9	-233	-2943	-3041	Dry	
17	15	L. G. Hammond No. 1	1946	3966	1172-1190	3859-3874	3938-3946	948.3	-224	-2911	-2990	Dry	
18	15	L. G. Hammond No. 2	1947	3900	1130-1145	3800-3820	3891-3896	934.6	-195	-2865	-2956	240 M	Clinton
													Medina
19	15	H. A. Wise No. 1	1936	3778	1086-1101	3722-3778		906.9	-179	-2815		Dry	
20	15	Scott Higgins No. 1	1947	3899	1162-1180	3801-3843	3894-3899	966.7	-195	-2834	-2927	800 M	Medina
21	22	Calvin Embrey No. 4	1947	1234	1212-1230			1023.9	-188			60 M	Berea
22	22	Calvin Embrey No. 2	1946	1143	1121-1138			917.5	-204			40 M	Berea
23	22	D. H. Bishop No. 2	1948	3958	1206-1226	3826-3869	3944-3952	1004.7	-201	-2821	-2939	530 M	Clinton
													Medina
24	22	A. P. Alfman No. 1	1947	3918	1167-1197	3798-3838	3911-3918	969.8	-197	-2828	-2941	940 M	Medina
25	22	Calvin Embrey No. 5	1948	3884	1125-1141	3759-3796	3873-3883	912.3	-213	-2847	-2961	1,000 M	Medina
26	22	Calvin Embrey No. 3	1946	1155	1137-1154			931.9	-205			250 M	Berea
27	22	Calvin Embrey No. 1	1946	3876	1095-1107	3766-3801	3872-3876	920.7	-174	-2845	-2951	760 M	Clinton
													Medina
28	22	M. A. Tracy No. 1	1948	3989	none	3855-3902	3975-3983	972.2		-2883	-3003	310 M	Medina
29	22	M. A. Tracy No. 2	1948	3970	1170-1195	3865-3881	3959-3965	963.8	-206	-2901	-2995	320 M	Medina
30	23	Floyd Sims No. 3	1948	6100	1120-1140	3804-3845	3922-3928	885.3	-235	-2919	-3037	Dry	St. Peter test
31	23	Herman King No. 1	1947	4091	1298-1310	3975-4017	4049-4051	1071.0	-227	-2904	-2978	675 M	Clinton
					1348-1353								
32	23	Hattie Skinner No. 1	1948	4080	1256-1267	3950-3980	4040-4045	1026.2	-230	-2924	-3014	100 M	
												10 Bbl	Berea
33	23	Hattie Skinner No. 2	1948	1293	1273-1293			1034.7	-238			Dry	
34	23	J. B. Gribble No. 1	*					1089.4				Oil	Berea
35	24	A. M. Moore No. 6	1932	-	1280-			1016.2	-264			30 M	Berea
36	24	M. C. Hearing No. 1	*					1074.6				Oil	Berea
37	24	M. C. Hearing No. 2	*					1070.0				Oil	Berea
38	26	Samuel Pettit No. 2	1929	-	-	3939-3980		982.6		-2956		290 M	Clinton
39	26	Samuel Pettit No. 1	1928	-	1291-1311	-		1033.7	-257			105 M	Berea
					1351-1357								
40	27	Lola Coulter No. 1	1947	3941	1165-1187	3829-3864	3936-3941	952.8	-212	-2876	-2983	680 M	Medina
41	27	C. M. Coulter No. 1	1948	4022	1247-1257	3898-3938	4007-4014	1032.9	-214	-2865	-2974	700 M	Clinton
													Medina
42	27	Addie Rogers No. 1	1947	3920	1166-1177	3804-3847	3914-3920	955.3	-211	-2849	-2959	1,130 M	Medina

Bearfield Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
43	27	Sunday Creek Coal No. 8	1926	1132	1099-1107			877.7	-221			3 Bbl	Berea
44	34	J. B. Bennett No. 1	1942	4012	1215-1238	3888-3923		1000.1	-215	-2888		Dry	
45	34	Lola Coulter No. 1	1942	3867	1158-1178	3812-3844		933.3	-225	-2879		1,390 M	Clinton
46	34	Lola Coulter No. 2	1942	4015	1219-1236	3895-3927	4004-4014	992.9	-226	-2902		Dry	
47	36	N. C. Stoneburner No. 1	1928	1354	1316-1354			1043.2	-273			Dry	

CLAYTON TOWNSHIP

1	3	C. O. Koehler No. 2	1946	3371	945-955	3318-3359		905.8	-39	-2412		Dry	
2	3	C. O. Koehler No. 1	1945	3442	982-992	3368-3428		941.4	-41	-2427		Dry	
3	3	C. O. Koehler No. 1-A	1946	3350	937-946	3303-3340		884.4	-53	-2419		Dry	
4	3	W. E. Moore No. 2	1949	3396	953-965	3320-3384		926.0	-27	-2394		125 M 11 Bbl	Clinton
5	3	C. D. Hammer No. 1	1947	3286	875-885	3228-3279		854.2	-21	-2374		25 Bbl	Clinton
6	3	J. H. Cookson No. 1	1944	3378	960-970	3318-3355		942.3	-18	-2376		78 Bbl	Clinton
7	3	Cookson-Curry No. 1	1945	3387	965-975	3327-3364		944.0	-21	-2383		8 Bbl	Clinton
8	3	Curry-Hammer No. 1	1946	3360	951-960	3306-3349		940.6	-10	-2365		300 M 47 Bbl	Clinton
9	3	Cookson-Adrian No. 2	1946	3386	995-1005	3330-3372		967.8	-27	-2362		220 M 28 Bbl	Clinton
10	3	C. D. Hammer No. 2	1948	3308	897-907	3246-3275		879.8	-17	-2366		150 M 50 Bbl	Clinton
11	3	C. D. Hammer No. 2-A	1947	3374	984-995	3324-3357		968.4	-16	-2356		37 Bbl	Clinton
12	3	C. D. Hammer No. 3	1948	3351	952-963	3299-3333		940.1	-12	-2359		Dry	
13	4	James Embrey No. 2	1947	3360	978-986	3306-3344		973.0	-5	-2333		80 Bbl	Clinton
14	4	James Embrey No. 1	1944	3367	964-972	3305-3362		955.1	-9	-2350		30 Bbl	Clinton
15	4	Holbein-Embrey No. 1	1942	3337	942-952	3272-3324		936.6	-5	-2335		30 Bbl	Clinton
16	4	C. D. Hammer No. 1	1942	3363	943-955	3285-3335		950.3	+7	-2335		Dry	
17	4	Joseph Shiplett No. 2	1948	3361	970-978	3301-3361		966.4	-4	-2335		100 M 50 Bbl	Clinton
18	4	Joseph Shiplett No. 1	1943	3366	985-991	3305-3360		985.1	0	-2320		62 Bbl	Clinton
19	4	James Adrian No. 1	1943	3415	1018-1030	3350-3410		1013.6	-4	-2336		270 Bbl	Clinton
20	4	Keffer-Humphrey No. 1	1944	3369	990-1005	3309-3359		992.9	+3	-2316		68 Bbl	Clinton
21	4	Alfred Humphrey No. 2	1943	3397	1032-1041	3333-3393		1024.1	-8	-2309		102 Bbl	Clinton
22	4	Alfred Humphrey No. 1	1941	3427	1035-1042	3357-3407		1044.8	+10	-2312		11 Bbl	Clinton
23	4	Ford-Humphrey No. 1	1941	3349	974-985	3304-3349		974.9	+1	-2329		47 Bbl	Clinton
24	4	Corynne Wagner No. 2	1942	3365	988-993	3304-3357		994.1	+6	-2310		150 Bbl	Clinton
25	4	Jacob Keffer No. 1	1943	3426	1028-1040	3364-3408		1037.4	+9	-2327		21 Bbl	Clinton
26	4	Jacob Keffer No. 3	1943	3340	972-982	3280-3320		977.2	+5	-2303		84 Bbl	Clinton
27	4	Corynne Wagner No. 1	1941	3394	1040-1044	3335-3388		1046.9	+7	-2288		177 Bbl	Clinton
28	4	Corynne Wagner No. 3	1942	3360	988-990	3289-3349		993.9	+6	-2295		78 Bbl	Clinton
29	4	C. L. Holbein No. 1	1945	3367	992-1005	3305-3352		1008.7	+17	-2296		Dry	
30	4	Jacob Keffer No. 2	1942	3409	1026-1059	3346-3396		1053.6	+28	-2292		28 Bbl	Clinton
31	5	Preston Oil No. 1	1946	3370	1023-1053	3320-3362		1042.7	+20	-2277		Input Well—Gas Re-pressuring	
32	5	M. A. Yarger No. 3	1934	3414	1062-1070	3354-3408		1083.0	+21	-2271		124 Bbl	Clinton
33	5	M. A. Yarger No. 1	1941	3366	1017-1043	3318-3362		1044.1	+27	-2274		179 Bbl	Clinton
34	5	T. C. Rhoades No. 2	1941	3342	1001-1017	3300-3340		1018.8	+18	-2281		190 Bbl	Clinton

Clayton Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
35	5	M. A. Yarger No. 2	1943	3333	990- 996	3272-3317		1021.1	+31	-2251		105 Bbl	Clinton
36	5	J. J. Wilson No. 4	1943	3376	1025-1035	3314-3358		1050.1	+25	-2264		10 Bbl	Clinton
37	5	J. J. Wilson No. 3	1943	3352	1010-1022	3292-3337		1040.6	+31	-2251		115 Bbl	Clinton
38	5	J. J. Wilson No. 2	1942	3328	990-1000	3270-3317		1022.2	+32	-2248		60 Bbl	Clinton
39	5	M. A. Yarger No. 1-A	1942	3260	904- 914	3204-3254		940.9	+37	-2263		115 Bbl	Clinton
40	5	M. A. Yarger No. 2-A	1944	3299	955- 970	3239-3279		983.6	+29	-2255		105 Bbl	Clinton
41	5	O. R. Loveberry No. 4	1944	3165	830- 838	3106-3142		869.5	+39	-2237		115 Bbl	Clinton
42	5	O. R. Loveberry No. 1	1943	3154	825- 855	3094-3134		868.4	+43	-2226		220 Bbl	Clinton
43	5	F. G. Rhoades No. 1	1943	3408	968-1009	3252-3308		1022.1	+54	-2230		Dry	
44	5	F. G. Rhoades No. 2	* (location abandoned)					903.8					
45	5	C. W. Ream No. 1	1940	3259	928- 942	3209-3239		971.4	+43	-2238		25 Bbl	Clinton
46	5	C. W. Ream No. 2	1942	3176	805- 840	3113-3155		885.6	+81	-2227		27 Bbl	Clinton
47	5	F. G. Rhoades No. 1-A	1948	3196	872- 883	3140-3167		908.3	+36	-2232		Dry	
48	5	O. R. Loveberry No. 3	1943	3177	854- 864	3115-3171		888.9	+35	-2226		38 Bbl	Clinton
49	5	O. R. Loveberry No. 5	1944	3180	850- 858	3118-3174		859.3	+9	-2259		41 Bbl	Clinton
50	5	O. R. Loveberry No. 7	1948	3197	863- 870	3141-3172		895.1	+32	-2246		31 Bbl	Clinton
51	5	O. R. Loveberry No. 6	1944	3214	880- 890	3149-3182		897.3	+17	-2252		20 Bbl	Clinton
52	5	J. W. Ford No. 3	1944	3258	914- 920	3198-3208		953.2	+39	-2245		12 Bbl	Clinton
53	5	J. W. Ford No. 2	1942	3154	848- 854	3101-3148		893.1	+45	-2208		18 Bbl	Clinton
54	6	J. W. Ford No. 1	1942	3230	931- 936	3172-3212		974.2	+43	-2198		210 M 6 Bbl	Clinton
55	6	F. G. Rhoades No. 1	1941	3212	930- 940	3162-3200		973.7	+44	-2188		51 Bbl	Clinton
56	6	J. A. Wilson No. 1	1941	3160	885- 895	3138-3160		941.5	+56	-2197		940 M 4 Bbl	Clinton
57	6	O. R. Loveberry No. 2	1943	3327	930- 945	3185-3238		989.8	+60	-2195		Dry	
58	6	J. A. Wilson No. 4	1942	3287	910- 918	3139-3177		970.7	+61	-2168		Dry	
59	6	J. A. Wilson No. 3	1942	3231	937- 940	3169-3204		1000.8	+64	-2168		38 Bbl	Clinton
60	6	J. A. Wilson No. 2	1942	3250	982- 992	3205-3244		1037.1	+55	-2168		60 Bbl	Clinton
61	7	W. N. Madden No. 2	1942	3219	947- 955	3164-3204		1025.6	+79	-2138		157 Bbl	Clinton
62	7	F. G. Rhoades No. 2	1943	3245	966- 971	3178-3223		1037.8	+72	-2140		37 Bbl	Clinton
63	7	F. G. Rhoades No. 1	1936	3224	922- 932	3149-3192 3203-3209		994.0	+72	-2155		Dry	
64	7	E. A. West No. 3	1943	3262	980- 986	3202-3237		1045.9	+66	-2156		17 Bbl	Clinton
65	7	F. G. Rhoades No. 3	1943	3273	993- 998	3203-3258		1055.7	+63	-2147		12 Bbl	Clinton
66	7	F. G. Rhoades No. 1-A	1942	3277	984- 990	3216-3270		1048.2	+64	-2168		40 Bbl	Clinton
67	7	E. A. West No. 2	1943	3251	965- 975	3191-3226		1032.7	+68	-2158		21 Bbl	Clinton
68	7	E. A. West No. 1	1940	3258	995-1000	3200-3256		1052.2	+57	-2148		1,960 M	Clinton
69	7	B. J. Williams No. 1	1940	3298	1010-1020	3230-3278		1051.5	+41	-2179		Dry	
70	7	E. F. Smitley No. 2	1942	3199	902- 908	3137-3173		959.9	+58	-2177		75 Bbl	Clinton
71	7	E. F. Smitley No. 1	1941	3190	909- 914	3135-3173		950.6	+42	-2184		92 Bbl	Clinton
72	7	J. A. Cannon No. 3	1941	3213	922- 931	3160-3209		961.9	+40	-2198		76 Bbl	Clinton
73	7	M. A. Shaw No. 1	1941	3152	860- 865	3112-3147		902.7	+43	-2209		35 Bbl	Clinton
74	7	J. A. Cannon No. 1	1941	3186	912- 923	3134-3182		925.9	+14	-2208		130 Bbl	Clinton
75	7	J. A. Cannon No. 2	1941	3168	912- 940	3113-3168		903.1	-9	-2210		195 Bbl	Clinton
76	7	B. J. Williams No. 2	1941	3241	914- 931	3151-3180		934.7	+21	-2216		90 Bbl	Clinton
77	7	B. J. Williams No. 3	1941	3229	905- 915	3163-3220		944.5	+39	-2219		102 Bbl	Clinton
78	8	Berry-Beard No. 3	1941	3196	875- 890	3151-3187		917.3	+42	-2234		260 Bbl	Clinton
79	8	Berry-Beard No. 2	1941	3186	884- 894	3142-3178		914.5	+30	-2228		407 Bbl	Clinton
80	8	M. A. Shaw No. 3	1941	3212	889- 895	3154-3194		924.6	+36	-2229		150 Bbl	Clinton

Clayton Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
81	8	M. A. Shaw No. 2	1941	3269	None	3209-3264		989.7		-2219		575 Bbl	Clinton
82	8	W. H. Thompson No. 4	1942	3295	975- 977	3234-3288		1000.9	+26	-2233		287 Bbl	Clinton
83	8	P. A. Smitley No. 1	1941	3285	966- 982	3233-3281		1004.3	+38	-2229		372 Bbl	Clinton
84	8	W. H. Thompson No. 5	1945	3304	995-1003	3244-3294		1020.8	+26	-2223		Input Well—Gas Repressuring	
85	8	W. H. Thompson No. 1	1941	3194	897- 905	3150-3188		923.1	+26	-2227		275 Bbl	Clinton
86	8	W. H. Thompson No. 3	1942	3283	970- 976	3230-3276		990.0	+20	-2240		155 Bbl	Clinton
87	8	W. H. Thompson No. 2	1941	3325	1008-1015	3268-3316		1025.4	+17	-2243		333 Bbl	Clinton
88	8	Berry-Beard No. 1	1941	3297	972- 982	3253-3290		1003.9	+32	-2249		265 Bbl	Clinton
89	8	E. F. Smitley No. 1	1941	3302	985- 996	3254-3293		1009.2	+24	-2245		1,000 M 40 Bbl	Clinton
90	8	E. F. Smitley No. 2	1941	3307	1001-1013	3272-3301		1015.5	+14	-2257		60 Bbl	Clinton
91	8	J. H. Cookson No. 4	1941	3325	1003-1010	3280-3315		1017.9	+15	-2262		154 Bbl	Clinton
92	8	J. H. Cookson No. 8	1942	3318	991-1006	3269-3312		1019.3	+28	-2250		190 Bbl	Clinton
93	8	J. H. Cookson No. 5	1941	3284	955- 965	3236-3274		970.3	+15	-2266		236 Bbl	Clinton
94	8	M. A. Shaw No. 1	1941	3309	980- 990	3259-3298		1006.2	+26	-2253		346 Bbl	Clinton
95	8	M. A. Shaw No. 3	1942	3329	976- 986	3268-3325		1012.4	+36	-2256		5 Bbl	Clinton
96	8	J. J. Wilson No. 1	1942	3305	981- 991	3248-3298		1002.5	+21	-2246		15 Bbl	Clinton
97	8	M. A. Shaw No. 5	1942	3311	991- 997	3267-3305		1002.2	+11	-2265		45 Bbl	Clinton
98	8	J. H. Cookson No. 7	1942	3286	957- 980	3236-3275		971.6	+15	-2264		159 Bbl	Clinton
99	8	J. H. Cookson No. 9	1944	3331	998-1006	3281-3322		1014.3	+16	-2267		Input Well—Gas Repressuring	
100	8	J. H. Cookson No. 2	1941	3305	979- 995	3265-3300		989.8	+11	-2275		95 Bbl	Clinton
101	8	J. H. Cookson No. 1	1941	3323	998-1016	3279-3314		997.2	-1	-2282		178 Bbl	Clinton
102	8	J. H. Cookson No. 3	1941	3396	1051-1059	3353-3383		1065.9	+15	-2287		23 Bbl	Clinton
103	8	J. H. Cookson No. 6	1941	3316	970- 982	3262-3301		987.6	+18	-2274		214 Bbl	Clinton
104	8	M. A. Shaw No. 2	1942	3368	1030-1045	3317-3354		1046.5	+16	-2271		80 Bbl	Clinton
105	8	M. A. Shaw No. 6	1943	3374	1020-1038	3312-3368		1041.1	+21	-2271		25 Bbl	Clinton
106	9	M. A. Shaw No. 4	1942	3335	968- 983	3282-3320		1001.1	+33	-2281		29 Bbl	Clinton
107	9	A. T. Foregraves No. 4	1941	3389	1042-1086	3339-3380		1055.5	+13	-2284		150 Bbl	Clinton
108	9	A. T. Foregraves No. 3	1941	3414	1055-1065	3374-3404		1066.1	+11	-2308		180 Bbl	Clinton
109	9	A. T. Foregraves No. 2	1941	3413	1065-1078	3365-3405		1064.1	+1	-2301		220 Bbl	Clinton
110	9	J. W. Amerine No. 1	1940	3410	1050-1064	3369-3399		1053.6	+4	-2315		90 Bbl	Clinton
111	9	J. W. Amerine No. 2	1941	3421	1063-1075	3381-3410		1069.5	+6	-2312		150 Bbl	Clinton
112	9	J. W. Amerine No. 3	1942	3405	1063-1078	3367-3397		1076.3	+13	-2291		102 Bbl	Clinton
113	9	J. W. Amerine No. 4	1941	3327	949-1016	3302-3313		988.2	+39	-2314		Dry	
114	9	Albert Maddox No. 2	1941	3397	1030-1040	3344-3379		1055.9	+26	-2288		60 Bbl	Clinton
115	9	Albert Maddox No. 1	1940	3388	1030-1040	3343-3374		1034.6	+5	-2308		60 Bbl	Clinton
116	9	V. E. Williams No. 1	1940	3362	1015-1025	3320-3350		1007.4	-8	-2313		50 M 89 Bbl	Clinton
117	9	V. E. Williams No. 2	1941	3386	1030-1037	3345-3380		1029.6	0	-2315		98 Bbl	Clinton
118	9	V. E. Williams No. 3	1943	3380	1015-1023	3327-3361		1017.6	+3	-2309		118 Bbl	Clinton
119	9	V. E. Williams No. 4	1943	3446	1048-1058	3381-3409		1056.9	+9	-2324		30 M 4 Bbl	Clinton
120	9	L. Beacham No. 1	1943	3432	1065-1074	3374-3399		1068.4	+3	-2306		38 Bbl	Clinton
121	9	Rachel Amerine No. 2	1943	3395	1018-1026	3338-3370		1018.7	+1	-2319		207 Bbl	Clinton
122	9	Rachel Amerine No. 1	1940	3328	962- 968	3287-3318		956.2	-6	-2331		40 Bbl	Clinton
123	9	L. Sellers No. 1	1940	3388	1030-1040	3344-3370		1025.7	-4	-2318		75 Bbl	Clinton
124	9	Willis McCauley No. 1	1940	3376	965-1011	3343-3370		1001.8	+37	-2341		125 Bbl	Clinton

Clayton Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
125	9	Willis McCauley No. 3	1941	3337	968- 975	3298-3325		964.7	-3	-2333		15 Bbl	Clinton
126	9	L. Beacham No. 2	1944	3404	1015-1024	3344-3376		1005.3	-10	-2339		38 Bbl	Clinton
127	9	Rachel Amerine No. 3	1944	3525	1055-1062	3386-3412		1044.4	-11	-2342		10 Bbl	Clinton
128	10	W. D. Helriggle No. 1	1945	3421	1000-1008	3361-3396		969.7	-30	-2391		14 Bbl	Clinton
129	11	Amanda Noee No. 1	1948	3414	955- 967	3335-3376		919.0	-36	-2416		Dry	
130	11	James Adrian No. 6	1948	3459	945- 955	3325-3386		901.4	-44	-2424		63 Bbl	Clinton
131	11	James Adrian No. 4	1949	3457	945- 955	3320-3393		902.7	-42	-2417		200 Bbl	Clinton
132	11	James Adrian No. 5	1948	3506	1000-1015	3372-3443		955.2	-45	-2417		95 Bbl	Clinton
133	11	David Hammer No. 1	1930	3590	1066-1072	3486-3521		1018.1	-48	-2468		Dry	
134	12	R. L. Henderson No. 1	1946	3480	925- 935	3350-3393		846.4	-79	-2504		Dry	
135	15	James Batstone No. 1	1929	3487	1033-1048	3426-3436		967.5	-66	-2459		Dry	
136	15	Z. T. Lyons No. 1	-	3452	1020-1050	3378-3406		962.6	-57	-2415		Dry	
137	15	Emma Beard No. 1	1941	3354	976- 984	3306-3330		963.6	-12	-2342		Dry	
138	16	Willard Noce No. 2	1941	3326	945- 965	3287-3317		937.3	-8	-2350		125 Bbl	Clinton
139	16	Cyrus Shiplett No. 1	1946	3400	1030-1042	3358-3390		1026.5	-4	-2332		700 M	Clinton
140	16	Z. T. Lyons No. 2	1940	3323	990-1005	3289-3318		981.2	-9	-2308		160 Bbl	Clinton
141	16	Z. T. Lyons No. 3	1940	3331	985-1000	3293-3321		990.0	+5	-2303		120 Bbl	Clinton
142	16	A. T. Foregraves No. 1	1940	3398	1055-1062	3356-3369		1064.3	+9	-2292		35 Bbl	Clinton
143	16	Z. T. Lyons No. 1	1940	3419	1060-1070	3362-3395		1072.9	+13	-2289		35 Bbl	Clinton
144	16	Z. T. Lyons No. 1	-	3440	-	3392-3422		1094.8		-2297		200 M	Clinton
145	17	L. Beacham No. 3	1940	3382	1030-1035	3325-3362		1030.6	+1	-2294		100 M 20 Bbl	Clinton
146	17	L. Beacham No. 5	1941	3380	None	3334-3362		1051.8		-2282		75 Bbl	Clinton
147	17	L. Beacham No. 6	1941	3360	1003-1023	3319-3350		1010.3	+7	-2309		78 Bbl	Clinton
148	17	L. Beacham No. 7	1941	3279	940- 952	3232-3261		960.1	+20	-2272		60 Bbl	Clinton
149	17	L. Beacham No. 4	1940	3320	984- 990	3274-3304		990.4	+6	-2284		90 Bbl	Clinton
150	17	L. Beacham No. 1	1938	3335	995-1000	3264-3308		1010.0	+15	-2254		450 M 65 Bbl	Clinton
151	17	L. Beacham No. 2	1940	3340	None	3282-3317		1020.6		-2261		300 M 3 Bbl	Clinton
152	17	A. C. Randolph No. 5	1941	3253	940- 949	3205-3240		959.6	+20	-2245		30 M 40 Bbl	Clinton
153	17	A. C. Randolph No. 3	1940	3245	935- 941	3192-3233		954.4	+19	-2238		260 M 45 Bbl	Clinton
154	17	William Pettit No. 3	1941	3204	915- 920	3157-3197		942.9	+28	-2214		20 M 18 Bbl	Clinton
155	17	A. C. Randolph No. 4	1940	3251	943- 948	3197-3231		971.4	+28	-2226		120 M 11 Bbl	Clinton
156	17	A. C. Randolph No. 1	1938	3296	998-1001	3242-3284		1021.8	+24	-2220		340 M 39 Bbl	Clinton
157	17	A. C. Randolph No. 2	1940	3300	1000-1006	3252-3290		1020.6	+21	-2231		120 M 18 Bbl	Clinton
158	17	Joseph Griffith No. 2	1939	3240	944- 950	3198-3235		967.9	+24	-2230		670 M 2 Bbl	Clinton
159	17	Joseph Griffith No. 4	1945	3335	940- 948	3205-3234		967.0	+27	-2238		Dry	
160	17	Joseph Griffith No. 3	1940	3287	986- 998	3237-3275		1020.5	+34	-2217		70 M 30 Bbl	Clinton
161	17	Joseph Griffith No. 1	1936	3242	933- 980	3184-3221		963.9	+31	-2220		150 Bbl	Clinton

Clayton Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level			Initial Production	Producing Sand
									Berea	Clinton	Medina		
162	17	William Pettit No. 1	1937	3176	908- 920	3160-3176		951.3	+43	-2209		1,360 M 16 Bbl	Clinton
163	17	William Pettit No. 2	1940	3264	961- 966	3206-3244		995.8	+35	-2210		70 M 23 Bbl	Clinton
164	18	C. T. Miller No. 1	1937	3197	898- 908	3141-3176		931.1	+33	-2210		1,900 M	Clinton
165	18	M. E. Koehler No. 3	1940	3241	923- 941 956- 960	3170-3207		933.1	+10	-2237		600 M 80 Bbl	Clinton
166	18	M. E. Koehler No. 2	1937	3184	900- 910	3130-3170		939.7	+40	-2190		90 M 1 Bbl	Clinton
167	18	M. E. Koehler No. 4	1940	3274	1000-1014 1044-1054	3230-3274		979.4	-21	-2251		300 M	Clinton
168	18	C. T. Miller No. 2	1940	3238	960- 970	3201-3234		1006.4	+46	-2195		1,060 M	Clinton
169	18	C. Hynus No. 1	1940	3263	979- 990	3203-3248		1041.3	+62	-2162		60 M 120 Bbl	Clinton
170	18	C. T. Miller No. 4	1940	3278	980- 992	3218-3252		1033.9	+54	-2184		Dry	
171	18	C. T. Miller No. 3	1940	3384	965- 977	3205-3238		1020.9	+56	-2184		28 Bbl	Clinton
172	18	M. E. Koehler No. 5	1936	3256	953- 975	3188-3222		1042.9	+90	-2145		1,170 M	Clinton
173	18	M. E. Koehler No. 1	1937	3208	905- 913	3151-3187		992.9	+88	-2158		860 M	Clinton
174	18	H. W. Williams No. 2	1941	3300	1040-1052 1093-1100	3244-3279		1074.6	+35	-2169		Dry	
175	18	J. A. Hull No. 3	1940	3268	998-1009	3215-3260		1051.6	+54	-2163		150 M 10 Bbl	Clinton
176	18	J. A. Hull No. 2	1940	3278	1009-1017	3231-3271		1065.3	+56	-2166		57 Bbl	Clinton
177	18	J. A. Hull No. 1	1935	3219	960- 970	3171-3217		1020.6	+61	-2150		520 M 24 Bbl	Clinton
178	18	H. W. Williams No. 1	1936	3204	985- 990 995-1015	3192-3204		1038.1	+53	-2154		2,750 M	Clinton
179	19	Peter Acker No. 1	-	3355	-	3260-3275 3284-3294		1034.5		-2226		Dry	
180	20	Arthur Wilson No. 1	1943	3431	980-1010	3286-3315		1018.9	+39	-2267		Dry	
181	21	J. L. Wilson No. 1-A	1924	3371	1021-1026	3332-3362		1009.2	-12	-2323		Dry	
182	21	J. L. Wilson No. 1	1917	3332	970-1040	3292-3330		884.1	-86	-2448		Dry	
183	21	A. A. Lee No. 1	-	3381	965- 974	3304-3349		888.9	-76	-2415		Dry	
184	21	J. L. Wilson No. 1	-	946	913- 923			964.8	+52			Gas	Berea
185	21	George Love No. 1	-	1060	977- 999			967.8	-9			Oil	Berea
186	21	J. L. Wilson No. 4	1928	3390	1015-1026	3345-3378		1011.8	-3	-2333		60 Bbl	Clinton
187	21	Conrad Snider No. 1	1931	3381	965- 974	3304-3349		954.1	-11	-2350		Dry	
188	22	L. E. Weller No. 1	1942	3521	1107-1120	3467-3507		1066.1	-41	-2401		660 M	Clinton
189	28	William Essington No. 1	1925	3405	1036-1046	3336-3390		988.5	-48	-2348		Dry	
190	28	Adrian-Goodwin No. 1	1937	3426	1020-1032	3335-3370		1009.9	-10	-2325		Dry	
191	30	L. E. Wright No. 2	-	3300	913- 923	3180-3213		947.6	+35	-2232		3 Bbl 1,000 M	Clinton
192	31	K. and A. Martin No. 1	1928	3254	990-1005	3212-3244		1018.2	+28	-2194		431 M	Clinton
193	31	F. D. Yarger No. 1	1926	3234	966- 970	3190-3229		977.3	+11	-2213		10 Bbl	Clinton
194	31	J. R. Wolfe No. 1	1931	3256	984- 990	3215-3250		1008.6	+25	-2206		Dry	
195	31	Leo Wilson No. 1	*					911.3				Dry	
196	32	V. E. Gordon No. 1	1928	3161	874- 884	3119-3154		890.0	+16	-2229		18 Bbl	Clinton
197	32	C. M. Dugan No. 1	1942	3346	995-1080	3245-3280		973.6	-21	-2271		Dry	
198	33	H. F. Teal No. 1	1943	3508	1015-1035	3361-3401		1002.4	-13	-2359		Dry	
199	34	Clarence Kelley No. 1	1927	3572	1060-1100	3456-3462		1023.1	-37	-2433		Dry	

COAL TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
1	20	Upson Coal No. 1	-	3293	1020-	3255-3293		872.9	-147	-2382		300 Bbl	Clinton
2	19	Jones Coal No. 4	1925	-	-	3247-		896.9		-2350		Dry	
3	30	M. E. Martin No. 3	-	3213	920- 940	3175-3192		853.4	-67	-2322		Gas	Clinton
4	30	M. E. Martin No. 4	1929	3414	-	3336-3375		991.1		-2345		Dry	
5	30	Hocking Valley Prod. No. 3	*					880.6				Oil	Clinton
6	30	J. C. Wyon No. 4	1928	3270	-	3215-3245		860.7		-2354		3 Bbl	Clinton
7	29	P. Curtis No. 19	*					932.8				Oil	Clinton
8	28	H. Hazelton No. 3	*					869.5				Oil	Clinton
9	28	Hocking Valley Prod. No. 211	1929	3422	-	3384-3414		957.9		-2426		40 Bbl	Clinton
10	28	Hocking Valley Prod. No. 212	1929	3398	-	3358-3381		934.7				75 Bbl	Clinton
11	28	Hocking Valley Prod. No. 203	*					1006.4				75 Bbl	Clinton
12	27	C. H. Babbs No. 1	1911	3586	1241-1256	3543-3578		1034.0	-207	-2509		Dry	
13	27	C. H. Babbs No. 2	*					1054.0				5 Bbl	Clinton
14	27	Sunday Creek Coal No. 68	1929	3597	1185-1275	3562-3597		1034.8	-150	-2527		10 Bbl	Clinton
15	27	Sunday Creek Coal No. 58	*					918.0				60 Bbl	Clinton
16	27	Franklin Bank No. 1	*					1006.0				190 Bbl	Clinton
17	27	Franklin Bank No. 6	* 1926					962.9				75 Bbl	Clinton
18	27	Franklin Bank No. 5	1926	3557	1126-1132	3520-3554		987.8	-138	-2532		Dry	
19	27	Franklin Bank No. 9	1944	3623	1200-1218	3587-3617		1046.9	-153	-2540		7 Bbl	Clinton
20	27	Sunday Creek Coal No. 102	*					976.4				6 Bbl	Clinton
21	27	Franklin Bank No. 3	*					939.0				90 Bbl	Clinton
22	27	Sunday Creek Coal No. 178	1940	3737	1200-1275	3604-3642		1057.2	-143	-2547		Dry	
23	27	Sunday Creek Coal No. 107	*					1055.1				65 Bbl	Clinton
24	27	Franklin Bank No. 4	*					986.5				30 Bbl	Clinton
25	26	Sunday Creek Coal No. 37	*					946.1				Dry	
26	26	Sunday Creek Coal No. 207	1942	3528	970-1011	3403-3432		815.1	-155	-2588		Dry	
27	26	Hemlock Coal No. 1	-	-	1196-1265	3650-3685		1020.6	-175	-2629		23 Bbl	Clinton
28	25	Hemlock Coal No. 4	*					987.9				100 Bbl	Clinton
29	25	Hemlock Coal No. 7	1935	3670	1185-1186	3632-3667		881.8	-303	-2750		10 Bbl	Clinton
30	36	S. R. Seidenfield No. 2	1936	3706	1181-1199	3661-3702		965.7	-215	-2695		50 Bbl	Clinton
31	36	Sunday Creek Coal No. 223	1943	3790	1176-1188	3665-3700		843.2	-333	-2822		Dry	
32	36	Sunday Creek Coal No. 147	1937	3699	1175-1195	3641-3692		972.0	-203	-2669		35 Bbl	Clinton
33	36	Sunday Creek Coal No. 161	1937	3699	1173-1185	3642-3692		978.2	-195	-2664		210 M 38 Bbl	Clinton
34	36	Sunday Creek Coal No. 162	1938	3613	1111-1125	3568-3610		901.1	-210	-2667		40 Bbl	Clinton
35	36	Sunday Creek Coal No. 209	1942	3752	1259-1271	3717-3742		1036.3	-223	-2681		5 Bbl	Clinton
36	36	Sunday Creek Coal No. 214	1942	3710	1115-1127	3592-3626		918.5	-197	-2674		Dry	
37	36	Frank Williams No. 9	1940	3711	1195-1205	3650-3685		982.9	-212	-2667		Dry	
38	36	Frank Williams No. 8	1938	3687	1182-1192	3640-3682		981.8	-200	-2658		35 Bbl	Clinton
39	36	Sunday Creek Coal No. 219	1943	3767	1186-1202	3630-3665		986.9	-199	-2643		Dry	
40	36	Frank Williams No. 7	1926	3674	1190-1205	3621-3662		990.7	-199	-2630		25 Bbl	Clinton
41	36	Frank Williams No. 4	1924	3725	1230-1246	3698-3718		1055.4	-175	-2643		80 Bbl	Clinton
42	36	Sunday Creek Coal No. 163	1938	3762	1195-1206	3646-3671		990.5	-205	-2656		Dry	
43	36	Frank Williams No. 2	*					936.0				75 Bbl	Clinton
44	36	Frank Williams No. 5	1925	3643	1190-1200	3611-3642		999.2	-191	-2612		187 Bbl	Clinton
45	36	Frank Williams No. 6	1925	3560	1116-1126	3530-3560		925.8	-190	-2604		65 Bbl	Clinton
46	36	Frank Williams No. 3	*					942.0				5 Bbl	Clinton
47	36	Sunday Creek Coal No. 142	1936	3687	1184-1200	3643-3677		992.4	-192	-2651		50 Bbl	Clinton
48	35	Sunday Creek Coal No. 141	1936	3604	1114-1136	3568-3604		930.3	-184	-2728		130 Bbl	Clinton

Coal Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
49	35	Sunday Creek Coal No. 143		1937	3590	1108-1126	3544-3574		914.8	-193	-2629		70 M 11 Bbl	Clinton
50	35	Sunday Creek Coal No. 42	*						943.5				92 Bbl	Clinton
51	35	Sunday Creek Coal No. 40	*						1012.9				170 Bbl	Clinton
52	35	Sunday Creek Coal No. 34	*						890.5				60 Bbl	Clinton
53	35	Sunday Creek Coal No. 38	*						887.2				330 Bbl	Clinton
54	35	Sunday Creek Coal No. 43	*						959.5				163 Bbl	Clinton
55	35	Sunday Creek Coal No. 160		1937	3609	1100-1133	3549-3580		880.2	-220	-2669		Dry	
56	35	Sunday Creek Coal No. 149		1937	3519	1015-1070	3482-3515		853.7	-161	-2628		200 M 225 Bbl	Clinton
57	35	Sunday Creek Coal No. 41	*						935.8				220 Bbl	Clinton
58	35	Sunday Creek Coal No. 47	*						1019.9				50 Bbl	Clinton
59	35	Sunday Creek Coal No. 157		1937	1090	1085-1090			910.1	-175			600 M	Berea
60	35	Sunday Creek Coal No. 46	*						1028.4				10 Bbl	
61	35	Sunday Creek Coal No. 62		1927	3467	998-1005	3430-3455		907.8	-90	-2522		14 Bbl	Clinton
62	34	Sunday Creek Coal No. 79		1929	3588	1179-1209	3579-3588		1032.3	-147	-2547		960 M	Clinton
63	34	Hocking Valley Prod. No. 213		1929	3462	-	3592-3624		1050.4		-2542		95 M	Clinton
64	34	E. L. McCune No. 5		1929	3477	-	3438-3468		882.8		-2555		12 Bbl	Clinton
65	34	Franklin Bank No. 8		1927	3530	1103-1143	3497-3527		959.9	-143	-2537		179 Bbl	Clinton
66	34	Sunday Creek Coal No. 57	*						883.0				135 Bbl	Clinton
67	34	Sunday Creek Coal No. 59	*						918.4				120 Bbl	Clinton
68	34	E. M. West No. 4		1929	3558	-	3520-3547		985.0		-2535		5 Bbl	Clinton
69	34	E. L. McCune No. 4		1929	3571	-	3521-2559		999.8		-2521		24 Bbl	Clinton
70	34	Sunday Creek Coal No. 58	*						1054.7				200 Bbl	Clinton
71	34	Sunday Creek Coal No. 65		1928	3573	1156-1190	3536-3566		1019.0	-137	-2517		64 Bbl	Clinton
72	34	E. L. McCune No. 6		1929	3568	1154-1184	3521-3557		1000.3	-154	-2521		46 Bbl	Clinton
73	34	Hocking Valley Prod. No. 212		1929	3524	-	3483-3513		976.7		-2506		55 Bbl	Clinton
74	34	Hocking Valley Prod. No. 209		1929	3538	-	3494-3532		985.2		-2509		55 Bbl	Clinton
75	33	Hocking Valley Prod. No. 214		1929	3407	-	3372-3399		927.2		-2445		40 Bbl	Clinton
76	33	Tracy Heirs No. 3		1920	3447	1045-1064	3417-3442		902.0	-143	-2515		50 Bbl	Clinton
77	33	Tracy Heirs No. 7		1945	3525	1130-1150	3493-3525		1025.3	-105	-2468		21 Bbl	Clinton
78	33	Tracy Heirs No. 2		1920	3508	1155-1170	3472-3502		976.0	-179	-2496		5 Bbl	Clinton
79	33	Hocking Valley Prod. No. 181	*						927.8				Oil	Clinton
80	33	Hocking Valley Prod. No. 180		1921	3350	-	3276-3311		967.8		-2308		125 Bbl	Clinton
81	32	Hocking Valley Prod. No. 191		1924	3380	-	3330-3365		901.9		-2428		57 Bbl	Clinton
82	32	Hocking Valley Prod. No. 190		1924	3335	-	3262-3310		958.6		-2303		105 Bbl	Clinton
83	32	Hocking Valley Prod. No. 194		1925	3370	-	3320-3350		911.9		-2408		19 Bbl	Clinton
84	32	Hocking Valley Prod. No. 193		1925	3275	-	3225-3256		945.1		-2280		500 M 25 Bbl	Clinton
85	32	C. H. C. and B. No. 69	*						1012.4				Oil	Clinton
86	31	J. C. Roan No. 3		1928	3245	-	3185-3215		962.9		-2222		Dry	

HARRISON TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
1	4	J. O. Guy No. 1		1929	3517	905- 923	3470-3517		722.7	-182	-2747		65 Bbl	Clinton
2	4	O. S. Moore No. 3		1930	3598	990-1002	3552-2592		863.1	-127	-2689		210 M	Clinton
													30 Bbl	
3	4	O. S. Moore No. 2		1930	3559	957- 967	3516-3553		834.0	-123	-2682		90 Bbl	Clinton
4	4	O. S. Moore No. 1		1930	3549	942- 954	3501-3539		817.5	-125	-2684		23 Bbl	Clinton
5	5	J. W. Guy No. 1		1930	3654	1043-1046	3585-3639		848.8	-194	-2736		Dry	
6	5	C. M. Downer No. 1		1929	3632	1050-1060	3575-3615		926.0	-124	-2649		280 M	Clinton
7	5	P. Offenbacker No. 2		1929	3476	912- 922	3419-3457		778.8	-133	-2640		50 M	Clinton
8	5	John Combs No. 1		1929	3548	990-1050	3497-3543		860.9	-129	-2636		60 Bbl	Clinton
9	5	P. Offenbacker No. 1		1929	3565	985-1002	3516-3540		864.9	-120	-2651		52 Bbl	Clinton
10	5	J. A. Larzelere No. 1		1929	3494	939- 953	3439-3491		815.0	-124	-2624		40 Bbl	Clinton
11	5	J. A. Larzelere No. 2		1929	3438	911- 923	3402-3438		785.2	-126	-2617		1,520 M	Clinton
													10 Bbl	
12	5	W. H. Combs No. 1		1929	3618	1065-1080	3586-3618		947.0	-118	-2639		1,240 M	Clinton
													5 Bbl	
13	5	Arthur Porter No. 1		1930	3536	973- 985	3478-3529		850.7	-122	-2627		300 M	Clinton
14	5	John Combs No. 1-A		1929	3568	1015-1025	3517-3561		888.5	-127	-2629		500 M	Clinton
													125 Bbl	
15	5	J. A. Larzelere No. 3		1930	3584	1015-1025	3506-3557		889.1	-126	-2617		Dry	
16	6	C. E. Porter No. 2		1930	3611	1065-1075	3551-3601		945.0	-120	-2606		190 M	Clinton
17	6	Helen Browning No. 1		1944	3605	1072-1097	3551-3592		975.6	-96	-2575		133 M	
18	7	Theodore Combs No. 3	*						990.3				Gas	Clinton
19	7	M. R. Larzelere No. 1		1928	3612	1063-1074	3547-3591		940.7	-122	-2606		Dry	
20	8	C. G. Brumage No. 1		1928	3631	1080-1100	3571-3618		960.7	-119	-2610		840 M	Clinton
21	8	J. D. Turner No. 1		1928	3610	1076-1083	3554-3606		931.1	-145	-2623		30 Bbl	Clinton
22	8	G. D. Allen No. 1	*						758.6				Dry	
23	9	W. R. Crowley No. 1		1929	3522	910- 928	3475-3522		730.0	-180	-2745		Oil	Clinton
24	9	G. E. Mast No. 1	*						725.7				Dry	
25	17	C. E. Cunningham No. 1	*						975.1				20 Bbl	Clinton
26	17	J. D. Burley No. 1		1929	3546	885- 900	3405-3441		778.4	-107	-2627		150 M	Clinton
27	17	George Gabriel No. 1		1929	3531	975- 995	3482-3520		854.1	-121	-2628		820 M	Clinton
													80 Bbl	
28	17	Goff-Delong No. 1		1929	3603	1057-1072	3556-3600		928.7	-128	-2627		55 M	Clinton
29	17	George Gabriel No. 2		1929	3458	900- 912	3390-3437		777.0	-123	-2613		260 M	Clinton
30	18	Curtis Wilson No. 1		1929	3429	883- 900	3384-3429		771.4	-112	-2613		1,290 M	Clinton
31	18	Mayme German No. 1		1928	3611	1052-1063	3537-3582		948.5	-104	-2589		70 M	Clinton
32	18	F. C. Moore No. 2		1930	3611	1079-1094	3557-3608		976.8	-102	-2580		460 M	Clinton
33	18	F. C. Moore No. 1		1928	3585	1066-1112	3535-3585		969.0	-97	-2566		120 M	Clinton
34	18	W. R. Stoneburner No. 1		-	3636	1120-1140	3575-3621		1024.4	-96	-2551		250 M	Clinton
													10 Bbl	
35	13	Clyde Watts No. 1		1929	3540	995-1015	3465-3505		911.3	-84	-2554		120 M	Clinton
36	13	J. L. Moore No. 1		1927					1031.1				400 M	Clinton
													24 Bbl	
37	24	W. J. Moore No. 1		1929	3562	1066-1078	3515-3557		969.2	-97	-2546		212 M	Clinton
38	19	James May No. 1		1929	3497	980- 995	3452-3497		908.8	-71	-2543		680 M	Clinton
39	19	James May No. 2		1929	3508	986-1026	3462-3506		901.2	-85	-2561		540 M	Clinton
40	19	Queen-Martin No. 1		1928	3527	1016-1025	3475-3523		910.2	-106	-2565		1,530 M	Clinton
41	19	William Wilson No. 1		1930	3582	1073-1089	3528-3570		977.1	-96	-2551		110 M	Clinton

Harrison Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
42	19	F. C. Moore No. 1	1930	3630	1100-1118	3577-3627		1009.7	-90	-2567		2,690 M	Clinton
43	19	Andrew Brown No. 1	1928	3686	1160-1177	3647-3686		1053.4	-107	-2594		3,470 M	Clinton
44	19	G. W. Wilson No. 2	1931	3602	1063-1079	3545-3593		954.5	-109	-2591		530 M	Clinton
45	19	G. W. Wilson No. 1	1928	3568	1055-1065	3534-3557		926.6	-128	-2607		1,250 M	Clinton
46	19	Alex Brown No. 1	1929	3695	1120-1132	3631-3675		1001.5	-119	-2630		Dry	
47	20	G. H. Moore No. 1	1929	3521	972- 992	3472-3521		887.6	-84	-2584		140 M	Clinton
48	20	G. H. Moore No. 1-A	1921	3579	1004-1025	3513-3551		846.0	-158	-2667		150 M	Clinton
49	20	C. H. Starcher No. 1	1928	3611	1050-1070	3570-3611		899.1	-151	-2671		1,300 M	Clinton
50	20	W. E. Brown No. 1	1929	3580	1005-1017	3528-3578		817.9	-187	-2710		380 M	Clinton
51	21	Lewis Hughes No. 2	1929	-	-	3464-3605		841.8		-2622		500 M 24 Bbl	Clinton
52	28	J. H. Driggs No. 1	-	-	-	3655-3719		928.9		-2726		25 Bbl	Clinton
53	28	R. W. Fitch No. 1	1948	3568	934- 959	3515-3558		766.6	-167	-2748		Dry	
54	28	M. S. Conaway No. 2	1941	3500	890- 915	3470-3490		759.6	-130	-2710		45 Bbl	Clinton
55	28	George Allen No. 2	1943	3529	895- 918	3464-3512		763.0	-132	-2701		10 Bbl	Clinton
56	29	Letha Milligan No. 1	1929	3684	1099-1105	3633-3678		943.6	-155	-2689		1,100 M 10 Bbl	Clinton
57	29	Catherine Mooney No. 1	1928	3682	1120-1140	3644-3682		973.0	-147	-2671		1,600 M	Clinton
58	29	Letha Milligan No. 2	1942	3599	1034-1050	3557-3599		933.1	-101	-2624		4,250 M	Clinton
59	30	W. J. Heeter No. 1	1926	3740	950- 965	3405-3448		809.9	-50	-2595		Dry	
60	30	D. A. Alwine No. 1	1930	3580	1032-1048	3517-3567		926.7	-105	-2590		Dry	
61	25	J. J. Wooster No. 1	1929	3483	980- 993	3422-3467		858.5	-122	-2564		Dry	
62	25	Charles McElwee No. 1	1921	3403	915- 950	3356-3392		779.6	-135	-2576		940 M	Clinton
63	36	Emmett McNulty No. 1	1943	3585	1096-1111	3544-3584		1013.8	-82	-2530		Dry	
64	32	Letha Milligan No. 1	1942	3614	998-1026	3570-3612		891.7	-106	-2678		640 M	Clinton
65	33	F. D. Lewis No. 1	1948	3586	980-1003	3570-3586		824.6	-155	-2745		2,100 M	Clinton

HOPEWELL TOWNSHIP

1	1	C. W. Smart No. 1	* 1925					955.4				300 M	Clinton
2	1	C. W. Smart No. 2	* 1925					1027.4				220 M	Clinton
3	2	Deffenbaugh No. 2	-	3150	-	3120-3150		1040.7		-2079		126 M	Clinton
4	2	L. E. Coble No. 1	-	2970	-	2922-2957		927.8		-1994		80 M	Clinton
5	3	Myrta Trout No. 1	1924	2891	-	2813-2839		903.3		-1910		Dry	
6	5	G. E. Ice No. 1	1926	2830	720- 728	2747-2792		919.7	+200	-1827		Dry	
7	5	Ralph Yost No. 1	*					859.2				450 M	Clinton
8	5	Frank Cooperrider No. 1	*					862.1				80 M	Clinton
9	6	W. H. Walser No. 2	1945	2737	648- 660	2655-2673		859.0	+211	-1796		Dry	
10	7	A. S. Chalfant No. 1	1926	2828	-	2705-2722		916.3		-1789		Dry	
11	8	F. S. Mechling No. 1	1926	2703	654- 669	2661-2693		855.2	+201	-1806		370 M 5 Bbl	Clinton
12	9	C. F. Ridenour No. 1	-	2825	790- 840	2780-2788		916.1	+126	-1864		Dry	
13	10	Noah Shelly No. 1	1945	3117	876- 886	3013-3101		1036.5	+160	-1977		Dry	
14	11	O. E. Campbell No. 1	1926	2975	762- 770	2913-2943		894.2	+132	-2019		Dry	
15	12	E. M. Tincher No. 1	*					814.1				Dry	
16	13	E. C. Axline No. 1	1943	3100	802- 814	2999-3036		925.3	+123	-2074		Dry	
17	15	G. V. Shrider No. 1	1929	2774	-	2742-2774		826.6		-1915		Dry	

Hopewell Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
18	17	E. A. Mechling No. 1	1930	2914	790- 809	2826-2847		998.7	+209	-1827		Dry	
19	18	R. F. Dornbier No. 1	1942	2834	751- 770	2758-2781		940.1	+189	-1818		Dry	
20	20	Emma Hetrick No. 1	1925	2970	840- 864	2889-2927		1011.8	+172	-1877		Dry	
21	21	O. J. Vandenbush No. 1	* 1928					956.4				Dry	
22	21	H. L. Ridenour No. 1	1929	3003	-	2960-2990		1018.1		-1942		Dry	
23	21	G. L. Bourgeois No. 1	1928	-	-	2928-2960		1011.6		-1916		Dry	
24	22	L. S. Parks No. 1	1926	2936	-	2841-2871		845.6		-1995		Dry	
25	24	E. M. Mitchell No. 1	1945	3001	780- 786	2946-2988		917.9	+138	-2028		330 M 10 Bbl	Clinton
26	24	Lulu B. Thompson No. 1	-	3119	-	3089-3119		976.0		-2113		Dry	
27	25	N. J. Spangler No. 1	1946	3035	820- 833	3025-3035		920.1	+100	-2105		Dry	
28	26	Dwight Bare No. 1	1945	3057	716- 722	2892-2937		847.3	+131	-2045		Dry	
29	26	Owen F. Swinehart No. 2	1947	2918	740- 780	2869-2903		843.7	+104	-2025		Dry	
30	27	C. M. Cochran No. 1	1945	3130	864- 900	2953-2963 3001-3023		989.2	+125	-1964		Dry	
31	28	J. Albert No. 1	1937	3039	890- 908	2979-3019		1021.1	+131	-1958		Dry	
32	28	Thurman Smith No. 2	1944	3060	895-1006	2996-3026		1044.9	+150	-1951		Dry	
33	28	Thurman Smith No. 1	1927	3037	900- 916	2993-3016		1051.4	+151	-1942		40 Bbl	Clinton
34	28	Elmo Cotterman No. 1	1928	-	-	2970-3004		1021.1		-1949		Dry	
35	29	Florien Eppley No. 1	1948	3018	897- 928	2933-2965		1006.5	+109	-1927		Dry	
36	30	Sarah Anderson No. 1	1927	2983	917- 948	2938-2963		1084.5	+167	-1854		Dry	
37	30	C. A. Slade No. 1	1927	2975	915- 948	2934-2958		1083.5	+168	-1851		520 M	Clinton
38	30	Quincy Leckrone No. 1	1927	2963	933- 968	2931-2958		1104.0	+171	-1827		200 M	Clinton
39	31	Cora Miller No. 1	1937	2870	840- 880	2835-2866		1006.7	+167	-1828		Dry	
40	31	G. F. Shrider No. 3	1936	2893	880- 913	2864-2889		1033.6	+154	-1830		1,500 M	Clinton
41	31	D. J. Lones No. 1	1937	2975	907- 947	2911-2945		1063.2	+156	-1848		Dry	
42	31	E. W. Poorman No. 1	1936	2908	855- 890	2863-2905		995.2	+140	-1868		1,110 M	Clinton
43	32	Lloyd M. Poorman No. 1	1936	2939	868- 903	2891-2931		1008.2	+140	-1883		70 M	Clinton
44	32	Burl Cotterman No. 1	1936	3007	905- 998	2947-2982		1047.0	+142	-1900		Dry	
45	33	L. J. Curry No. 1	1948	3020	915- 940	2981-3016		1046.1	+131	-1935		300 M	Clinton
46	33	H. W. Dupler No. 1	1941	3035	928- 975	2990-3010 3016-3019		1047.3	+119	-1943		160 M	Clinton
47	33	G. L. Eppley No. 1	1943	3072	945- 998	3037-3057		1061.2	+116	-1976		430 M	Clinton
48	34	R. R. Weed No. 1	1944	3118	958- 994	3058-3094		1064.3	+106	-1994		Dry	
49	34	J. R. Underwood No. 1	1945	3074	922- 927	3040-3072		1027.3	+105	-2013		35 Bbl	Clinton
50	34	Earl Baker No. 4	1945	3022	865- 935	2982-3015		963.6	+99	-2018		75 Bbl	Clinton
51	34	Earl Baker No. 3	1945	2972	801- 818	2928-2962		895.7	+95	-2032		400 M 60 Bbl	Clinton
52	34	Earl Baker No. 1	1943	2978	785- 790	2918-2944		880.8	+96	-2037		35 Bbl	Clinton
53	34	Earl Baker No. 2	1944	2966	780- 785	2919-2943		871.8	+92	-2047		Dry	
54	35	Esther Tolliver No. 1	1920	3022	805- 845	2954-2981 2983-2987		887.2	+82	-2067		Dry	
55	36	C. R. Fowler No. 1	1946	3167	865- 925	3104-3142		963.5	+98	-2141		Dry	
56	36	Mayme Ream No. 1	1945	3138	865- 930	3087-3115		956.7	+92	-2130		Dry	
57	36	Mayme Ream et al No. 2	1946	3183	831- 846	3060-3089		922.8	+92	-2137		Dry	

JACKSON TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
1	1	P. J. Smith No. 4	*						847.0					
2	1	P. H. Burgoon No. 3	*						845.6					
3	1	James McGonagle No. 1	*						919.3					
4	2	R. J. Snider No. 6	*						849.2					
5	2	R. J. Snider No. 5	*						891.4					
6	3	A. M. Murdock No. 3	*						986.5					
7	3	Mary Brookhart No. ?	*						985.2					
8	4	Harriet Klinger No. 1		1929	740	736- 740			920.0	+184			150 M	Berea
9	4	Ida Householder No. 2		1927	853	850- 853			958.1	+108			116 M	Berea
10	4	W. W. Klinger No. 1		1927	768	761- 768			871.6	+111			20 M	Berea
11	4	W. W. Klinger No. 2		1928	-	800- 805			923.7	+124			Dry	
12	5	J. R. Linville No. 3		1926	-	775- 785			887.7	+113			Dry	
13	5	M. M. Griggs No. 2		1919	2892	-	2855-2886		915.4		-1940		2 Bbl	Clinton
14	6	J. S. Johnson No. 2	*						988.2					
15	6	J. A. Johnson No. 4	*						977.5					
16	7	T. L. Griggs No. 7	*						809.8					
17	7	T. L. Griggs No. 2	*						809.3					
18	8	T. L. Griggs No. 4	*						809.2					
19	8	T. L. Griggs No. 1		1910	-	-	2957-2982		810.7					
20	9	N. H. Palmer No. 4		1916	2910	780- 810	2880-2910		879.9	+100	-2000		35 Bbl	Clinton
21	9	N. H. Palmer No. 3		1916	2977	850- 890	2934-2967		933.5	+83	-2001		10 Bbl	Clinton
22	10	D. A. Clark No. 6		1914	2922	750-	2884-2960		879.5	+129	-2005		260 M	Clinton
23	10	D. A. Clark No. 4		1913	2978	800- 860	2931-2940		819.0	+19	-2112		30 Bbl	Clinton
24	10	Frank Metzgar No. 7		1930	-	742- 750			823.4	+81			Dry	
25	11	Russell Householder No. 2		1945	851	839- 851			829.5	-10			Dry	
26	11	William Folk No. 1		1919	3123	-	3082-3119		835.6		-2246		160 Bbl	Clinton
27	13	V. E. Marlow No. 9	*						859.8					
28	13	V. E. Marlow No. 8	*						892.4					
29	13	V. E. Marlow No. ?	*						858.2					
30	14	Samuel Paxton No. 3-A		1925	-	-	3058-3094		923.1		-2135		15 Bbl	Clinton
31	14	Samuel Paxton No. 3	*						957.6					
32	14	Samuel Paxton No. 2	*						957.4					
33	14	Samuel Paxton No. 1	*						977.8					
34	14	W. V. McGarey No. 3	*						968.4					
35	14	Martin Burns No. 4		1925	-	-	3063-3098		978.1		-2085		24 Bbl	Clinton
36	15	M. Nader No. 2	*						979.1					
37	15	Noah Garey No. 2	*						948.5					
38	15	D. T. McCann No. 1		1919	3132	953- 988	3091-3131		1035.3	+82	-2056		Oil	Clinton
39	15	Edward Poling No. 2	*						862.4					
40	16	V. S. Studer No. 2	*						875.6					
41	17	Ivan Love No. 5	*						912.3					
42	17	N. H. Palmer No. 6	*						904.6					
43	17	Elizabeth Crosbie No. 5	*						888.6					
44	17	Elizabeth Crosbie No. 1		1909	2864	845- 890	2829-2861		844.3	-1	-1985		100 Bbl	Clinton
45	18	J. M. Brandt No. 1	*						814.9					
46	18	J. M. Brandt No. 4	*						817.0					
47	18	J. M. Brandt No. 5	*						826.8					
48	19	F. Householder No. 5		1924	2808	-	2779-2808		874.3		-1905		Dry	
49	19	C. E. Turner No. 9	*						824.3					

Jackson Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
50	20	Samuel Shumaker No. 1	*						818.0					
51	20	H. T. Purvis No. 1	*						819.9					
52	21	John Klinger No. 5		1931	775	760- 775			831.9	+72			Dry	
53	28	William Spohn No. 2		1931	802	800- 802			1013.1	+213			370 M	Berea
54	29	R. B. Huston No. 1		1931	795	780- 795			853.3	+73			Dry	
55	29	C. E. Huston No. 1		1931	762	757- 762			854.9	+98			70 M	Berea
56	29	Edward Hull No. 2	*	1930					951.4					
57	30	Mary Larimer No. 1		1929	-	-	2844-2868		927.2		-1917		10 Bbl	Clinton
58	34	R. J. Adcock No. 1		1926	3117	938- 963	3054-3081		986.3	+48	-2068		Dry	
						MADISON TOWNSHIP								
1	3	W. H. Bartlett No. 1		1939	3325	800- 815	3162-3195		816.8	+17	-2345		Dry	
2	4	Thoburn Krofft No. 1		1940	3160	850- 865	3123-3162		842.2	-8	-2281		Dry	
3	4	Thoburn Krofft No. 2		1947	3298	863- 868	3158-3208		904.3	+41	-2254		Dry	
4	5	J. R. Thompson No. 1	*						945.2				Dry	
5	5	Jesse Flynn No. 1	*						895.0				3,000 M	Clinton
6	5	W. L. Bolin No. 1		1908	3100	822- 832			895.0	+73	-2160		1,250 M	Clinton
7	6	Alva Starrett No. 1		1919	2990	740- 755	2948-2985		842.5	+102	-2106		500 M	Clinton
8	7	Adda Wilkins No. 1		1939	2902	690- 705	2912-2942		804.5	+114	-2108		398 M	Clinton
9	7	E. C. Smith No. 1	*						1015.2				2,690 M	Clinton
10	7	F. E. Smith No. 1	*						800.6				390 M	Clinton
11	8	Edna Carvell No. 1	*						947.8				6,060 M	Clinton
12	9	M. E. Dailey No. 2	*						885.2				Dry	
13	9	M. E. Dailey No. 1		1909	3315	902- 910	3225-3290		966.5	+65	-2258		Dry	
14	10	D. M. Caugenbaugh No. 1		1944	3305	None	3292-3305		989.0		-2303		2,940 M	Clinton
15	10	Theodore Combs No. 2		1944	3316	970- 990	3304-3316		994.6	+25	-2309		1,500 M	Clinton
16	10	Theodore Combs No. 3		1944	3367	965- 975	3305-3351		979.8	+15	-2325		Dry	
17	10	Theodore Combs No. 1		1943	3371	956- 976	3299-3365		982.9	+27	-2316		76 Bbl	Clinton
18	15	John Gorski No. 1		1943	3331	971- 986	3316-3331		990.5	+19	-2326		1,780 M	Clinton
19	15	John Gorski No. 2		1943	3469	990-1005	3366-3420		1009.6	+20	-2356		Dry	
20	15	Ross Wilkins No. 2		1945	3358	960- 974	3298-3343		1002.1	+42	-2296		740 M	Clinton
21	16	B. Lemasters No. 1	*						913.6				350 M	Clinton
22	16	C. E. Wilkins No. 1	*						849.8				Dry	
23	16	Melick Bros. No. 16	*						792.2				40 M	Clinton
24	17	Melick Bros. No. 15	*										12 Bbl	
25	17	J. E. Wilkins No. 1	*						791.4				30 Bbl	Clinton
26	17	E. D. Wilkins No. 1	*	-	3071	710- 722	2992-3043		797.9				250 M	Clinton
27	17	Maurice Smith No. 1	*						796.4	+86	-2196		Dry	
28	18	E. A. Schofield No. 1	*						985.9				Dry	
29	18	Alonzo Burgess No. 1		1924	3125	856- 866	3108-3121		882.0				Dry	
30	18	Ruth Lattimer No. 2	*						946.4	+90	-2162		1,500 M	Clinton
31	18	Ruth Lattimer No. 1	*						1004.8				170 M	Clinton
32	19	B. C. Wilkins No. 1		1946	3269	955- 970	3192-3228		1007.6				770 M	Clinton
							3242-3252		1030.2	+75	-2162		Dry	

Madison Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
33	20	E. G. Melick No. 1		1945	3274	930- 942	3194-3237		998.0	+68	-2196		Dry	
34	20	Melick Bros. No. 3	*						795.6				35 Bbl	Clinton
35	21	Melick Bros. No. 18	*						867.6				10 Bbl	Clinton
36	21	Melick Bros. No. 17	*						802.9				60 Bbl	Clinton
37	21	Melick Bros. No. 12	*						841.1				10 Bbl	Clinton
38	21	I. K. Melick No. 1	*						881.1				Dry	
39	21	J. E. Madden No. 1		1946	3174	774- 793	3107-3171		831.9	+58	-2275		85 Bbl	Clinton
40	22	Francis Love No. 1	*						1014.5				Dry	
41	22	L. T. Harkness No. 1		1945	3424	965- 975	3361-3404		988.3	+23	-2373		25 Bbl	Clinton
42	22	L. T. Harkness No. 2		1946	3436	988-1003	3371-3427		1010.7	+23	-2360		75 Bbl	Clinton
43	27	E. A. Forsythe No. 2		1947	3431	979- 983	3363-3418		1005.5	+26	-2358		25 Bbl	Clinton
44	27	E. A. Forsythe No. 1		1947	3316	913- 921	3266-3304		948.4	+35	-2318		160 M 51 Bbl	Clinton
45	27	R. B. Hurst No. 1		1947	3363	958- 970	3301-3350		979.9	+22	-2321		22 Bbl	Clinton
46	28	A. H. Melick No. 1	*						891.9				Dry	
47	29	E. M. Lewis No. 1-A		1948	3162	790- 795	3094-3146		827.7	+38	-2266		Dry	
48	29	E. M. Lewis No. 1		1946	3268	804- 814	3128-3181		844.9	+41	-2283		Dry	
49	31	J. W. Melick No. 1		1936	3265	958- 970	3155-3162		1023.0	+65	-2132		Dry	
50	32	Blanch Saum No. 1		1943	3359	935- 945	3221-3274		985.6	+51	-2235		Dry	
51	32	L. V. Augustus No. 1		1944	3326	973- 980	3265-3317		992.6	+20	-2272		Dry	
52	33	Clinton Hammer No. 1		1943	3358	1010-1016	3298-3338		1027.1	+17	-2271		57 Bbl	Clinton
53	33	Clinton Hammer No. 2		1943	3319	965- 970	3254-3287		970.8	+6	-2283		12 Bbl	Clinton
54	33	Leonard Sampson No. 2		1943	3289	932- 936	3225-3265		938.9	+7	-2286		65 Bbl	Clinton
55	33	Leonard Sampson No. 1		1942	3275	900- 905	3210-3270		915.1	+15	-2295		55 Bbl	Clinton
56	33	Owen N. Ford No. 2		1947	3203	834- 845	3144-3185		848.1	+14	-2296		40 Bbl	Clinton
57	33	C. W. Shaw No. 2		1946	3278	934- 945	3229-3268		954.7	+21	-2274		90 Bbl	Clinton
58	33	C. W. Shaw No. 1		1946	3316	945- 954	3256-3298		962.2	+17	-2294		100 Bbl	Clinton
59	33	Owen N. Ford No. 1		1943	3217	860- 865	3162-3205		875.5	+15	-2287		760 M 22 Bbl	Clinton
60	33	R. K. Henderson No. 1		1944	3335	945- 953	3272-3310		955.7	+11	-2316		Dry	
61	33	C. L. Holbein No. 2		1943	3308	915- 920	3246-3281		938.1	+23	-2308		15 Bbl	Clinton
62	33	C. L. Holbein No. 1		1942	3368	984- 994	3305-3358		989.2	+5	-2316		Dry	
63	34	M. A. Henderson No. 2		1947	3388	1015-1025	3349-3388		1020.4	+5	-2329		50 Bbl	Clinton

MONDAY CREEK TOWNSHIP

1	6	Elmer Sheets No. 1	*						825.7				10 Bbl	Clinton
2	9	H. V. Woods No. 1	*						809.9				Dry	
3	10	Leonard Bell No. 1		1904	908	778- 908			816.6	+39			Dry	
4	16	J. D. Nixon No. 1		1925	719	718- 719			771.9	+54			500 M	Berea
5	17	Franklin Wolfe No. 1		1925	817	795- 817			851.0	+56			Dry	
6	17	A. H. Patton No. 2		1925	745	741- 745			798.5	+57			300 M	Berea
7	20	S. S. Howdyshell No. 2		1937	737	729- 737			747.9	+19			Dry	
8	23	Sebastian Spicer No. 1		1919	3116	902- 938	3084-3116		894.0	-8	-2190		28 Bbl	Clinton

MONROE TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
1	1	Sunday Creek Coal No. 259		1945	4021	1238-1264	3983-4018		945.6	-292	-3037		760 M	Clinton
2	1	Sunday Creek Coal No. 248		1944	1289	1255-1285	-		965.1	-290			Dry	
3	1	M. J. Newberry No. 1		1948	4023	1162-1177	3892-3932		870.6	-291	-3021		Dry	
4	2	Worley Deaver No. 2	*						815.5				200 M	Berea
5	2	Worley Deaver No. 3		1936	1073	1053-1071			795.3	-258			150 M	Berea
6	3	Sunday Creek Coal No. 264		1945	1187	1166-1186			933.6	-232			Dry	
7	9	Sunday Creek Coal No. 228		1943	3832	1135-1147	3737-3738		895.5	-240	-2842		Dry	
8	10	Branson Pierce No. 4	*						896.8				Oil	
9	10	Branson Pierce No. 1	*						896.9				Oil	
10	11	M. J. Newberry No. 1		1948	2547	1280-1305			1012.3	-268			Dry	
11	12	T. F. Haughren No. 1		1948	4046	1287-1304	4007-4046		1002.9	-284	-3004		204 M	Clinton
12	13	T. Shottlekarb No. ?	*						1003.0				Oil	Berea
13	13	Eliz. Cunion No. ?	*						1009.6				Oil	Berea
14	14	L. I. Love No. 1	*						1003.0				Oil	Berea
15	14	M. H. Donahue No. 8		-	1083	1064-1069			764.5	-300			4 Bbl	Berea
16	14	M. H. Donahue No. 15		1926	1135	1127-1135			825.9	-301			Dry	
17	14	G. H. Weaver No. 7		1898	1025	1020-1023			752.4	-268			20 Bbl	Berea
18	14	G. H. Weaver No. 6		1898	1010	1000-1002			729.8	-270			Dry	
19	15	Anna Weaver No. 1		1894	1160	1150-1155			861.4	-289			30 Bbl	Berea
20	15	Anna Weaver No. 3		1893	1115	1102-1106			812.3	-290			20 Bbl	Berea
21	15	Henry Esselstein No. 6		1915	1145	1130-1133			884.9	-245			5 Bbl	Berea
22	15	Henry Esselstein No. 3		1896	1182	1172-1175			899.7	-272			20 Bbl	Berea
23	16	Della Miskell No. ?	*						780.1				Oil	
24	19	Sunday Creek Coal No. 212		1942	1065	1037-1060			844.4	-193			Dry	
25	19	Sunday Creek Coal No. 159		1937	991	938- 960			746.4	-192			Dry	
26	19	Sunday Creek Coal No. 211		1942	994	962- 994			765.3	-197			160 M	Berea
27	19	Sunday Creek Coal No. 151		1937	3575	974-1018	3514-3547		771.2	-203	-2743		150 M	Clinton
28	19	Sunday Creek Coal No. 158		1937	973	947- 973			728.9	-218			190 M	Berea
29	22	Corning Mining Co. No. 1		1926	1020	1017-1020			841.0	-176			4 Bbl 1,500 M	Berea
30	22	F. L. Rumer No. 2		1939	3722	1018-1047	3696-3722		840.4	-178	-2856		Dry	
31	22	Corning Mining No. 2		1923	3737	995-1015	3684-3716		819.0	-176	-2865		Dry	
32	25	Elwood Newberry No. 1	*						854.1				Dry	
33	27	J. C. Holland No. 12	*						710.9				Oil	
34	27	J. C. Holland No. 15		1946	1057	1010-1034			720.1	-290			Oil	Berea
35	27	J. C. Holland No. 11	*						715.2				Oil	
36	28	M. P. Denman No. 1		1939	3814	1090-1112	3743-3768		836.9	-253	-2906		Dry	
37	28	G. M. Jones Co. No. 5		1938	3734	1080-1092	3696-3722		831.1	-249	-2865		1,100 M	Clinton
38	28	G. M. Jones Co. No. 7		1939	3745	1086-1107	3703-3738		845.7	-240	-2857		1,400 M	Clinton
39	29	G. M. Jones Co. No. 6		1939	3774	1120-1149	3736-3753		877.8	-242	-2858		640 M	Clinton
40	29	William Williams No. 1	*						908.2				Gas	
41	30	W. T. Marshall No. 5		1937	3686	1040-1056	3538-3578		820.3	-220	-2718		Gas	Berea
42	30	W. T. Marshall No. 1		1941	3747	1116-1132	3629-3677		905.0	-211	-2724		Dry	
43	31	W. T. Marshall No. 3		1922	3736	-	3671-3711		960.1		-2711		Dry	
44	31	W. T. Marshall No. 4		1937	3771	1174-1190	3671-3711		961.1	-213	-2710		Dry	
45	31	Sunday Creek Coal No. 1	*						954.2				1,200 M	Clinton
46	31	Sunday Creek Coal No. 224		1943	3717	1170-1184 1192-1196	3674-3710		837.5	-333	-2837		90 Bbl	Clinton

Monroe Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number		Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
47	31	Sunday Creek Coal No. 235		1943	3549	1120-1134	3507-3541		668.6	-451	-2838		70 Bbl	Clinton
48	31	Sunday Creek Coal No. 240		1944	3708	1108-1130	3606-3650		773.9	-334	-2832		17 Bbl	Clinton
49	31	W. T. Marshall No. 1	*	1921	1186	-			946.7				2,300 M	Berea
50	31	W. T. Marshall No. 2	*	1922	1103	-			862.2				1,400 M	Berea
51	31	Sunday Creek Coal No. 239		1944	3603	1066-1080	3555-3596		827.3	-239	-2728		50 Bbl	Clinton
52	31	Sunday Creek Coal No. 241		1944	3658	1120-1142	3613-3658		771.5	-349	-2842		100 M	Clinton
53	31	Lucy Ward No. 2	*	1921	1149	-			899.6				420 M	Berea
54	31	Lucy Ward No. 3		1945	3694	1135-1155	3634-3666		894.5	-241	-2740		140 M	Clinton
55	31	Lucy Ward No. 1	*	1921	1111	-			865.0				2,300 M	Berea
56	31	Martin Bayne No. 1	*	1921	1156	-			911.6				1,900 M	Berea
57	31	Martin Bayne No. 2	*	1922	1186	-			956.4				250 M	Berea
58	31	Lena Welling No. 1	*	1921	1162	-			896.3				420 M	Berea
59	31	Sullivan Maxwell No. 1	*	1921	1099	-			847.0				2,100 M	Berea
60	32	Edgar Erwin No. 1		1921	3776	1110-1135	3713-3764		874.1	-236	-2839		1,000 M	Berea
61	32	William Skinner No. 1	*						885.9				40 M	Berea
62	32	Sunday Creek Coal No. 250		1944	1107	1094-1107			847.4	-247			70 M	Berea
63	32	Sunday Creek Coal No. 246		1944	1114	1088-1114			841.2	-247			Dry	
64	34	Sunday Creek Coal No. 258		1945	1265	1235-1255			952.7	-282			Dry	
65	35	Sunday Creek Coal No. 252		1945	1163	1096-1150			782.6	-313			Dry	

PIKE TOWNSHIP

1	3	John Kelley No. 1	*						879.9				Dry	
2	4	T. J. Selby No. 1	*						869.7				Dry	
3	5	W. R. Calkins No. 1		1924	-	887- 891			879.6	-7			23 M	Berea
4	5	W. R. Calkins No. 3		1926	935	919-			913.9	-5			3 Bbl	Berea
5	5	Herbert Allen No. 1		1929	-	910- 918			903.2	-7			Dry	
6	5	Herbert Allen No. 2		1929	918	910- 916			898.7	-11			Dry	
7	5	J. B. Sands No. 1		1930	3317	-	3267-3315		1005.7		-2261		Dry	
8	6	R. E. Bennett No. 2		1929	3186	-	3145-3183		918.7		-2226		6 Bbl	Clinton
9	7	Catherine Mains No. 3	*						972.8				Dry	
10	7	Ludowici Celedon Co. No. 4	*						919.7				Oil	
11	7	Nora Harden No. 1	*						942.3				Oil	
12	8	T. J. Selby No. 1	*						871.5				Dry	
13	12	J. V. McTeague No. 1		1932	3545	-	3480-3535		967.7		-2512		Dry	
14	12	J. H. Calhoun No. 2		-	3586	1110-1120	3529-3586		938.9	-171	-2590		25 Bbl	Clinton
15	13	Samuel Allen No. 1		1918	3464	960- 975	3413-3449		815.2	-145	-2598		Dry	
16	13	W. D. Lindawood No. 1		-	3350	945- 960	3300-3335		827.0	-118	-2473		Dry	
17	15	J. H. Stansberry No. 1		1931	-	-	3420-3466		1035.6		-2384		200 M 7 Bbl	Clinton
18	16	S. C. Boyle No. 1		1928	3362	-	3326-3336		948.7		-2377		1,000 M	Clinton
19	16	S. K. Newberry No. 1		1929	3414	-	3366-3414		1002.6		-2363		400 M 7 Bbl	Clinton
20	16	G. T. McClellan No. 2		1925	932	930- 932			949.8	+20			600 M	Berea
21	16	McClellan-Ackerman No. 2	*						994.2				Oil	
22	17	W. A. King No. 3	*						938.6				Oil	
23	17	J. H. Henry No. 1		1913	3291	990-1010	3250-3280		972.2	+18	-2278		100 Bbl	Clinton

Pike Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
24	17	J. H. Henry No. 3	1913	3269	970- 995	3232-3269		969.2	-1	-2263		40 Bbl	Clinton
25	17	Bridget Flowers No. 1	*					876.1				Oil	
26	18	M. C. Donahue No. 1	*					938.1				Oil	
27	21	Margaret Schneider No. 2	1943	3515	1090-1104 1122-1153	3415-3447		1042.2	-48	-2373		Dry	
28	26	Thomas Kinsel No. 1	1943	3674	1103-1123	3513-3546		1007.0	-96	-2506		Dry	
29	28	I. D. Brown No. 1	1937	1144	1085-1142			1025.5	-60			Dry	
30	28	Henry Hillis No. 4	1925	-	831- 842			1084.8	+254			Dry	
31	29	G. B. Skinner No. 1	*					1039.4				Oil	
32	34	T. M. Stafford No. 5	-	3549	1075-1080	3441-3508		972.3	-103	-2469		Dry	
33	35	W. J. Hillis No. 1	1925	1132	1047-1132			964.8	-82			Dry	
34	35	I. M. Kinsell No. 1	1946	3495	965- 970	3382-3455		849.2	-116	-2533		Dry	
					PLEASANT TOWNSHIP								
1	21	M. B. Penrod No. 1	1948	3946	1145-1162 1212-1235	3829-3871	3936-3944	1015.5	-197	-2814	-2921	330 M	Medina Clinton
2	21	R. L. Hehl No. 1	1947	3886	1210-1214 1144-1167	3760-3792	3877-3885	954.9	-190	-2805	-2922	360 M	Medina
3	21	J. W. Weaver No. 1	1948	3873	1205-	3741-3780	3848-3858	962.8	-181	-2778	-2885	110 M	Medina
4	21	Pettit-Ault No. 1	1948	3871	1159-1184	3750-3787	3861-3866	974.2	-185	-2776	-2887	420 M	Clinton Medina
5	30	G. B. Forguer No. 1	*					809.7					
6	29	M. V. Shahan No. 1	1948	3861	1170-1184	3740-3778	3846-3855	986.1	-184	-2754	-2860	100 M	Clinton Medina
7	28	M. L. Deaver No. 2	1948	3802	1083-1105	3685-3725	3794-3802	886.5	-197	-2799	-2908	200 M	Medina
8	28	M. L. Deaver No. 1	1947	3844	1110-1140	3729-3772	3838-3844	918.6	-191	-2810	-2919	1,180 M	Medina
9	28	Charles Altier No. 7	1932	1046	1024-1043			832.6	-191			Dry	
10	33	John Cavote No. 1	1948	3768	1010-1029	3650-3690	3758-3765	807.7	-202	-2842	-2950	250 M	Clinton
11	33	John Cavote No. 4	1941	1079	1059-1079			844.8	-214			2 Bbl	Medina Berea
12	33	John Cavote No. 5	1941	1072	1052-1072			842.0	-210			5 Bbl	Berea
13	33	G. C. Bennett No. 1	1948	3764	1002-1023	3638-3677	3748-3756	793.7	-208	-2844	-2954	285 M	Medina
14	33	Mary Monahan No. 9	1932	1118	1073-1093			821.4	-252			7 Bbl	Berea
15	32	Wm. Longstreth No. 14	*					940.8				Dry	
16	32	Wm. Longstreth No. 6	1930	-	1107-1126			894.5	-213			1½ Bbl	Berea
17	32	Wm. Longstreth No. 4	1930	-	1075-1096			863.1	-212			3 Bbl	Berea
18	31	Estella Critchet No. 1	1929	1156	1116-1154			945.4	-171			7 Bbl	Berea
19	36	George Wesney No. 1	*					824.0				Dry	
20	6	Willard Rugg No. 1	1943	3675	1160-1182	3645-3675		939.5	-221	-2706		1,500 M	Clinton
21	6	Alex Matyas No. 4	1929	1151	1132-1148			946.0	-186			125 M	Berea
22	6	Thomas Norris No. 1	1929	1059	1043-1058			847.5	-196			238 M	Berea
23	6	Alex Matyas No. 3	1929	1102	1032-1047 1093-1102			837.8	-194			100 M	Berea
24	4	Sunday Creek Coal No. 275	1949	3744	1125-1152	3733-3744		906.2	-219	-2827		658 M	Clinton
25	4	Sunday Creek Coal No. 251	1945	1162	1158-1162			912.0	-246			Dry	
26	4	John West No. 1	1948	3754	1130-1175	3737-3754		907.8	-222	-2829		3,360 M	Clinton

Pleasant Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
27	4	Sunday Creek Coal No. 272	1948	3746	1000-1015	3613-3670		768.9	-231	-2844		430 M	Clinton
28	4	Sunday Creek Coal No. 274	1948	3739	998-1020	3611-3653	3728-3732	767.8	-230	-2843	-2960	Dry	
29	4	Sunday Creek Coal No. 205	1941	1039	1002-1031			766.2	-236			Dry	
					READING TOWNSHIP								
1	2E	Homer White No. 1	1925	3008	810- 845	2973-3000		887.9	+78	-2085		Dry	
2	4	Alva Snider No. 1	1941	3107	967-1010	3054-3079		1088.4	+121	-1966		300 M	Clinton
3	4	W. H. Rouseculp No. 1	1940	3076	968-1003	3036-3072		1095.7	+128	-1940		1,400 M	Clinton
4	4	Gordon Young No. 1	1941	3054	945-1034	3008-3036		1068.7	+124	-1939		500 M	Clinton
5	5	Homer Beard No. 2	1941	993	991- 993			1131.0	+140			370 M	Berea
6	5	Elizabeth Miller No. 1	1940	3061	944-1065	3025-3056		1087.5	+143	-1938		740 M	Clinton
7	5	William Stoner No. 1	1935	3069	975-1020	3018-3053		1109.8	+135	-1908		450 M	Clinton
8	5	Homer Beard No. 1	1935	3081	978-1065	3009-3039		1108.6	+131	-1900		Dry	
9	5	O. T. Vansickle No. 1	1935	3033	960- 990	2990-3020		1089.0	+129	-1901		1,245 M	Clinton
10	5	Elmer Vansickle No. 2	1936	2957	895- 940	2905-2949		1068.6	+174	-1836		300 M	Clinton
11	5	Elmer Vansickle No. 1	1932	2952	935- 965	2904-2935		1008.2	+73	-1896		40 M 7 Bbl	Clinton
12	5	O. T. Vansickle No. 3	1936	2968	895- 925	2928-2966		1045.4	+150	-1883		520 M	Clinton
13	6	H. L. Rouseculp No. 2	1936	2962	880- 920	2892-2917		1018.2	+138	-1874		Dry	
14	6	C. E. Stoltz No. 2	1936	2966	920- 956	2925-2965		1058.5	+138	-1867		1,490 M	Clinoon
15	6	C. E. Stoltz No. 1	1936	2877	839- 886	2836-2876		986.2	+147	-1850		820 M	Clinton
16	6	L. O. Gilmore No. 1	1933	840	833- 840			959.5	+126			Dry	
17	6	L. O. Gilmore No. 2	1933	840	838- 840			957.2				110 M	Berea
18	6	L. O. Gilmore No. 3	1934	883	880- 883			993.7				Dry	
19	6	H. L. Rouseculp No. 1	1936	2843	822- 882	2818-2843		979.5	+157	-1839		3,190 M	Clinton
20	6	Anna King No. 1	1936	2862	823- 862	2804-2834		978.4	+155	-1826		Dry	
21	6	W. A. Rhulman No. 1	1936	2873	850- 878	2821-2849		1003.5	+155	-1818		140 M	Clinton
22	1W	S. G. Smith No. 1	1930	2884	835- 880	2797-2823		1006.1	+171	-1791		Dry	
23	1W	W. H. Winegardner No. 1	1936	2815	810- 842	2760-2787		981.8	+172	-1778		460 M	Clinton
24	1W	Noble Hoover No. 1	1936	2768	795- 830	2748-2768		981.7	+187	-1766		5,000 M	Clinton
25	2W	A. B. Shaw No. 1	1941	2768	793- 829	2720-2732		1003.8	+211	-1716		Dry	
26	2W	Effie Love No. 1	1940	2805	788- 875	2704-2728		999.9	+212	-1704		240 M	Clinton
27	2W	Effie Love No. 2	1945	2726	775- 810	2695-2708		992.1	+217	-1703		Dry	
28	11W	Arthur Kinsie No. 1	*					1073.0				Dry	
29	11W	D. W. Baker No. 2	1924	2895	923- 965	2860-2870		1103.0	+180	-1757		10 Bbl	Clinton
30	11W	Baker-Folk No. 4	1928	-	-	2833-2860		1082.1		-1751		10 Bbl	Clinton
31	12W	Tennyson Crist No. 1	1926	2876	924- 959	2844-2868		1088.0	+164	-1756		38 Bbl	Clinton
32	12W	Tennyson Crist No. 2	1929	2803	850- 883	2770-2799		1020.4	+170	-1750		20 Bbl	Clinton
33	12W	Tennyson Crist No. 3	1929	2785	835- 870	2755-2781		1005.3	+170	-1750		45 Bbl	Clinton
34	12W	W. F. Hummel No. 1	1929	2765	810- 840	2735-2750		978.7	+169	-1756		879 M	Clinton
35	12W	W. F. Hummel No. 2	1929	2796	831- 876	2767-2795		999.6	+169	-1767		1,470 M	Clinton
36	12W	C. W. Spohn No. 3	1929	2830	865- 895	2786-2812		1030.8	+166	-1755		Dry	
37	12W	C. W. Spohn No. 1	1928	2831	865- 905	2801-2828		1036.0	+171	-1765		60 Bbl	Clinton
38	12W	C. W. Spohn No. 2	1929	2848	885- 920	2810-2839		1041.9	+157	-1768		85 Bbl	Clinton
39	12W	R. C. Solt No. 1	1929	2763	810- 842	2726-2760		957.8	+148	-1768		192 Bbl	Clinton
40	12W	L. C. Bowman No. 1	1929	2784	808- 845	2744-2769		958.6	+151	-1785		Dry	

Reading Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Numeer	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
41	12W	R. C. Solt No. 2	1930	2881	903- 940	2847-2881		1058.1	+155	-1789		35 Bbl	Clinton
42	12W	W. A. Miller No. 1	1929	2886	870- 905	2815-2848		1027.6	+158	-1787		Dry	
43	7	F. D. Helser No. 1	1930	2951	920- 964	2883-2917		1066.6	+147	-1816		Dry	
44	7	W. A. Miller No. 2	1930	2879	885- 925	2840-2870		1030.4	+145	-1810		460 M 15 Bbl	Clinton
45	7	W. W. Arnold No. 2	1948	2936	934- 975	2889-2929		1080.2	+146	-1809		1,150 M 101 Bbl	Clinton
46	7	W. W. Arnold No. 1	1948	2951	946- 970	2921-2946		1090.6	+145	-1830		60 M 35 Bbl	Clinton
47	7	Henrietta Spohn No. 1	1930	2942	-	2902-2924		1078.6		-1823		130 M	Clinton
48	7	P. H. Folk No. 1	1936	2950	925- 973	2902-2931		1064.0	+139	-1838		200 M	Clinton
49	7	F. P. Stimmel No. 1	1935	2995	948- 986	2950-2983		1099.1	+151	-1851		450 M	Clinton
50	7	Harold Ridenour No. 1	1935	2962	903- 938	2910-2938		1046.3	+143	-1864		530 M	Clinton
51	7	F. L. Winegardner No. 1	1935	927	918- 927			1063.7	+146			240 M	Berea
52	8	W. L. Dupler No. 1	1938	2979	910- 948	2916-2958		1034.4	+124	-1882		710 M	Clinton
53	8	L. O. Gilmore No. 1	1936	3002	897-1023	2935-2965		1043.6	+157	-1891		300 M	Berea
54	8	M. J. Harlan No. 1	1938	3004	934- 980	2959-3003		1062.4	+128	-1897		2,920 M	Clinton
55	8	L. O. Gilmore No. 2	1939	3044	966-1004	3002-3042		1097.2	+131	-1905		1,260 M	Clinton
56	8	Michael Emmert No. 1	1937	3000	921- 981	2952-2983		1039.8	+119	-1912		176 M	Clinton
57	8	M. J. Harlan No. 2	1939	3058	945- 998	2995-3021		1028.3	+83	-1967		390 M	Clinton
58	8	B. S. Yarger No. 1	1937	3080	958- 991	3000-3030		1079.1	+121	-1921		Dry	
59	8	Joseph Smith No. 1	1935	3093	975-1078	3028-3063		1108.2	+133	-1920		Dry	
60	8	B. S. Yarger No. 2	1935	3080	990-1070	3047-3075		1116.4	+126	-1931		390 M	Clinton
61	9	B. S. Yarger No. 1-A	1935	3022	906-1080	2965-2992		1039.1	+133	-1926		590 M	Clinton
62	9	Michael Emmert No. 4	1934	3051	964-1000	3017-3037		1072.8	+109	-1944		340 M	Clinton
63	9	R. W. Snider No. 2	1936	3040	932-1037	2975-2997		1053.3	+121	-1922		Dry	
64	9	Michael Emmert No. 2	1931	2984	920- 938	2953-2979		1014.1	+94	-1939		400 M	Clinton
65	9	R. W. Snider No. 1	1935	3010	935- 964	2979-3008		1047.5	+112	-1932		830 M	Clinton
66	9	W. A. Clouse No. 1	1934	3002	910- 950	2977-2981		1014.8	+105	-1962		1,056 M	Clinton
67	9	Michael Emmert No. 3	1933	3015	917- 957 1027-1037	2986-3012		1033.4	+116	-1953		1,650 M	Clinton
68	9	Michael Emmert No. 1	1931	2976	915- 960	2945-2969		998.7	+84	-1946		400 M	Clinton
69	9	J. W. Fullman No. 1	1947	3075	910- 990	3005-3035		939.9	+30	-2065		213 M	Clinton
70	10	Fair Grounds No. 1	1930	3081	-	3021-3051		1031.8		-1989		Dry	
71	10	William Berry No. 1	1921	3109	900- 978	3005-3037		1013.2	+113	-1992		Dry	
72	10	Matilda Deavers No. 1	1932	3160	984-1030	3110-3152		1078.5	+94	-2032		600 M	Clinton
73	11E	L. E. Brown No. 1	1932	3147	990-1030	3126-3147		1075.8	+86	-2050		2,190 M 20 Bbl	Clinton
74	11E	Cecelia Snider No. 1	1932	3111	908- 949	3040-3069		984.5	+76	-2056		50 M 4 Bbl	Clinton
75	11E	L. E. Brown No. 2	1931	3116	930- 965	3074-3110		1014.6	+85	-2059		500 M 170 Bbl	Clinton
76	11E	Pius Snider No. 1	1932	3103	909- 927	3052-3091		985.8	+77	-2066		300 M 138 Bbl	Clinton
77	11E	Homer Caywood No. 1	1931	3102	-	3050-3075		971.0		-2079		50 M 40 Bbl	Clinton
78	11E	Metta Snider No. 1	1932	3094	908- 940	3050-3073		987.2	+79	-2063		2,000 M 42 Bbl	Clinton
79	11E	J. W. Grant No. 2	1934	3144	955- 970	3092-3144		1010.6	+56	-2081		97 Bbl	Clinton

Reading Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level: Berea	Clinton	Medina	Initial Production	Producing Sand
80	12E	A. E. Wilson No. 1	1934	3218	990-1015	3169-3202		1067.7	+78	-2101		455 M	
												10 Bbl	Clinton
81	12E	W. M. Madden No. 5	1944	3211	945- 953	3151-3192		1033.2	+88	-2118		150 M	
												45 Bbl	Clinton
82	12E	W. M. Madden No. 3	1942	3210	958- 965	3160-3204		1039.7	+82	-2120		55 Bbl	Clinton
83	12E	W. M. Madden No. 1	1942	3220	958- 963	3170-3215		1031.9	+74	-2138		148 Bbl	Clinton
84	12E	W. M. Madden No. 4	1943	3156	900- 905	3096-3144		974.7	+75	-2121		243 Bbl	Clinton
85	12E	W. M. Madden No. 6	1944	3278	920- 930	3141-3182		1004.2	+84	-2137		Dry	
86	13E	Webb Porter No. 1	1938	3171	928- 930	3121-3165		992.6	+65	-2128		410 M	Clinton
87	13E	Leonard Noll No. 1	1934	3153	915- 927	3103-3141		980.9	+66	-2122		500 M	Clinton
88	14E	C. V. Snider No. 1	1917	3140	905- 910	3095-3140		981.5	+76	-2114		50 Bbl	Clinton
89	14E	George Scanlon No. 1	1931	3132	915- 965	3078-3106		1024.7	+110	-2053		940 M	Clinton
90	15	J. W. Harlan No. 1	*					1090.7				300 M	Clinton
91	15	George Scanlon No. 2	1932	3167	-	3117-3152		1082.5		-2035		100 M	Clinton
												30 Bbl	Clinton
92	15	Benton Snider No. 2	1930	3114	920- 950	3050-3078		1006.9	+87	-2043		Dry	
93	15	C. E. and W. V. Rusler No. 2	1931	3156	979-1029	3116-3146		1091.4	+112	-2025		960 M	
												20 Bbl	Clinton
94	15	Benton Snider No. 1	1930	3112	980-1010	3086-3110		1077.5	+97	-2009		1,110 M	Clinton
95	15	C. E. and W. V. Rusler No. 1	1930	3104	960- 990	3068-3100		1064.4	+104	-2004		790 M	Clinton
96	15	Harry Lehman No. 1	1931	3043	915- 965	3015-3043		1013.1	+98	-2002		3,250 M	Clinton
97	15	J. M. Flautt No. 1	1930	3122	950-1000	3078-3118		1066.5	+116	-2012		300 M	Clinton
98	15	Sweeney-Kochler No. 1	1931	3000	870- 903	2969-2995		979.0	+109	-1990		2,300 M	Clinton
99	15	Albert Gallin No. 2	1930	3027	900- 948	3000-3020		1007.6	+108	-1992		681 M	Clinton
100	15	Albert Gallin No. 1	1930	2947	835- 900	2915-2943		927.3	+92	-1988		2,104 M	Clinton
101	15	J. M. Flautt No. 2	1933	3031	900- 938	2992-3024		1007.6	+107	-1984		100 M	Clinton
102	16	William Dupler No. 1	*					908.8				393 M	Clinton
103	16	Henry Culp No. 1	1930	2964	800- 820	2920-2960		931.2	+131	-1989		786 M	Clinton
104	16	William Dupler No. 1	1930	2993	880- 910	2971-2993		988.0	+108	-1983		790 M	Clinton
105	18	M. J. Harlan No. 1	1947	2828	825- 865	2798-2825		966.3	+141	-1832		710 M	Clinton
106	18	W. C. LaRue No. 1	1930	2882	860- 895	2815-2841		996.2	+136	-1819		Dry	
107	13W	D. C. Love No. 1	1927	2801	807- 864	2761-2776		923.3	+116	-1838		430 M	Clinton
108	13W	D. C. Love No. 2	1927	2777	795- 835	2738-2767		903.0	+108	-1835		52 Bbl	Clinton
109	13W	D. C. Love No. 3	1929	2775	785- 838	2732-2765		974.0	+189	-1758		6 Bbl	Clinton
110	13W	Samuel Hoover No. 1	1927	2861	884- 914	2808-2830		1043.6	+160	-1764		Dry	
111	14W	D. W. Baker No. 1	1923	2841	895- 935	2806-2831		1084.0	+189	-1722		661 M	Clinton
112	23W	F. G. Love No. 1	1926	2862	-	2644-2703		964.8		-1755		4 Bbl	Clinton
113	19	C. W. Barnes No. 2	1928	2865	855- 890	2799-2842		987.7	+133	-1811		Dry	
114	19	E. W. and L. E. Petty No. 1	1928	2936	909- 939	2892-2929		1032.7	+124	-1859		125 M	
												75 Bbl	Clinton
115	20	S. B. Dittoe No. 10	1929	-	-	3001-3021		1076.4		-1925		100 M	Clinton
116	20	D. O. Petty No. 2	1929	3012	-	2966-3003		1054.4		-1912		50 Bbl	Clinton
117	20	William Griggs No. 1	1929	2980-	-	2942-2976		1028.5		-1914		25 Bbl	Clinton
118	20	O. T. Palmer No. 2	1934	2966	915- 975	2932-2962		1007.4	+92	-1925		15 Bbl	Clinton
119	20	D. O. Petty No. 3	1930	3010	-	2972-3004		1048.1		-1924		50 Bbl	Clinton
120	21E	Vincent Meloy No. 1	1946	2917	805- 900	2867-2895		888.2	+83	-1979		Dry	
121	22	Vernon Henry No. 1	1931	3061	1010-1085	3000-3032		995.0	-15	-2005		Dry	
122	22	George Bishop No. 1	1926	768	756- 768			853.0	+97			600 M	Berea
123	22	Katherine Leibeg No. 1	1926	791	769- 791			862.6	+94			Dry	

Reading Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
124	22	Lewis Leibeg No. 2	1926	778	761- 778			854.8	+94			260 M	Berea
125	22	St. Joseph's Society No. 8	1925	850	815- 840			926.8	+112			Dry	
126	22	F. N. Flowers No. 1	1925	898	883- 898			975.7	+93			67 M	Berea
127	22	F. N. Flowers No. 2	1928	3133	952-1037	3080-3087		1044.8	+93	-2035		Dry	
128	23E	St. Joseph's Society No. 7	1925	3145	975- 977	3083-3131		1015.4	+40	-2068		200 M	Clinton
129	29	A. E. Householder No. 1	1926	2942	-	2904-2936		882.3		-2022		Dry	
130	36W	W. J. Householder No. 5	1918	2771	770- 805	2739-2769		1083.2	+313	-1656		5 Bbl	Clinton
131	31	Hannah Elder No. 2	1918	2910	885- 920	2855-2879		1183.3	+298	-1672		Dry	
132	31	C. D. Stoner No. 4	1918	2836	840- 875	2809-2833		1133.2	+293	-1676		10 Bbl	Clinton
133	31	M. E. Barnes No. 6	-	2898	873- 909	2868-2890		1025.3	+152	-1843		20 Bbl	Clinton
134	31	M. E. Barnes No. 2	1918	2837	820- 855	2800-2832		1108.4	+288	-1692		Dry	
135	31	L. R. Sparrow No. 1	1912	2854	878-	2810-2851		1157.8	+280	-1652		250 Bbl	Clinton
136	31	M. E. Barnes No. 1	-	2863	-	2823-2853		1132.5		-1691		300 Bbl	Clinton
137	31	M. E. Barnes No. 2	1912	2805	-	2784-2805		1054.4		-1730		280 Bbl	Clinton
138	31	M. E. Barnes No. 3	1912	2814	-	2785-2806		1048.5		-1737		401 Bbl	Clinton
139	31	M. E. Barnes No. 5	1912	2860	-	2816-2854		1117.5		-1699		10 Bbl	Clinton
140	34	George Goble No. 2	1920	2981	-	2943-2967		924.6		-2018		Dry	
141	34	George Goble No. 1	1913	3013	-	2983-3007		950.4		-2033		15 Bbl	Clinton
142	34	Albert Sullivan No. 2	1923	3094	-	3050-3076		1002.2		-2048		Dry	
143	34	Albert Sullivan No. 1	-	2988	-	2955-2983		904.5		-2051		10 Bbl	Clinton
144	34	Roy Geary No. 2	-	3078	-	3030-3053		968.9		-2061		3 Bbl	Clinton
145	35E	Emmett Reichley No. 1	1920	3245	-	3200-3237		1125.3		-2075		3 Bbl	Clinton
146	35E	William Green No. 1	1925	3293	1085-1095	3259-3293		1142.5	+57	-2117		Dry	
147	36E	Homer Wendall No. 2	1927	3187	-	3148-3187		996.9		-2181		260 M	Clinton
148	36E	George Fulk No. 1	1929	3208	-	3164-3196		984.9		-2179		500 M	Clinton
					SALT LICK TOWNSHIP								
1	4	Groff-Watkins No. 1	-	3284	895-1020	3223-3279		832.9	-62	-2390		Dry	
2	7	M. Miller No. 1	1946	3240	840- 862	3107-3161		836.2	-4	-2271		Dry	
3	8	H. H. Irwin No. 1	-	3165	835- 850	3116-3148		797.0	-38	-2319		Dry	
4	10	Sunday Creek Coal No. 89	1930	1164	1135-1156			1018.3	-117			Dry	
5	10	G. M. Jones Co. No. 3	1929	1103	1099-1103			976.8	-122			1,108 M	Berea
6	10	Sunday Creek Coal No. 87	1930	981	977- 981			858.9	-118			1,178 M	Berea
7	11	G. M. Jones Co. No. 1	1929	947	944- 947			824.9	-119			1,247 M	Berea
8	11	G. M. Jones Co. No. 2	1929	1053	1049-1053			926.1	-123			960 M	Berea
9	11	G. M. Jones Co. No. 4	1930	1075	1042-1049			898.3	-144			Dry	
10	14	Sunday Creek Coal No. 88	1930	3655	1124-1141	3540-3573		992.2	-132	-2548		Dry	
11	18	Ben Ricketts No. 1	1940	3200	827- 840	3082-3110		768.6	-58	-2313		100 M 2 Bbl	Clinton
12	21	New York Coal No. 12	*					988.5				65 Bbl	Clinton
13	22	B. Morgan No. 1 or 2?	*					998.6				880 M	Clinton
14	23	Agnes Oil Co. No. 3	-	3510	-	3467-3507		885.0		-2582		Dry	
15	23	Sunday Creek Coal No. 1	1921	3439	-	3393-3422		813.0		-2580		100 Bbl	Clinton
16	24	Homer Tharp No. 1	1948	979	960- 979			777.7	-182			620 M	Berea
17	24	Hemlock Coal Co. No. 25	1948	979	967- 979			778.6	-188			350 M	Berea

THORN TOWNSHIP

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
1	1	James F. Walser No. 1	1920	2687	685- 697	2641-2660		886.8	+202	-1754		Dry	
2	2	Philip Starkey No. 1	1918	2646	665- 682	2557-2577		873.0	+208	-1684		Dry	
3	3	Charles Boring No. 1	1918	2563	-	2528-2540		921.2		-1607		712 M	Clinton
						2546-2551							
4	3	William Neel No. 1	1917	2540	644- 659	2510-2538		903.6	+260	-1606		2,800 M	Clinton
5	3	John Yost No. 1	1917	2533	633- 653	2503-2527		899.9	+267	-1603		712 M	Clinton
6	3	William Neel No. 2	1917	2507	632- 644	2481-2505		899.9	+268	-1581		4,000 M	Clinton
7	4	W. A. Boring No. 2	1917	2526	624- 639	2481-2496		897.9	+274	-1583		50 M	Clinton
8	4	W. A. Boring No. 1	1917	2513	-	2473-2478		893.2		-1580		116 M	Clinton
9	4	J. W. Conn No. 1	1918	2522	-	2487-2509		915.3		-1572		528 M	Clinton
10	4	W. W. and A. T. Wehrle No. 5	1918	2495	648- 668	2470-2488		908.9	+261	-1561		350 M	Clinton
11	4	Ben Alspach No. 2	1918	2488	627- 652	2465-2485		901.2	+274	-1564		512 M	Clinton
12	4	Ben Alspach No. 1-A	1917	2486	640- 660	2463-2481		911.1	+271	-1552		940 M	Clinton
13	4	W. W. and A. T. Wehrle No. 4	1918	2468	615- 635	2431-2451		894.1	+279	-1537		200 M	Clinton
14	5	Emma Swick No. 1	-	2463	-	2445-2461		902.7		-1542		2,763 M	Clinton
15	5	Emma Swick No. 2	-	2462	-	2437-2457		906.6		-1530		2,251 M	Clinton
16	5	S. A. Shell No. 1	1918	2469	608- 631	2425-2450		898.5	+290	-1527		213 M	Clinton
17	5	Emma Swick No. 1	*					905.5				Dry	
18	5	D. S. Foster No. 1	1910	2424	-	2401-2406		905.0		-1496		300 M	Clinton
19	6	H. G. Roberts No. 1-A	1915	2401	600- 627	2374-2398		919.7	+320	-1454		1,117 M	Clinton
20	6	H. G. Roberts No. 2	1910	2380	-	2341-2362		894.5		-1447		Dry	
21	6	H. G. Roberts No. 1	1910	2351	-	2336-2351		899.3		-1437		3,000 M	Clinton
22	6	H. G. Roberts No. 3	1912	2385	-	2371-2379		913.6		-1457		353 M	Clinton
23	7	Sylva Zartman No. 1	1915	2417	613- 639	2395-2415		940.2	+327	-1455		1,000 M	Clinton
24	7	E. O. Keller No. 2	*					979.8					
25	7	M. O. Sevitts No. 1	1918	2431	633- 656	2400-2410		918.6	+286	-1481		130 M	Clinton
26	7	Nancy Lynn No. 1	1917	2428	635- 660	2407-2422		969.8	+335	-1437		1,785 M	Clinton
27	7	Sarah Mechling No. 1	1918	2484	666- 686	2433-2444		948.1	+282	-1485		Dry	
28	8	Sam Alspach No. 1	1918	2483	-	2435-2483		943.7		-1491		350 M	Clinton
29	8	G. B. Stevens No. 1	1918	2474	640- 660	2452-2469		901.5	+261	-1551		150 M	Clinton
30	8	Anna Rarick No. 1	-	2468	-	2435-2451		914.3		-1521		106 M	Clinton
31	8	Chas. and Sarah Hetrick No. 2	1918	2483	636- 666	2452-2467		911.6	+276	-1540		710 M	Clinton
32	8	Chas. and Sarah Hetrick No. 1	1918	2475	628- 657	2450-2470		912.2	+284	-1538		3,250 M	Clinton
33	9	Edna Bope No. 1	1918	2522	653- 680	2480-2493		927.3	+274	-1553		661 M	Clinton
						2495-2510							
34	9	Oscar Witmer No. 1	-	2572	701- 717	2520-2544		969.1	+268	-1551		Dry	
35	9	J. K. Faller No. 1	1918	2490	629- 650	2457-2477		904.1	+275	-1553		510 M	Clinton
36	10	Charles Packer No. 1	1941	2608	650- 668	2548-2580		897.3	+247	-1651		Dry	
37	11	Frank Cooperrider No. 1	1943	2719	740- 772	2669-2697		974.0	+234	-1695		Dry	
38	12	S. B. Yost No. 2	1942	2759	770- 790	2707-2738		973.6	+204	-1733		Dry	
39	12	Melvin Starkey No. 1	1917	2825	-	2702-2722		917.0		-1785		Dry	
40	13	E. R. Foucht No. 3	1944	2854	817- 847	2785-2796		1041.8	+225	-1743		7 Bbl	Clinton
41	13	E. R. Foucht No. 1	1943	2925	803- 835	2784-2821		1033.3	+230	-1751		400 M	Newburg
42	13	E. R. Foucht No. 2	1945	3009	902- 930	2898-2915		1114.3	+212	-1784		Dry	
43	13	J. H. Long No. 4	1946	2800	795- 820	2748-2790		1009.5	+214	-1739		55 Bbl	Clinton
44	15	George Clum No. 1	*					1086.2				Gas	Clinton
45	16	W. R. Clum No. 1	*					1044.2				Dry	
46	17	Perry A. Grove No. 1	1919	2563	692- 696	2492-2505		973.1	+281	-1519		Dry	
47	19	Aaron Foster No. 1	1919	2549	712- 730	2503-2511		1041.5	+329	-1462		Dry	

Thorn Township (Continued)

Elevation and Well Data

M = Thousand cubic feet of gas; Bbl = Barrel, 42 gallon Standard; * = No log available; - = Data not available

Map Number	Section Number	Farm Name and Well Number	Date Completed	Total Depth	Depth Berea	Depth Clinton	Depth Medina	Surface Elevation	Elevation Top of Sand Above or Below Sea Level Berea	Clinton	Medina	Initial Production	Producing Sand
48	19	Michael Miller No. 1	1919	2572	735- 755	2540-2552		1034.9	+300	-1505		250 M	Clinton
49	19	Lenora Hite No. 1	1918	2559	695- 725	2499-2505		980.7	+286	-1518		50 M	Clinton
50	20	Mariah Kokensperger No. 1	1919	2520	689- 712	2491-2507		980.9	+292	-1510		507 M	Clinton
51	20	B. G. Foster No. 1	1919	2608	715- 739	2540-2565		1006.2	+291	-1534		Dry	
52	21	Murray Lyle No. 1	1945	2774	753- 783	2608-2635		1024.8	+272	-1583		Dry	
53	21	Faye Boring No. 1	1941	2785	845- 880	2722-2748		1104.3	+259	-1618		Dry	
54	22	William Cooper No. 1	-	2786	-	2726-2756		1113.8		-1612		Dry	
55	22	Elmer Sevitts No. 1	1942	2792	832- 868	2746-2764		1086.7	+255	-1659		Dry	
56	23	Charles Helser No. 1	1943	2810	799- 829	2753-2776		1022.4	+223	-1731		Dry	
57	24	Charles Helser No. 1	1942	2794	738- 766	2738-2766		959.5	+221	-1779		Dry	
58	24	I. Brown No. 2	1942	3055	925- 953	2901-2931		1114.0	+189	-1787		Dry	
59	24	Charles Baker No. 1	1918	2866	812- 835	2804-2832		996.0	+184	-1808		Dry	
60	25	J. H. Dupler No. 1	*					1110.1				Dry	
61	25	Ray Helser No. 1	1913	2900	-	2814-2838		1026.2		-1788		Dry	
62	26	Oscar Humberger No. 1	1948	2842	815- 841	2717-2741		1034.8	+220	-1682		Dry	
63	26	Mary and Ola King No. 1	1939	2781	840- 870	2749-2764		1075.6	+236	-1673		Dry	
64	27	Homer A. Beard No. 1	1944	807	805- 807			1053.5	+248			188 M	Berea
65	27	M. G. Gettys No. 1	1942	804	800- 804			1046.4	+246			187 M	Berea
66	27	Ray and Mary Henderson No. 1	1943	2770	832- 862	2726-2753		1068.7	+237	-1657		Dry	
67	27	Lloyd Winegardner No. 1	1941	2765	840- 870	2728-2756		1091.6	+252	-1636		50 Bbl	Clinton
68	27	R. J. Winegardner No. 1	1942	2771	844- 875	2735-2763		1098.0	+254	-1637		55 Bbl	Clinton
69	27	H. L. Winegardner No. 1	1942	2813	850- 880	2733-2757		1098.4	+248	-1635		Dry	
70	28	Edward B. Hanby No. 1	1940	2714	835- 870	2698-2713		1086.6	+252	-1611		1,260 M	Clinton
71	28	Dora Hanby No. 1	1940	2693	820- 840	2668-2692		1074.2	+254	-1594		2,270 M	Clinton
72	28	E. F. Winegardner No. 1	1940	2741	805- 830	2658-2683		1072.2	+267	-1586		Dry	
73	29	Lester Jourdon No. 1	1940	2601	760- 788	2573-2601		1041.0	+281	-1532		Dry	
74	31	Charles Love No. 1	1945	2624	771- 800	2554-2573		1119.0	+348	-1435		Dry	
75	33	A. L. Rousculp No. 1	1924	2774	845- 875	2694-2720		1089.9	+245	-1604		Dry	
76	34	Earl Morrow No. 1	1944	2771	833- 865	2715-2740		1072.1	+239	-1643		Dry	
77	34	I. G. Bashore No. 1	1941	2204	802- 832			1045.3	+243			390 M	Newburg
78	34	I. G. Bashore No. 2	1944	796	792- 796			1036.8	+245			100 M	Berea
79	34	Charles Love No. 1	1941	2747	812- 842	2697-2729		1039.9	+228	-1657		26 M	Clinton
80	35	W. R. Williams No. 1	1942	2727	766- 805	2715-2726		1002.0	+236	-1713		641 M	Clinton
81	35	Freed-Gordon No. 1	1942	2787	810- 846	2748-2777		1024.7	+215	-1723		75 M	Clinton
82	35	H. L. Fisher No. 1	1935	2835	825- 857	2769-2789		1032.2	+207	-1737		Dry	
83	35	A. G. Winegardner No. 1	1935	2910	820- 851	2762-2782		1017.0	+197	-1745		Dry	
84	36	Raymond Helser No. 1	1935	2842	824- 858	2763-2789		1017.5	+193	-1746		Dry	
85	36	Raymond Helser No. 2	1935	2812	843- 868	2787-2812		1038.0	+195	-1749		261 M	Clinton
86	36	Homer Beard No. 1	1934	2777	803- 839	2765-2777		993.0	+190	-1772		880 M	Clinton
87	36	Homer Beard No. 2	1936	2889	895- 929	2854-2881		1062.7	+168	-1791		Gas	Clinton
88	36	Grover Lonas No. 1	1935	2839	830- 865	2805-2832		994.9	+165	-1810		Gas	Clinton
89	36	G. F. Shrider No. 2	1936	2913	894- 950	2875-2910		1045.8	+152	-1829		580 M	Clinton