MICHIGAN'S OIL AND GAS FIELDS, 1967

ANNUAL STATISTICAL SUMMARY 8

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Published by Authority of State of Michigan CL '48 s.321.6

Available from Publications Room, Department of Conservation, Lansing, Michigan 48926
Purchase Price: $1.00 plus tax

Also deposited in public libraries

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ACKNOWLEDGMENTS

This publication bring together under one cover many related oil and gas field statistical data not usually found in any other industry or government publication. Oil and gas field data of historical and general interest are included and thus preserved herein for future reference. The summary is, therefore, a source of information most useful in evaluating Michigan's past history and future prospects as an oil and gas province. Furthermore, the gathering, maintenance, and compilation of the many statistical data contained in this summary reflects, in part, the varied functions of the Oil and Gas Section of the Survey.

The contents of this publication result from the joint efforts of the Survey's Oil and Gas Section under the supervision of L. W. Price, geologist in charge. Oil and Gas Section unit supervisors who directed staff members in the gathering and maintenance of the basic records and summarized them for compilation and manuscript preparation are:

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Cover photo by H. O. Sorensen, geologist, Economic Geology Section. Photo shows exposure of Niagaran age, Burnt Bluff Group, dolomites near the village of Drummond, Drummond Island, Chippewa County, Michigan. These Middle Silurian rocks crop out in an arcuate band through the Northern Peninsula and are important sources of limestone and dolomite. Further south in the basin, Niagaran rocks (generally reefs) are an important source of oil and gas.

Compiler: G. D. Ells, Petroleum Geology

Lansing, Michigan
May, 1968

MICHIGAN'S OIL AND GAS FIELDS, 1967

Introduction

Over a span of years, oil and gas field activities in a petroleum province fluctuate. The relative strength of the activities for a given year as compared with prior years can be measured by such factors as the number and size of newly discovered fields and pools, the amount of exploratory and development drilling, oil and gas production, and others. In this issue, various facets of Michigan's 1967 oil and gas field activities are cited and related to the prior year.

The kinds of data listed herein are derived mainly from records received and maintained by the Geological Survey Division. Certain data such as the number of exploratory and development wells drilled, number of discoveries, well classifications, and so forth, may differ from statistical data reported by regional or national trade journals, or by petroleum industry reporting services. Differences can be mainly attributed to methods of gathering and reporting well or drilling data. The types of data reported in this summary have been treated uniformly from year to year. The data reflect as near as possible the actual activities and developments that should be credited to the past year, 1967.

Comparison of 1967 statistics with those of 1966 show no large differences or declines in most kinds of oil and gas field activities, although there is considerable general decline if compared with 1965. The most active regions of new field exploration and field development drilling were St. Clair and Macomb Counties and the area along the Albion-Pulaski-Scipio oil field trend. In general, drilling and well completions were distributed, geographically, about the same as in 1966. New field discoveries were at about the same level as last year. Oil and gas production declined a small percentage. The total value of these products amounted to $47,820,112 as compared with $49,739,074 in 1966. Domestic LPG production was valued at about $3,793,194.

Part 1 of this publication summarizes significant information on oil and gas field activities, and related work of the Oil and Gas Section of the Geological Survey during 1967. Part 2, the green pages, contains specific information on Michigan's oil and gas fields for 1967. Part 3 contains cumulative records of importance to the petroleum industry.

* * * DRILLING PERMITS * * *

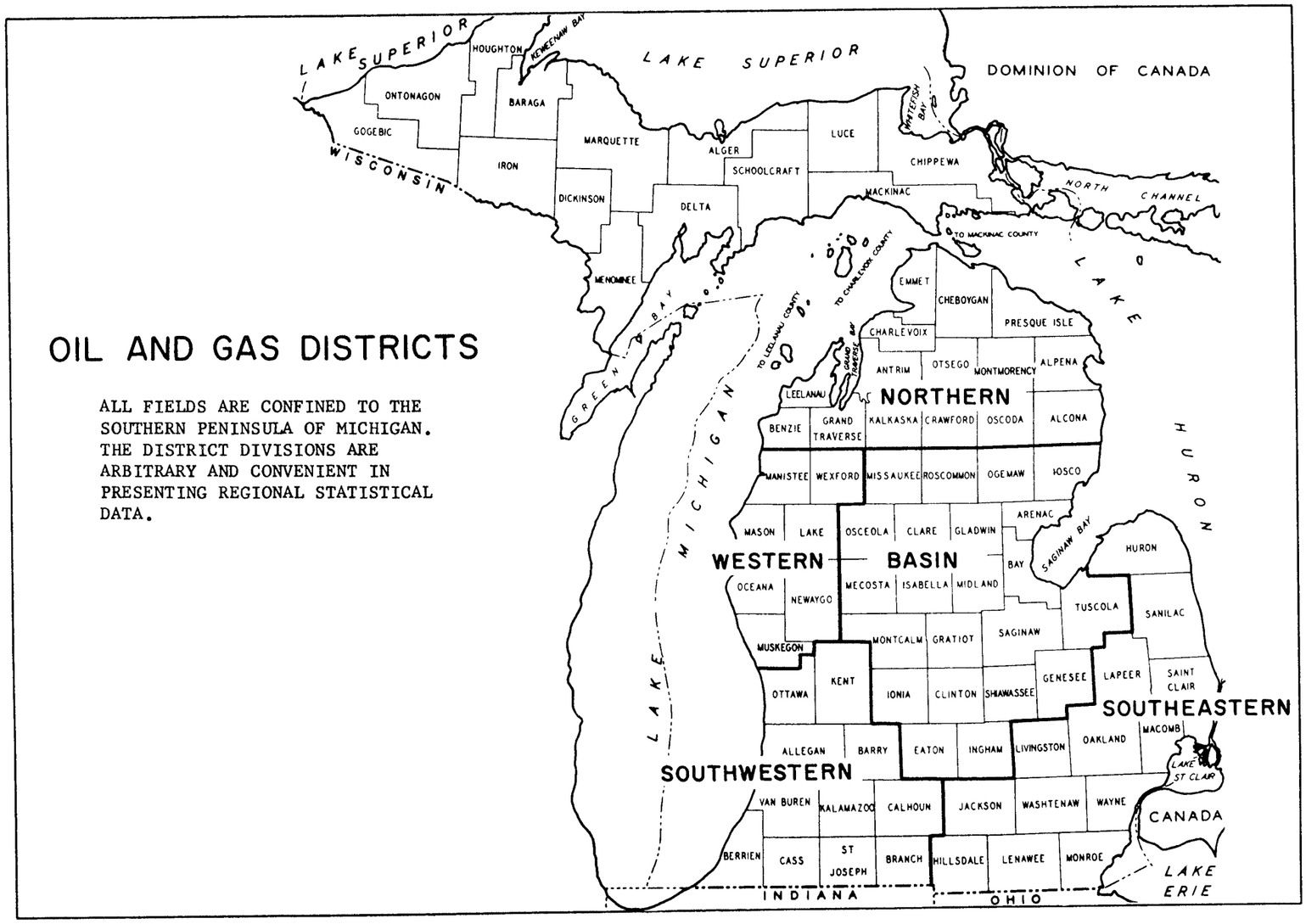
The number of permits issued to drill new holes has shown a steady decline over the past several years. Again, fewer permits for oil or gas tests, gas storage reservoir wells, and other types drilled under permit, were issued in 1967 by the Regulatory Control Unit. Part of the decrease is probably due to wider well spacing and the small areal extent of some 1966 and 1967 new field discoveries.

Of the 405 oil and gas permits issued, 24 were for gas storage reservoir wells, 198 were for field development wells, and 183 were for exploratory tests. Included within the development and exploratory well permit totals are 8 permits issued to re-open and test wells previously drilled under other permit numbers. Also, included are 4 permits which were cancelled and terminated due to failure of operators to commence drilling operations within six months from the issue date of the permit.

The geographic distribution by district of permits issued through a 3-year period is shown as follows.

DRILLING PERMITS BY DISTRICT

DISTRICT	Permits Issued		
	1965	1966	1967
Basin	117	79	91
Northern	7	11	11
Southeastern	247	222	178
Southwestern	63	43	72
Western	60	75	53
Totals	494	430	405



The higher figures for the southeastern district reflects the exploration and development activity in the St. Clair-Macomb County area, the area of the Albion-Pulaski-Scipio oil field trend, and gas storage well development in the Howell gas storage field. The fluctuation in permits for gas storage and other types of service wells are shown as follows:

Service Wells	1965	1966	1967
Gas Storage			24
Observation,			
Brine disposal, etc.			2
	106	7	26

Not included in any of the above figures, were 17 deepening permits. No geological test permits were issued in 1967. Table 2, page 12, shows the distribution of drilling permits by county.

* * * WELL COMPLETIONS * * *

There were 393 new hole exploratory and development well completions. The figure does not include gas storage reservoir wells, old wells drilled to deeper oil or gas pools, reworks, or others not directly related to exploratory or field development drilling. About one-third of the exploratory wells, directed toward finding new Silurian reefs, were drilled in St. Clair and Macomb Counties. Nearly one-quarter of the field development well completions are also credited to these counties. About one-fifth of all development wells were drilled in the Calhoun County part of the Albion-Pulaski-Scipio oil field trend. More details on well completion results, by county, are shown on Table 2. Exploratory and development well completion results covering a 3-year period are summarized as follows:

EXPLORATORY AND DEVELOPMENT WELL COMPLETIONS

Year	Exploratory Wells			Development Wells			Totals
	Oil	Gas	Dry	Oil	Gas	Dry	
1965	6	6	189	47	28	102	378
1966	8	3	175	49	42	111	388
1967	7	2	171	69	38	106	393

The fluctuation of drilled footage, including deepenings, over a 3-year period is as follows:

Footage Well Class	Amount of Drilled Footage 1965	1966	1967
Exploratory	602,682	560,941	539,400
Development	587,457	608,386	686,672
Service	254,403	33,370	88,434
Total	1,444,542	1,202,697	1,314,506

The number and class of well completions according to oil and gas district, and by month of the year, is tabulated on Table 3. Cumulative well completions by county are shown on Table 25, page 64.

* * * DISCOVERY WELLS * * *

State-wide, the discovery-to-dry hole ratio for new field wildcat wells was 1:20 as compared with 1:17 in 1966. The discovery ratio in St. Clair and Macomb Counties, where about one-third of the exploratory wells were drilled, was also 1:20 although all discoveries in this area were made in St. Clair County.

Completion details on all discovery wells credited to 1967 are listed on the next page. All reached total depth during the year, and most were put on production. None of the new oil discoveries appears to have an oil or gas yield greater than a Class E field. The new Columbus West gas field is tentatively designated as Class C, and the new Swan Creek gas field as Class E. These classifications are based on potential yields as defined by the American Association of Petroleum Geologists and are as follows:

Class A - Over 50 million barrels oil or 300 BCF gas
Class B - 25 to 50 million barrels oil or 150-300 BCF gas
Class C - 10 to 25 million barrels oil or 60-150 BCF gas
Class D - 1 to 10 million barrels oil or 6-60 BCF gas
Class E - 1 million barrels or less oil or less than 6 BCF gas
Class F - Abandoned as non-profitable

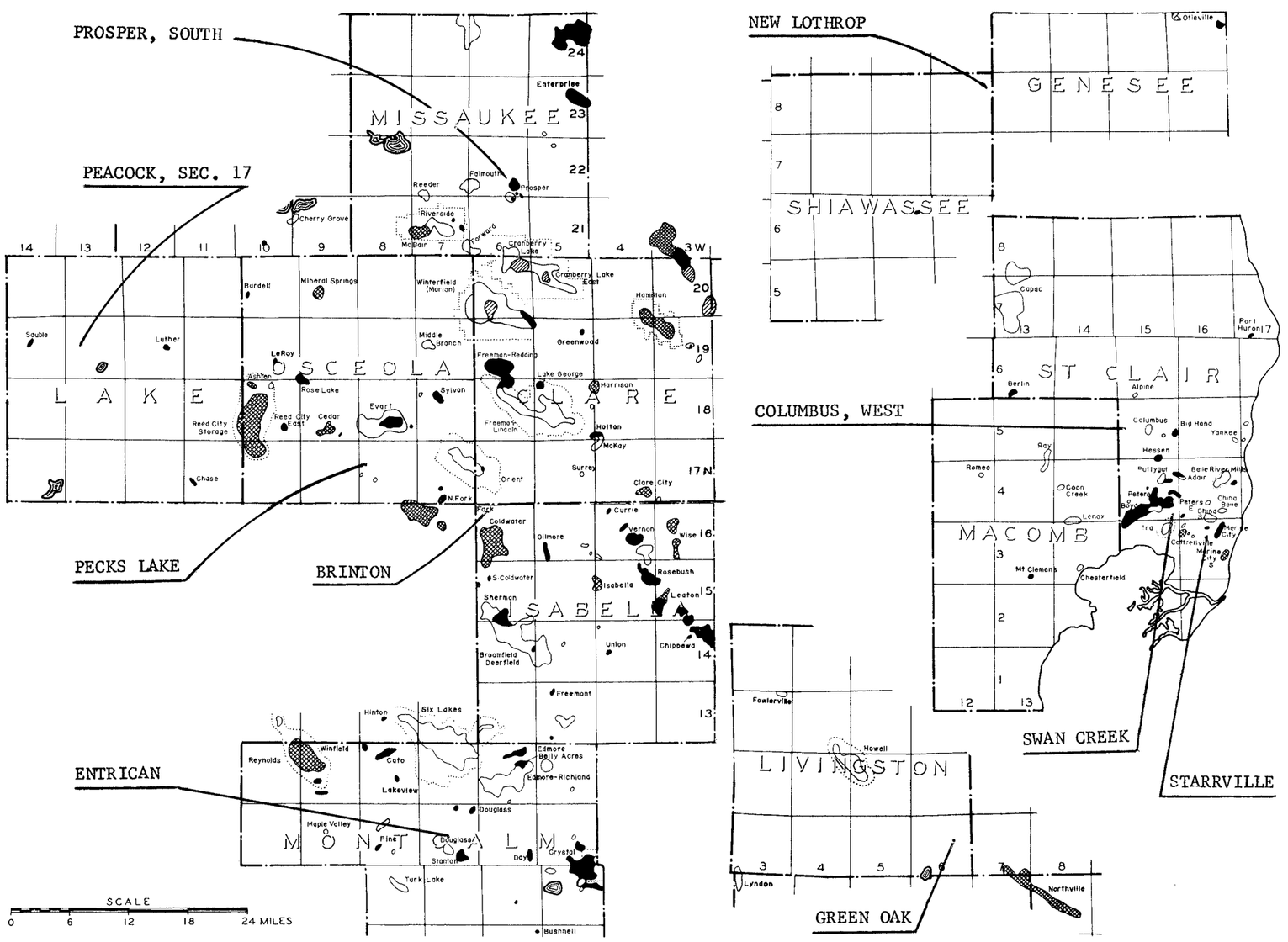
1967 DISCOVERY WELLS

Field	County and Location	Operator and Lease	Permit Number	Comp. Date	Depth to Pay	Total Depth	Initial Production n=(N)IP t=(T)IP BOPD	MCFGPD	Prod. Form.	Basis for Loc.
NEW FIELDS										
Brinton	Isabella 5-16N-6W	The Taggart Co. A. J. Little No. 1	27025	11-13	4082	4085	P & F60^{t}		Dd.	Sub.
Columbus, West	St. Clair 18-5N-15E	Sun Oil Co. Greenia Bros. Farms No. 2	26746	2-3	3183	3370		8400^{t}	Niag.	Grav.
Green Oak	Livingston 14-1N-6E	Texaco, Inc. P. & F. Kish No. 1	26999	9-22	?	5559	P8-9^{t}		Trent. B. R.	Grav.
New Lothrop	Shiawassee 12-8N-4E	Harris Oil Co. Carl Wendling No. 1	26862	6-8	1630	1646	P8^{t}		Berea	Sub.
Peacock, Sec. 17	Lake 17-19N-13W	Cook Bros. & Con. Pwr. Co. State-Peacock No. 3	27095	12-10	2292	2294	P50^{t}		Trav.	Sub.
Pecks Lake	Osceola 18-17N-8W	J. R. Barwick (McClure Oil) Clark etal No. 1	26661	7-13	3866	3854	F80^{n}		Dd.	Sub.
Prosper, South	Missaukee 36-22N-6W	Woods Oil Co. Cavanagh No. 1	26961	10-8	3796	3807	F75-80^{n}		Dd.	Sub.
Starrville	St. Clair 9-3N-16E	McClure Oil Co. Labuhn-Markel No. 1	26931	7-15	2336	2378	F50^{t}		Niag.	Grav.
Swan Creek	St. Clair 36-4N-15E	Con. Pwr. Co. & Joint Vent. Wissman-Draves No. 3	26984	8-26	2282?	2507		1044^{t}	Niag.	Sub.
NEW POOL DISCOVERY										
Entrican	Montcalm 21-11N-7W	The MOCO Elsie Mayer No. 1	26753	2-16	3312	3336	P7^{t}		Dd.	Sub.

NOTE: t=(T)IP refers to initial potential after acid, sand-fracture, or a combination of well stimulation methods.

n=(N)IP refers to natural initial potential or production.

EXPLANATION



Most new fields were found in established producing regions; none open large, undrilled areas for exploration. The number of oil or gas wells completed in the new fields during 1967, and the cumulative production for the field, can be found in the oil and gas field tables on the green pages.

The New Lothrop field, northeastern Shiawassee County, is the first Berea Sandstone oil pool found in over a decade. Three wells were completed, one to a 20-acre drilling unit, by year's end. Though Berea sandstones have not been prime exploration objectives for many years, this small field should promote more exploration in sparsely drilled Shiawassee and adjacent Genesee County.

The new Peacock field in Lake County on the western side of the basin points up the probabilities of more Traverse limestone pools, and probably deeper production, yet to be found in this sparsely drilled county. Lake County has an area of 577 square miles and a drilled well density of about 1:4 square miles. The few fields which have been found are small and widely scattered, but offer incentive for further exploration.

Pecks Lake, Osceola County, was the first Dundee Limestone discovery of the year but little development drilling was done, probably because of the unsure performance of the discovery well. A well spacing pattern and a 40-acre drilling unit order was established for this field.

Prosper, South was deemed a new field rather than an extension of the original Prosper field which has made nearly 1,700,000 barrels of oil since its discovery in 1942. A well spacing pattern and 40-acre drilling unit was established. Wells are prorated to a 75 BOPD allowable. Three oil wells were completed by year's end and prospects for further development are favorable.

The Brinton field, about 4 miles north of the Coldwater field, Isabella County, raises prospects of another sizeable Dundee oil pool. Though one dry hole and no additional oil wells were completed during 1967, not enough wells have been drilled in the vicinity of the Brinton discovery to give an indication of possible field extent. The Coldwater field to the south covers about 3200 acres and has produced over 21 million barrels of oil since discovery in 1944.

Though 43 exploratory dry holes were drilled in St. Clair County, four new Niagaran reef fields were found. However, only three are credited as 1967 discoveries. The discovery well for the fourth reef field, called Collin, did not reach total depth and final completion during 1967 and is thus not included in 1967 statistics.

The first new reef field discovery of the year, Columbus West, appears to be one of the best finds in recent years. Most of the reef was outlined during the year by the drilling and completion of 12 gas wells and 4 dry holes. Five productive reefs have now been found in Columbus Township. The prospects for additional reef discoveries in this township is greatly enhanced by the size and potential productivity of the new gas field.

The Starrville reef lies about a mile to the west of the southern end of the Marine City field, one of the first (1955) Niagaran reef discoveries in St. Clair County. Two dry development wells were completed during the year, but no additional oil or gas wells. The discovery well produced over 6,000 barrels of oil from discovery date through October 1967. Prospects of a reef-trend paralleling the Marine City field are favorable.

The Swan Creek field appears to be a small pinnacle reef located near the Ira gas storage field. This small semi-isolated reef appears to have been outlined by development drilling. No further producible wells were completed during the year.

Green Oak, the only Trenton-Black River discovery of the year, is located on a part of the Howell anticlinal trend. The well was completed as a small oil well pumping 8 to 10 BOPD, but by year's end production was reported to be down to about 5 BOPD. The Northville, Howell gas storage field, and the Fowlerville Niagaran gas field are located on the Howell anticlinal complex. The Green Oak well, though small, should encourage further exploration of these large faulted, structural features.

Devonian rocks continue to be important drilling objectives from year to year. Devonian formations have produced most of Michigan's oil, and Mississippian rocks have produced most of the gas. An analysis of discoveries through a 3-year period is shown in chart form. New pool discoveries are not included in the chart.

ANALYSIS OF DISCOVERY WELLS BY GEOLOGIC SYSTEM

System	Formation or Pay	Number of Discoveries		
		1965	1966	1967
Pennsylvanian		-	-	-
Mississippian	"Michigan Stray Ss."	1	1	-
	"Berea"	-	-	1
Devonian	Antrim Shale	1	-	-
	"Traverse Lime"	5	3	1
	Dundee	1	1	3
	"Reed City"	1	3	-
	Detroit River "Sour Zone"	-	-	-
	Richfield	-	-	-
Silurian	Salina A-1 or A-2	-	-	-
	Niagaran reef*	4	2	3
Ordovician	Trenton-Black River	-	-	1
	Prairie du Chien	-	-	-
Cambrian	(Gas shows reported)	-	-	-

*Most reefs also have associated Salina A-1 oil or gas pays.

* * * OIL AND GAS PRODUCTION * * *

No large oil reserves were found and developed during 1967, thus oil production continued to decline a small percentage. Oil production amounted to 13,664,185 barrels as compared with 14,273,099 barrels produced in 1966. Oil production by geologic formation is shown graphically on page 56 Part 3.

Gas production amounted to about 33,241,640 Mcf as compared to 34,120,013 Mcf in 1966.

LPG production stripped from Michigan gas amounted to 1,806,320 barrels. The bulk of this production came from the Albion-Scipio, Belle River Mills, Boyd, and Reed City gas plants. An additional 767,305 barrels were stripped from gas imported into Michigan via pipeline.

Oil and gas production by individual fields or pools is found in Part 2 on the oil and gas field tables. Production by year, geologic formation, and county is shown in the tables in Part 3. Production by month and by geographic district in 1967 is shown on the following charts. See Table 1 for oil and gas production by county in 1967.

OIL AND GAS PRODUCTION BY MONTH

Month	Production	
	Barrels Oil	MCF Gas
January	1,154,294	3,247,588
February	1,075,568	3,119,834
March	1,183,978	3,152,490
April	1,115,542	2,619,823
May	1,182,262	2,414,101
June	1,119,707	2,133,503
July	1,140,405	2,728,532
August	1,178,572	2,775,451
September	1,120,130	2,421,877
October	1,154,013	2,687,300
November	1,118,597	2,794,179
December	1,121,117	3,146,962
Totals	13,664,185	33,241,640

OIL AND GAS PRODUCTION BY DISTRICT

District	Production	
	Barrels Oil	MCF Gas
Basin	4,254,529	2,482,992
Northern	35,608	6,951
Southeastern	6,339,441	29,990,566
Southwestern	2,775,972	408,304
Western	258,635	352,827
Totals	13,664,185	33,241,640

TABLE 1 -- OIL AND GAS PRODUCTION BY COUNTY IN 1967

County	Barrels Oil	MCF Gas	County	Barrels Oil	MCF Gas
Allegan	242,343	236,528	Mason	88,044	—
Arenac	273,182	—	Mecosta	293,217	100,825
Barry	11,007	—	Midland	217,861	—
Bay	321,565	—	Missaukee	447,153	485,868
Berrien	—	—	Monroe	6,056	—
Calhoun	2,314,159	4,347,031	Montcalm	172,769	5,241
Cass	3,081	—	Muskegon	70,511	—
Clare	586,913	167,773	Newaygo	20,723	—
Crawford	162,343	450,656	Oakland	628	—
Genesee	2,219	—	Oceana	74,348	—
Gladwin	352,318	—	Ogemaw	298,341	613,960
Gratiot	23,647	1,907	Osceola	508,538	197,752
Hillsdale	4,046,027	4,654,604	Oscoda	1,702	—
Huron	2,665	—	Otsego	—	6,951
Ionia	—	—	Ottawa	107,235	153,926
Isabella	250,685	3,839	Roscommon	169,252	455,171
Jackson	1,602,707	2,374,659	Saginaw	22,626	—
Kalkaska	33,906	—	Shiawassee	3,650	—
Kent	87,642	17,850	St. Clair	641,555	14,984,222
Lake	5,009	—	Tuscola	74,384	—
Lapeer	64,356	24,272	Van Buren	10,505	—
Lenawee	6,358	63,026	Washtenaw	24,589	203,952
Livingston	699	16,488	Wayne	15,214	479,425
Macomb	2,453	2,842,887	Wexford		352,827

See Table 23, page 62, for cumulative figures.

Totals: 13,664,185 33,241,640

* * * OIL AND GAS VALUATION * * *

The average price paid at the wellhead for Michigan crude was $2.89 per barrel. The value of this mineral resource amounted to about $39,455,290 as compared with $40,912,946 in 1966. The average price of Michigan gas sold at the wellhead was $.26 per MCF. The value of this product amounted to about $8,364,822 as compared to $8,773,844 in 1966. The value of LPG production from Michigan gas amounted to about $3,793,194. In addition, LPG's stripped from imported gas was valued at about $1,611,336.

* * * OIL AND GAS IMPORTS AND EXPORTS * * *

Canadian crude oil imports via pipeline from western Canada oil fields amounted to 8,407,569 barrels as compared with imports of 6,510,132 barrels in 1966. Domestic imports via pipeline from western and mid-western states amounted to 28,853,856 barrels, a decrease from the 32,572,587 barrels imported in 1966. Total imports amounted to 37,250,765 barrels as compared with 39,082,719 barrels imported in 1966.

Crude oil exported to northern Indiana (Ft. Wayne) and Ohio (Cleveland) refineries amounted to 149,463 barrels, a sizeable decrease from the 378,963 barrels reported in 1966.

Gas imports to Michigan markets and gas storage fields via pipelines, primarily from Texas, Louisiana, Oklahoma, and Kansas fields, increased during 1967. Compilations by the Gas Section, Michigan Public Service Commission, show gas imports of 661,345,209 Mcf as compared with 599,174,318 Mcf in 1966. Gas imports by month are:

PIPELINE GAS IMPORTS (in Mcf)

January	41,700,526
February	34,877,708
March	48,719,131
April	58,464,228
May	63,325,866
June	64,900,589
July	64,267,810
August	69,043,328
September	63,935,094
October	59,768,971
November	46,377,847
December	45,964,111
	661,345,209

* * * DEEP TESTS * * *

About 22% of exploratory wells bottomed-out in Devonian Traverse limestone, 10% in the Devonian Dundee limestone, 7% in the Reed City zone of Devonian age, 35% in Silurian Niagaran-Clinton age rocks, and about 17% in rocks of Ordovician Trenton-Black River age or older. The balance reached total depth in rocks younger than Devonian in age. No precambrian or basement tests were drilled during the year.

No firm criteria are established for designating exploratory wells as important deep tests. Actual drilled depth is not the determining factor. Selections are most often based on the geologic age of the strata penetrated in reference to the location of the test within the basin, and the relative abundancy of similar tests in the area. Deeper pool tests in designated fields may also qualify as deep tests. Those selected for 1967 are listed on page 15.

* * * OIL FIELD BRINE PRODUCTION * * *

There were 16 fields producing brine in excess of 2000 barrels per day. These fields and their daily average brine production are shown on the chart below. The fields account for the bulk of the state's total oil field brine production. Most of the brine is returned to the producing formations--mainly the Traverse and Dundee, part is returned to other formations. A small percentage is used on roads for dust control, or returned to oil-waste burning pits. Brine production by individual fields is found in the tables, Part 2. Other brine data is listed on Table 4, page 30, and Table 24, page 63.

MAJOR BRINE PRODUCING FIELDS

Field	Rank	1967	1966	1965
Coldwater	1	30,415	27,270	29,557
Albion-Scipio Trend	2	8,225	18,845	10,273
Porter	3	8,176	8,239	8,685
Deep River	4	7,635	7,875	7,870
Freeman-Redding	5	5,325	6,640	5,560
McBain	6	6,300	6,180	6,467
Stony Lake	7	2,603	4,154	4,397
Adams, North	8	3,976	3,583	3,262
Vernon	9	2,500	3,400	3,240
Reed City	10	6,039	2,919	3,416
Prosper	11	2,688	2,700	2,750
Gilmore	12	1,875	2,350	2,000
Reynolds	13	1,569	2,297	3,656
Pentwater	14	2,294	2,194	1,926
Clayton	15	1,950	2,098	2,079
Fork	16	2,180	2,025	2,650
Total		93,750	102,759	101,605
State Total (all fields)			144,382	145,102

TABLE 2. DRILLING PERMITS AND WELL COMPLETIONS BY COUNTY, 1967 (Sheet 1 of 2)

Classification of New Hole Completions
Does not include reworked wells or old wells drilled deeper

County	Oil and Gas Permits Issued	Oil and Gas Tests		Oil Wells	Gas Wells	Dry Holes	Service Wells				Total Completions
		Exploratory	Development				SWD	GS	Wtr. Inj.	LPG	
Alcona	1	1				1					1
Allegan	8	8	4	3		9					12
Antrim	1										
Arenac	2	2				2					2
Bay	3	2				2					2
Branch	2	3				3					3
Calhoun	51	4	44	13	1	34					48
Clare	2		1			1		1			2
Crawford		1				1					1
Genesee	1		1	1							1
Gladwin	1	1				1					1
Gratiot	2	2				2					2
Hillsdale	20	9	11	5		15					20
Ionia	2	2				2					2
Isabella	4	1	1	1*		1					2
Jackson	12	3	8	2		9					11
Kent	6	6				6					6
Lake	9	6	3	1*		8					9
Lapeer	3		4	2		2					4
Lenawee	7	3	10		7	6					13
Livingston	22	2		1*		1		20			22
Macomb	27	17	7	1		23					24
Mason	13	7	8	1		14					15
Mecosta	19	6	14	11		9					20
Midland (A)	5	2	1			3					3
Missaukee	12	1	5	4*		2					6
Monroe	1	1				1					1

TABLE 2. DRILLING PERMITS AND WELL COMPLETIONS BY COUNTY, 1967 (Sheet 2 of 2)

Montcalm	10	7	5	2		10					12
Muskegon	14	4	12	4		12					16
Newaygo	7	9	1	1		9					10
Oakland	2	2	1	1		2					3
Oceana	10	9	1			10					10
Ogemaw	7	1	6	4		3					7
Osceola	14	5	7	3**		9		3			15
Otsego	9		11		10	1					11
Ottawa	4	4				4					4
Roscommon		1				1					1
Saginaw	1	1				1					1
Shiawassee	5	2	2	3*		1					4
St. Clair	82	43	43	4**	20***	62					86
Tuscola	1		2	1		1					2
Van Buren	1	1				1					1
Washtenaw	2	1				1					1
Wayne							2				2
Totals 44 Counties	405	180	213	69	38	287	2	24			420

Does not include reworks resulting in gas wells.

Does not include reworks resulting in oil wells.

Includes 8 new permit numbers issued for previously drilled wells.
Includes 4 permits which were issued and terminated in 1967.

(A) One new oil well completed in Midland County--D & A old hole, cleaned out to TD and recompleted
* New field discovery
** Includes 1 new oil field discovery
*** Includes 2 new gas field discoveries

TABLE 3. NEW WELL COMPLETIONS BY DISTRICTS, 1967

	DISTRICTS					
	Basin	Northern	Western	Southwestern	Southeastern	Totals
CLASSIFICATION OF NEW WELL COMPLETIONS						
Oil Wells (1)	30	0	7	15	17	69
Gas Wells (2)	0	10	0	2	26	38
Gas Storage Wells	4	0	0	0	20	24
Geological Information Test	0	0	0	0	0	0
LPG Storage	0	0	0	0	0	0
Brine Disposal Well	0	0	0	0	2	2
Dry Holes	52	3	53	57	122	287
Total Well Completions	86	13	60	74	187	420
EXPLORATORY WELLS COMPLETED						
Exploratory Tests D & A	30	2	34	26	79	171
Successful Exploratory Tests*	4	0	1	0	4	9
Total Exploratory Tests	34	2	35	26	83	180

DRILLING PERMITS AND NEW WELL COMPLETIONS BY MONTHS, 1967

	MONTHS												
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
PERMITS ISSUED	29	35	33	24	30	43	40	39	40	36	30	26	405
CLASSIFICATION OF NEW WELL COMPLETIONS													
Oil Wells (1)	10	5	2	4	7	5	6	5	10	3	4	8	69
Gas Wells (2)	5	3	1	1	7	1	5	4	5	4	2	0	38
Gas Storage Wells	0	0	5	6	6	3	2	2	0	0	0	0	24
Geological Information Test	0	0	0	0	0	0	0	0	0	0	0	0	0
LPG Storage	0	0	0	0	0	0	0	0	0	0	0	0	0
Brine Disposal Well	0	0	0	0	0	0	0	0	0	0	0	2	2
Dry Holes	21	22	20	9	27	30	29	36	28	29	24	12	287
Total Well Completions	36	30	28	20	47	39	42	47	43	36	30	22	420
EXPLORATORY WELLS COMPLETED													
Exploratory Tests D & A	12	11	10	3	19	15	18	27	16	18	14	8	171
Successful Exploratory Tests*	0	1	0	0	0	1	2	1	1	1	1	1	9
Total Exploratory Tests	12	12	10	3	19	16	20	28	17	19	15	9	180

(1) Does not include oil wells resulting from rework operations.

(2) Does not include gas wells resulting from rework operations.

* Does not include new pool discoveries.

* * * DESCRIPTIVE WELL LOG AND SAMPLE LIBRARY * * *

Nearly 500 new well records and well rework records were received by the Regulatory Unit, Oil and Gas Section, during 1967. All were processed, microfilmed, and cataloged by the Petroleum Geology Unit which also processed and published 435 new logs. About 27,000 logs and other well records are available for purchase or use and inspection at Survey offices. More than 8,200 logs were printed and distributed upon request to individuals, oil and gas companies, and other agencies. In addition to individual orders, 40 subscription log orders were mailed each month to individuals, companies, government agencies, and universities.

The Survey acquired and cataloged 83 new sample sets from recently drilled wells. Geological test (core test) sample sets acquired several years ago were also cataloged and added to the sample library. The geological tests include 31 sets for northern Ohio, 305 for northern Indiana,

DEEP TESTS

County	Location	Operator and Lease	Permit Number	System and Formation	Total Depth	Expl. Class	Remarks
Alcona	30-28N-5E	North American Drlg. Co. #1 Cranberry Ranch	27060	Dev., D. R.	2318	NFW	
Branch	13-5S-6W	Perry Fulk #1 King L. & R.	26954	Ord., P. D. C.	4010	NFW	SO & G
Branch	13-5S-6W	Perry Fulk #1 Ratkowski, Tony	26926	Ord., P. D. C.	4020	NFW	
Branch	5-6S-5W	Houseknecht Oil Prod., Inc. #1 Liskey	26719	Camb., Tremp.	4100	NFW	
Hillsdale	32-8S-4W	B. B. & C. Oil Co. #1 Crall, James	27045	Camb., Tremp.	3463	NEW	
Hillsdale	10-5S-2W	McClure Oil Co. #1 Gabbard, Gordon	26891	Ord., P. D. C.	4462	NFW	SO & G
Hillsdale	8-6S-4W	Houseknecht Oil Prod., Inc. #1 Marshall G.	26578	Ord., P. D. C.	3892	NFW	SO
Hillsdale	9-6S-4W	Houseknecht Oil Prod., Inc. #1 Marshall R. & T.	27051	Ord., P. D. C.	3891	NFW	
Hillsdale	3-9S-1W	Liberty Petroleum Corp. #1 Horwath J.	27024	Camb., E. C.	3977	NFW	
Hillsdale	27-6S-2W	U. S.-Can Corporation #1 Graham M.	26949	Ord., P. D. C.	4152	NFW	
Ionia	4-6N-8W	An-Son Corporation #1 Dieterman G. & G.	27021	Ord., P. D. C.	6090	NFW	
Ionia	35-7N-8W	An-Son Corporation #1 Essington L. & E.	26990	Ord., P. D. C.	6313	NFW	
Jackson	16-2S-2W	G. S. Swan & Mich. Cons. Gas Co. #1 Fisher W. L.	27084	Ord., P. D. C.	4986	NFW	
Kent	29-9N-10W	An-Son Corporation #1 Parmeter E. & L.	26908	Ord., P. D. C.	6652	NFW	
Kent	2-7N-9W	An-Son Corporation #1 Wingeier A.	26946	Ord., P. D. C.	6393	NFW	
Lake	17-19N-11W	Texaco, Inc. #1 Ellsworth Twp.	26835	Dev., Sylv.	4836	NFW	
Livingston	25-3N-5E	Texaco, Inc. #1 Hills, John E.	27034	Sil., Clinton	4558	NFW	
Newaygo	20-15N-14W	Thunder Hollow Oil & Gas Co. #1 Thompson W. & R.	26662	Ord., P. D. C.	6585	NFW	
DRY DEEPER POOL TESTS 1967							
Allegan	15-3N-13W	Harris Oil Co. #1 Brenner-Commans etal	26790	Sil., Niag.	3200	DPT	Monterey
Allegan	9-3N-13W	Harris Oil Co. #1 Swander & Conklin Comm.	26864	Sil., Niag.	3132	DPT	Monterey
Gratiot	5-10N-4W	Mich. Cons. Gas Co. #1 Shuttleworth	26779	Dev., Dd.	3287	DPT	Shaver
Mecosta	22-13N-10W	Cook Bros. & Mich. Cons. Gas Co. #1 McHugh	27000	Dev., R. C.	3500	DPT	Winfield
Mecosta	27-13N-10W	Cook Bros. & Mich. Cons. Gas Co. #1 Sellars G.	26847	Dev., R. C.	3399	DPT	Winfield
Newaygo	5-14N-14W	Gordon G. H. #1 Haight E. R.	26893	Dev., D. R.	3400	DPT	Huber
Ottawa	34-7N-13W	Swanson & Babcock #4-A Fenske R.	25800	Ord., P. D. C.	5126	DPT	Walker

and 844 sets for Michigan. An additional 180 sample sets, mostly from the Albion-Scipio Trend field, were added to the library. The latter sets, consisting primarily of the Trenton-Black River formations, are available for petrographic or insoluble residue studies. Consulting or company geologists borrowed and examined 251 sets of samples during 1967. No charge is made for use or examination of well cuttings.

* * * PUBLIC HEARINGS * * *

Act No. 61 of the Public Acts of 1939, as amended, provides for hearings on oil and gas matters. Act No. 326 of the Public Acts of 1937, as amended, provides for hearings on matters pertaining to natural dry gas. Hearings on matters of local concern involving the administration of rules and regulations, such as exceptions to spacing orders, or pooling of interests to form drilling units, are conducted by the Supervisor of Wells, the State Geologist. Hearings on matters involving broad policies and practices having field-wide or state-wide application are conducted by the Supervisor of Wells and before the Advisory Board. Oil and gas hearings held during 1967 are summarized below.

* * * NEW PUBLICATIONS * * *

Champion, Beverly L., 1967, Oil-Gas Activity Continues Downtrend: Mich. Manufacturer and Financial Rec., V. 119, No. 5, pp. 52, 82.

Ells, Garland D., Compiler, 1967, Michigan's Oil and Gas Fields 1966: Mich. Geol. Survey Ann. Statistical Summ. 6, 64 p.

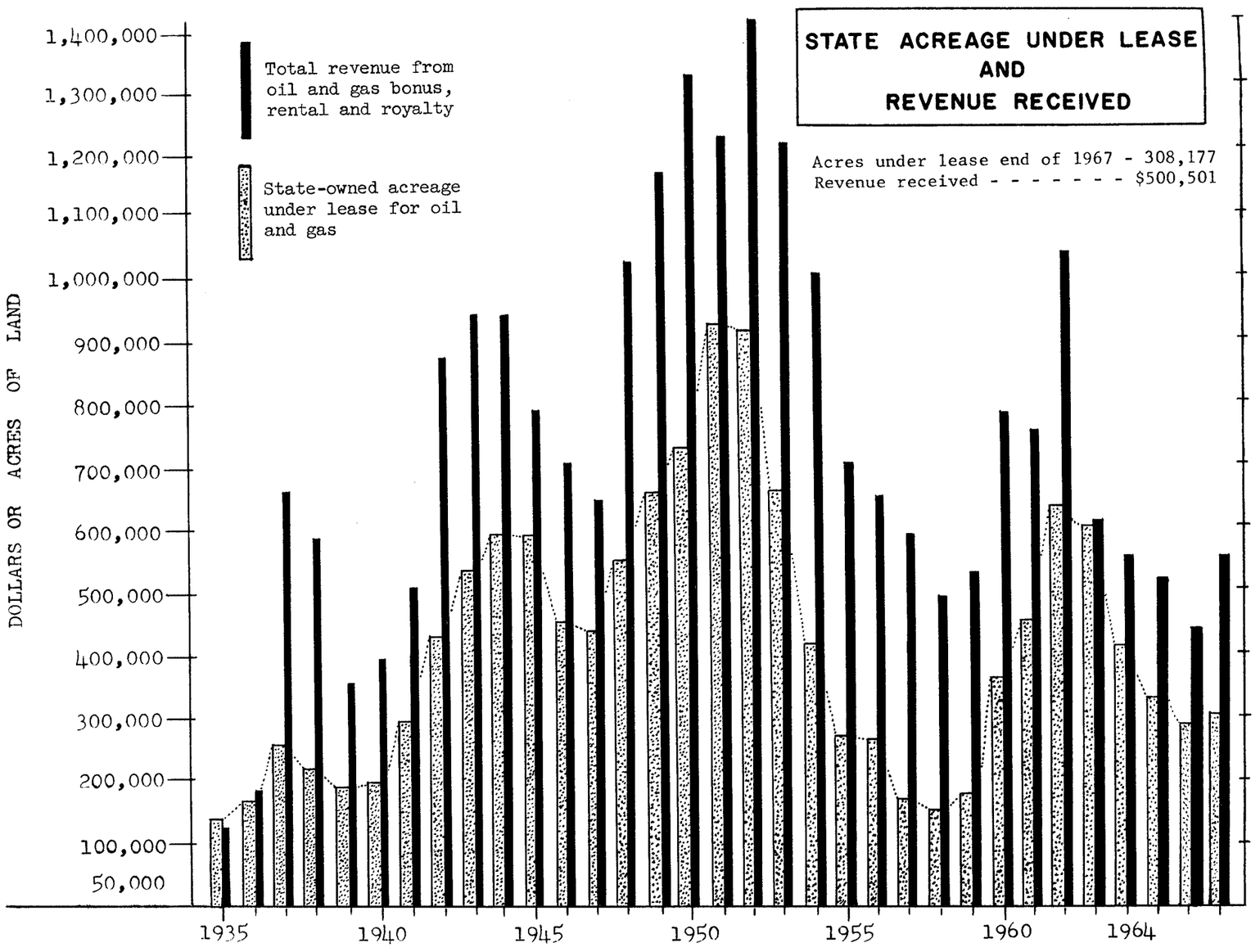
Ells, Garland D., Michigan's Silurian Oil and Gas Pools, 1967: Mich. Geol. Survey Report of Investigations No. 2, 49 p.

Ells, Garland D., and Ives, Robert E., 1967, Developments in Michigan in 1966: Am. Assoc. Petroleum Geologists Bull., V. 51, No. 6, pp. 1039-1044.

Kirkby, Edward E., 1967, Index to Michigan Geological Thesis: Mich. Geol. Survey Circular No. 7, 32 p.

OIL AND GAS HEARINGS

Hearing Per Month	January	February	March	April	May	June	July	August	September	October	November	December	Totals
	3	5	5	1	0	1	3	4	3	2	5	0	32
Items or Causes Heard													
Spacing Orders:													
Adopted	2		1					2	1		1		7
Amended								3	3	2	2		10
Abrogated	1							1	1				3
Proration Orders:													
Adopted											1		1
Amended								2					2
Abrogated								1					1
Off-Pattern Permits Issued	4	6	3	1		1	3	3		4	3		28
Pooling to Form Drilling Unit			1				1		1				3
Determine Reservoir Status								3		1	1		5
Unitization of Pool									1				1
Authorize Air Injection											1		1
Items heard, no action taken	1		2										3
Total Items or Causes	8	6	7	1		1	4	15	7	7	9		65



* * MICHIGAN OIL REFINERIES * *

COMPANY	REFINERY LOCATION	NOMINAL CAPACITY* BBLS. DAY
Bay Refining, Division Dow Chemical Company	Bay City	15,000
Crystal Refining Company	Carson City	6,200
Delta Terminal Company (Abandoned 1967)	Rapid River	4,000
Lakeside Refining Company	Kalamazoo	3,500
Leonard Refineries, Inc.		
Leonard Division	Alma	29,000
Roosevelt Division	Mt. Pleasant	7,500
Marathon Oil Company	Detroit	50,000
Naph-Sol Refining Company	Muskegon	10,000
Osceola Refining Company	West Branch	5,000
Petroleum Specialties, Inc.	Flat Rock (Inactive)	6,500
Socony Mobil Oil Company	Trenton	40,700
	Total Refinery Capacity	173,400

*Individual refinery operating rates may be less or slightly more than nominal rates shown.

PART 2, OIL AND GAS FIELDS
EXPLANATION

Part 2 brings together general information on Michigan's oil and gas fields, gas storage reservoirs and related items. The tables summarize information relating to oil and gas accumulations which have been designated and named as oil or gas fields.

OIL AND GAS FIELDS. Most fields consist of one pool with oil or gas production coming from a single formation. A few fields have 2 or more separate pools each producing from a different formation or stratigraphic interval and at a different depth. Pools for individual fields are shown under PRODUCING FORMATION OR POOL. The PAY ZONE part of the table generally refers to the discovery well for the specific pool. The PAY THICKNESS shown on the tables does not necessarily indicate net producing pay for the reservoir. The DEEPEST FORMATION TESTED column indicates the deepest total depth and formation penetrated in the field.

LOCATION OF OIL FIELDS, GAS FIELDS, ETC. These tables show the specific locations of the fields and the sections which have or have had producing wells. Miscellaneous wells which produced some oil but were eventually abandoned as dry holes are also included. Miscellaneous wells reporting some gas production are also included.

OIL AND GAS FIELD MAPS. It is not practical to outline and show the names of all the hydrocarbon accumulations that have been designated as a field or pool. In general, the field names shown on the several maps are in agreement with the field names shown on the oil and gas field tables. Certain miscellaneous or single well fields are not shown on the maps but are listed in the tables.

ABANDONED OIL AND GAS FIELDS OR POOLS. Oil and gas fields or pools are considered abandoned when all wells have been plugged to the surface and the equipment has been removed from the area. Fields abandoned during a given year are entered into the abandoned field tables in the following year. Abandoned oil fields with less than 500 barrels of cumulative oil production are not shown in the tables. Production from fields having less than 500 barrels cumulative production is accounted for in the table summaries. Fields or pools may be re-activated from time to time when new producing wells are drilled.

GAS FIELDS. Many gas fields are listed as "shut in" due to lack of marketing facilities, slow field development, or lack of substantial reserves. Production from fields listed as "Domestic" or "Lease Fuel" is not metered or considered commercial.

GAS STORAGE RESERVOIRS. Most gas storage reservoirs were originally classified as gas fields or pools and upon depletion or near depletion they were converted to storage reservoirs. Undeveloped gas storage reservoirs are gas pools that have been designated to become storage reservoirs at some future time.

LPG STORAGE. Surface and underground storage facilities for liquified petroleum gas.

OIL WELL GAS. This is casinghead gas produced incidental to the production of oil from pools or fields generally classified as oil accumulations.

CASINGHEAD GAS PLANT DATA. These tables indicate the distribution of gross input gas to plants and the resulting net hydrocarbons available for market.

FLUID INJECTION INTO PRODUCING FORMATIONS. A number of fields have secondary recovery projects in operation. In most fields listed in these tables, the injection of oil field brines back into the producing formation is a combination brine disposal and pressure maintenance project.

ALBION - SCIPIO TREND

Now well into its eleventh year, the Albion-Scipio Trend continues to be, as it has the past 8 years, the mainstay of Michigan's oil production. In 1957, the discovery year for the Scipio part of the Trend, the field contributed less than one percent of the state's oil production for that year. But by the end of 1960 the field had been extended to near its present outline, and oil production had climbed to nearly 50 percent of the state's annual output. In 1961 the field contributed nearly 60 percent of the oil production for that year. In spite of a small but gradual decline in field output since its peak year, oil production still amounted to about 37 percent of the state's total production for 1967.

The Albion-Scipio Trend also rates as one of Michigan's best gas fields due to the gas-cap oil reservoir. Drilling units for Trend wells are 20-acre tracts. Wells are prorated to 110 BOPD and/or 150 Mcfg. A gathering system and gas plant serving a large part of the Trend was put into operation in 1960. Oil well gas processed through the plant that year amounted to nearly 15 percent of the state's total gas production. Gas production has increased each year, so by the end of 1967 the Trend provided over 32 percent of the state's gas for that year. Cumulative LPG production from the Albion-Scipio gas plant operation at the end of 1967 amounted to about 5,166,440 barrels, well above the cumulative oil productivity of most Michigan oil fields. Good oil-gas field conservation methods and practices throughout the history of the field have undoubtedly contributed much to the success and ultimate hydrocarbon recovery from Michigan's giant, Ordovician age oil field.

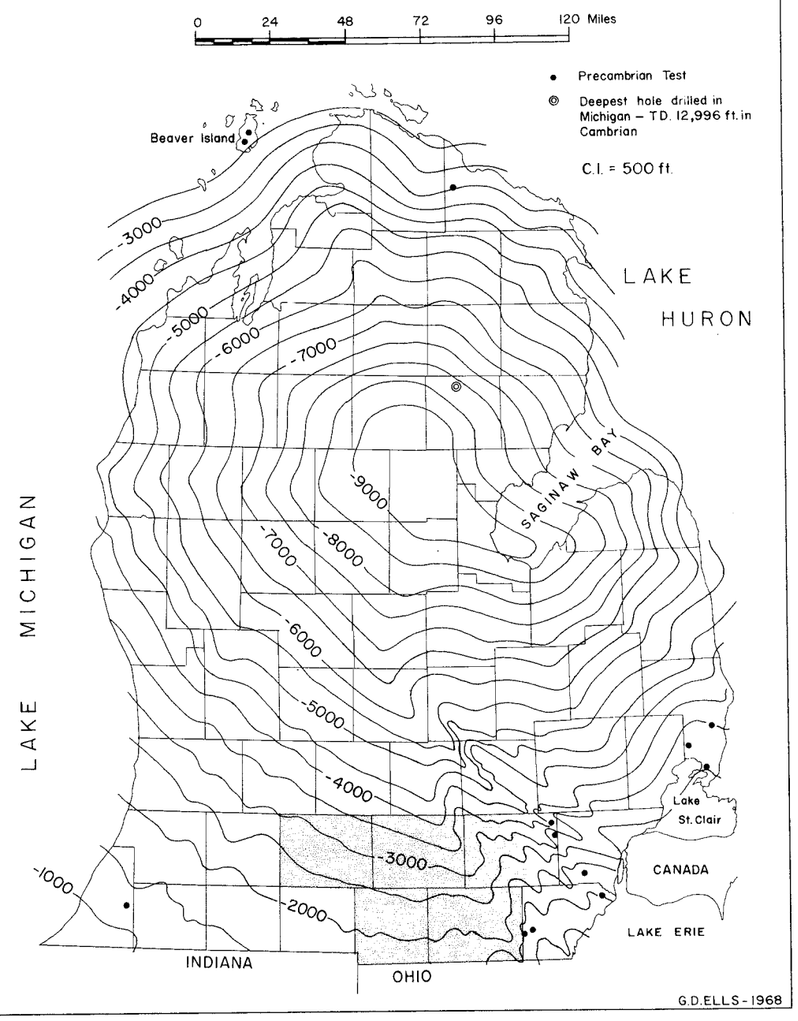
Locating another Ordovician oil field like Albion-Scipio is probably the dream of most oil finders; but, so far, such a bonanza has been elusive. The original discovery well, so the story goes, was drilled on the basis of a fortune teller's dream and on land unleased and deemed unfavorable according to gravimeter surveys. Plain luck was a factor. Conventional geological studies share very little credit in the discovery and development of this field. Outpost or extension discoveries were located mainly by "ruler-geology", hence, the term "trend". In the past 8 or 9 years, oil companies have made determined efforts to find similar fields. Many geological and geophysical studies have been made; many expensive dry holes have been drilled to no avail. Surely, other similar Ordovician oil fields are yet to be found in this part of the Basin and elsewhere.

The Trend is a linear field, not much more than a mile wide at most but stretching nearly 35 miles in length. The reservoir rocks are fractured and dolomitized limestones of the Trenton-Black River groups. The adjacent contour map shows a regional structural interpretation on the top of the Trenton Group. The Albion-Scipio Trend cuts across parts of three counties as shown by the shaded area, and in more detail on the map below. Structural elements on the top of the Trenton along the Trend and adjacent areas are of low relief. The productive part of the Trend is synclinal in character along most of its length, and also the narrow spurs which join the main "trend" at an oblique angle. Structural relief from syncline to adjacent, high, all limestone, dry holes is about 40 feet at most.

As noted on the contour maps, the Trend is not associated with large scale structures such as those found in the deformed region to the east. The Trend and nearby Ordovician fields such as Tekonsha, Springport, Hanover, and others shown on the map below are similar in structural aspects. The Freedom field, now abandoned, is a fractured and dolomitized trap located on the southwest flank of a prominent anticline. The Deerfield field is located along a faulted and dolomitized structural feature which is a part of the strongly deformed region shown on the adjacent map. All the fields shown are narrow and linear, have approximately the same geographical orientation or lineation, and the reservoir rocks are fractured and dolomitized limestones. The structural character of the Hanover field (see map below) is similar to parts of Albion-Scipio, especially the "spurs" which join the main reservoir. This small field was discovered during the early stages of Albion-Scipio exploration and development in 1959. It has made over a million barrels of oil and more than 310 million cubic feet of gas. To date, 10 producing wells and numerous dry holes have been completed. Most of the production has come from the discovery well. Structural differences between producing wells and dry holes are very small; pays are in dolomitized limestones.

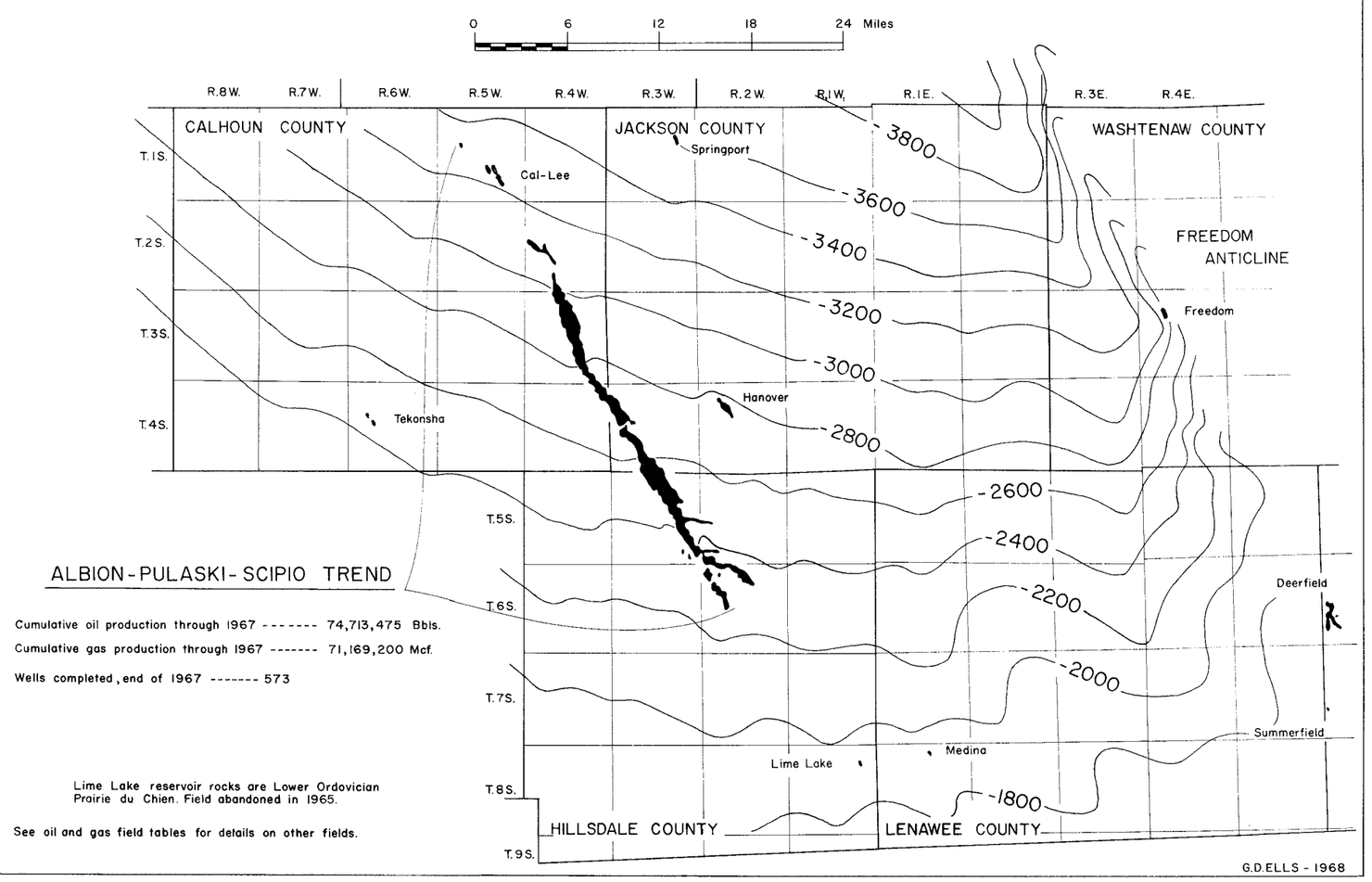
Two structural provinces are apparent. The Trend and the smaller adjacent fields are located in a structurally undeveloped part of the Basin, west of the deformed area or Washtenaw Anticlinorium. It is probable that the "syncline"-type, low-relief, oil and gas traps will be the dominate kind in this region. Gravimeter anomalies are associated with the Trend and similar anomalies are reported in adjacent, so far non-productive areas. Wells drilled on some of these anomalies have met with little success in establishing new fields. Larger structures like those to the east can be readily detected and outlined by a relatively small amount of subsurface control, but fields such as the Trend have no radical structural differences. It may be that geophysical and subsurface geological techniques are not refined enough to detect these not-so-obvious oil and gas traps. When more is known about the pre-Black River rocks and the character of the Precambrian surface, some of the anomalies can be better interpreted. The adjacent map shows the location of reported Precambrian tests in the Southern Peninsula. Additional information is listed on page 22.

CONTOURS ON THE TOP OF THE TRENTON GROUP



G.D.ELLS - 1968

ORDOVICIAN OIL FIELDS
IN VICINITY OF
ALBION - PULASKI - SCIPIO TREND



ALBION - PULASKI - SCIPIO TREND

Cumulative oil production through 1967 ------- 74,713,475 Bbls.

Cumulative gas production through 1967 ------- 71,169,200 Mcf.

Wells completed, end of 1967 ------- 573

Lime Lake reservoir rocks are Lower Ordovician Prairie du Chien. Field abandoned in 1965.

See oil and gas field tables for details on other fields.

G.D.ELLS - 1968

TESTS REPORTED TO HAVE PENETRATED PRE-CAMBRIAN ROCK IN THE SOUTHERN PENINSULA OF MICHIGAN

Permit				Pre-Cambrian	Total Depth	Year Completed			
26112	Berrien Co. Berrien Twp.	10-6S-17W	Security Oil & Gas Thalman #1	4604 (-3800)	5647 (-4843)	1965			
23478	Charlevoix Co. Peane Twp.	6-37N-10W	McClure Oil Co. State-Beaver Island #2	4718 (-3977)	4803 (-4062)	1961	Age Biotite Feldspar	Rb-Sr 1100 1110	K-Ar 1090
23435	Charlevoix Co. Peane Co.	27-38N-10W	McClure Oil Co. State-Beaver Island #1	4566 (-3888)	5383 (-4705)	1961			
10448	Lenawee Co. Riga Twp.	32-8S-5E	Walter H. Eckert Harry Taylor #1	3865 (-3150)	3902 (-3186)	1944			
11221	Monroe Co. Berlin Twp.	29-5S-10E	Joseph W. Sturman D.L. & R.L. Chapman #1	3342 (-2745)	3377 (-2780)	1945			
7702	Monroe Co. Ida Twp.	19-7S-7E	Jacob Beck Mrs. James Sancrant #1	3595 (-2926)	5495 (-4826)	1954			
25494	Monroe Co. Summerfield Twp.	16-7S-6E	Ferguson & Garrison Merlin Shimp #1	3637 (-2951)	3671 (-2985)	1964			
27199	Presque Isle Co. North Allis Twp.	29-35N-2E	Pan American Petro. Corp. D. E. Draysey #1	5877 (-5069)	5940 (-5132)	1968			
BD139	St. Clair Co. Casco Twp.	31-4N-15E	Consumers Power Co. Consumers Power Co. BD#1	4605 (-3989)	4627 (-4011)	1964			
25780	St. Clair Co. Clay Twp.	Projected 17-2N-16E	L. Bernhardt Puzzuoli #1	4152 (-3572)	4188 (-3608)	1965			
196	St. Clair Co. St. Clair Twp.	26-5N-16E	St. Clair Oil & Gas Corp. Hurst #1	4730 (-4080)	4770 (-4110)	1929	Age Biotite	Rb-Sr 1020	
10792	Washtenaw Co. Salem Twp.	27-1S-7E	I. C. Chamness Troy-Roddenberry Comm. #1	6075 (-5189)	6094 (-5208)	1944			
10141	Washtenaw Co. Salem Twp.	16-9S-7E	Colvin & Assoc. & Elec. Wm. F. Voss Comm. #1	6374 (-5459)	6410 (-5495)	1944	Age Biotite	Rb-Sr 950	
11341	Washtenaw Co. Superior Twp.	12-2S-7E	Colvin & Assoc. & Rot. St. Viola Meinzinger #1	5670 (-4852)	5692 (-4874)	1945	Age Biotite	Rb-Sr 1050	
10430	Wayne Co. Huron Twp.	16-4S-9E	Colvin & Assoc. & Elec. Theisen Estate #1	3985 (-3360)	4046 (-3321)	1944			

DEEPEST EXPLORATORY WELL DRILLED IN MICHIGAN

25099	Ogemaw Co. Foster Twp.	28-24N-2E	Brazos Oil & Gas etal State-Foster #1	Trenton 9766 (-8290)	12,996 (-11520)	Cambrian			

TABLE 4. MICHIGAN OIL FIELDS (1-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE: DEPTH IN FEET	PAY ZONE: THICKNESS AND LITHOLOGY		PAY ZONE: OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS: TO END 1967	COMP. IN 1967	ABAND. IN 1967	PRODUCING AT END 1967	SHUT IN OR SHUT DOWN	OIL PRODUCTION IN BARRELS: PRODUCED IN 1967	CUMULATIVE THROUGH 1967	DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY: DISPOSAL SUBSURFACE	DISPOSAL SURFACE	TOTAL PRODUCTION
ADAIR	ST. CLAIR	1961	SALINA-NIAGARAN	2719	10	D	41.4	NIAGARAN	2755	17	0	0	16	0	21,723	247,480	520	476	261		261
ADAMS	ARENAC-BAY	1937	TRAVERSE	2032	15	L	37.0	BOIS BLANC	5079	24	0	0	8	4			240		2	1	3
		1937	DUNDEE	2958	15	L	34.7			31	0	0	17	0			310		5	20	25
		1941	RICHFIELD	4278	5	L	35.5														
		1956	DETROIT RIVER SZ	3943	5	L	39.6			31	0	0	8	2	20,837	1,404,147	1080	861	0	2	2
													THE 8 WELLS INCLUDE 2 RICHFIELD, 1 SOUR ZONE AND 5 RICHFIELD & SOUR ZONE								
ADAMS, NORTH	ARENAC	1940	DUNDEE	2905	15	D	32.0	DETROIT RIVER	4489	49	0	0	19	1	36,588	9,164,920	470	19,500	3,975	1	3,975
AKRON	TUSCOLA	1936	DUNDEE	2678	17	L	37.3	SYLVANIA	4130	50	0	0	34	4			800		114	*29	143
		1938	DETROIT RIVER SZ	3422	11	D	35.9										500				
		1954	RICHFIELD	3774	6	D	39.2			27	0	0	19	1	44,136	1,724,305	40	1,287	0	*39	39
													THE 19 WELLS INCLUDE 2 RICHFIELD, 12 SOUR ZONE AND 5 SOUR ZONE & DUNDEE								
ALBION-PULASKI-SCIPIO TREND: FIELD AND PRODUCTION DATA LISTED BY TOWNSHIP AND COUNTY																					
LEE TWP.	CALHOUN	1961	NIAGARAN	3060	20	D	24.2	PRAIRIE DU CHIEN	4912	1	0	0	1	0			80		0	*120	120
		1960	TRENTON-BLACK RIVER	4600	24+	D				12	0	0	10	3	109,255	1,060,243	220	4,819	0	0	0
SHERIDAN TWP.	CALHOUN	1960	TRENTON-BLACK RIVER	4179	10+	D	40.0	PRAIRIE DU CHIEN	4791	36	11	0	34	2	445,366	2,291,411	670	3,420	1,214	2	1,216
ALBION TWP.	CALHOUN	1958	TRENTON-BLACK RIVER	3952	?	D	44.0	PRAIRIE DU CHIEN	4623	142	2	0	137	7	1,547,295	15,949,520	2740	5,821	3,004	0	3,004
PULASKI-HOMER TWPS.	JACKSON - CALHOUN	1959	TRENTON-BLACK RIVER	3766	66+	D	39.6			138	2	0	135	2	1,648,213	18,559,150	2650	7,003	5,474	*20	5,494
SCIPIO-FAYETTE-MOSCOW TWPS.	HILLSDALE	1957	TRENTON-BLACK RIVER	3576	50+	D	41.4	PRAIRIE DU CHIEN	4202	192	4	2	179	9	3,330,454	31,767,331	3390	9,371	8,221	4	8,225
ADAMS TWP.	HILLSDALE	1959	TRENTON-BLACK RIVER	3984	6+	D	42.0	PRAIRIE DU CHIEN	4162	52	1	0	44	3	715,572	5,085,820	920	5,528	520	1	521
TREND TOTAL:										573	20	2	540	26	7,796,155	74,713,475	10,670	7,002	18,433	147	18,580
AREBELA	TUSCOLA	1946	DUNDEE	2557	7	L	35.3	DETROIT RIVER	3375	35	0	0	2	0	10,181	316,778	350	905	0	0	0
ASHTON	OSCEOLA	1945	TRAVERSE	2950	4	L	42.0	DETROIT RIVER	3686	4	2	0	3	0			80		700	0	700
		1945	DUNDEE	3645	5	L	40.0			4	0	0	4	0	8,795	414,561	200	1,480	0	0	0
ATLANTA	MONTMORENCY	1945	DETROIT RIVER	2183	5	D	36.2	DETROIT RIVER	2550	3	0	0	1	0	0	7,688	30	256	0	0	0
AU GRES	ARENAC	1953	RICHFIELD	4152	11	L	36.5														
		1956	DETROIT RIVER SZ	3822	14	L	31.4	RICHFIELD	4315	4	0	0	3	0	2,555	43,562	160	272	0	1	1
													THE 3 WELLS INCLUDE 2 RICHFIELD AND 1 RICHFIELD & SOUR ZONE								
BARD	GLADWIN	1949	DUNDEE	3933	6	L	42.8	DUNDEE	4017	17	0	4	4	1	3,395	567,309	170	3,337	200	0	200
BEAVER CREEK UNIT	CRAWFORD-KALKASKA	1947	RICHFIELD	4160	20	D	44.7	SYLVANIA	4503	100	0	0	59	1	195,842	6,385,939	4040	1,581	336	0	336
BEAVERTON	GLADWIN	1934	DUNDEE	3929	12	L	41.3	RICHFIELD	5225	26	0	0	4	1	4,674	860,142	330	2,606	71	0	71
BEAVERTON, SOUTH	GLADWIN	1936	DUNDEE	3845	12	L	34.5	DETROIT RIVER	4977								700				
		1956	TRAVERSE	3231	6	L	41.0			33	0	0	19	0	22,034	1,586,499	10	2,234	256	3	259
													THE 19 WELLS INCLUDE 18 DUNDEE AND 1 DUNDEE & TRAVERSE								
BEAVERTON, WEST	GLADWIN	1943	DUNDEE	3876	2	L	41.2	DETROIT RIVER	5094	7	0	1	4	0	9,821	134,166	260	516	2	0	2
BELLY ACHERS	MONTCALM	1944	DUNDEE	3470	1.3	D	48.2	DUNDEE	3615	7	0	0	3	2	184	333,727	220	1,517	100	0	100
BENTLEY	GLADWIN	1937	DUNDEE	3510	13	L	42.1	SYLVANIA	5114	88	0	2	48	3	36,870	2,719,676	1960	1,387	79	13	92
		1952	RICHFIELD	4440	14	L	40.0														
		1952	TRAVERSE	2855	6	L	34.1						THE 48 WELLS INCLUDE 47 DUNDEE AND 1 TRAVERSE, DUNDEE & RICHFIELD								
BERLIN	ST. CLAIR	1960	NIAGARAN	3800	25	D	42.8	CINCINNATIAN	4310	4	0	0	4	0	34,165	311,907	140	2,228	0	0	0
BEVANS LAKE	MECOSTA	1951	TRAVERSE	2997	1	L	44.2	REED CITY	3731	4	0	0	1	0	1,021	87,959	40	2,199	92	0	92
BIG HAND	ST. CLAIR	1961	NIAGARAN	2898	5+	D	39.5	CLINTON	3097	10	0	0	10	1	82,757	511,927	220	2,327	41	5	46

TABLE 4. MICHIGAN OIL FIELDS Continued (2-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE				DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS					OIL PRODUCTION IN BARRELS		DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY		
				DEPTH IN FEET	THICKNESS AND LITHOLOGY		OIL GRAVITY A.P.I.			TO END 1967	COMP. IN 1967	ABAND. IN 1967	PRODUCING AT END 1967	SHUT IN OR SHUT DOWN	PRODUCED IN 1967	CUMULATIVE THROUGH 1967			DISPOSAL		TOTAL PRODUCTION
																			SUBSURFACE	SURFACE	
BILLINGS	GLADWIN	1949	DUNDEE	3549	6	L	39.7	RICHFIELD	4995	20	0	0	19	0			400		2	0	2
		1950	DETROIT RIVER	4070	7	D	43.3			10	0	0	9	0	15,064	735,038	200	1,225	0	0	0
BILLINGS, SOUTH	GLADWIN	1957	DUNDEE	3540	5		39.5	DETROIT RIVER	4152	8	0	0	8	0	9,259	125,692	70	1,796	0	1	1
BIRCH-BELA	SAGINAW-TUSCOLA	1951	DUNDEE	2504	7	L	36.0	DETROIT RIVER	3263	29	1	0	29	1	18,198	214,715	330	651	0	6	6
BIRCH RUN	SAGINAW	1954	DUNDEE	2536	10	L	36.2	DUNDEE	2716	34	0	0	32	3	15,210	464,704	480	968	0	1	1
		1934	BEREA	(REFER TO ABANDONED FIELDS)																	
BLISSFIELD	LENAWEE	1963	TRENTON-BLACK RIVER	(GAS RESERVOIR PRODUCING MINOR QUANTITIES OF OIL)											136	136					
BLOOMER	MONTCALM-IONIA	1944	TRAVERSE	2640	3.3	L	42.3	DETROIT RIVER	3271	29	0	0	7	1	16,883	1,911,538	530	3,606	750	*300	1,050
BLOOMINGDALE	VAN BUREN	1938	TRAVERSE	1244	4	L	42.0	TRENTON	3090	431	0	0	28	8	8,820	9,965,860	4,040	2,467	585	13	598
BOYD	ST. CLAIR	1958	SALINA-NIAGARAN	2457	292	D	37.7	PRECAMBRIAN	4634	49	0	0	46	5	132,274	1,382,742	1,840	751	470	0	470
BRINTON	ISABELLA	1967	DUNDEE	4082	3	D		DUNDEE	4085	1	1	0	1	0	2,064	2,064	40	52	0	3	3
BUCKEYE, NORTH	GLADWIN	1936	DUNDEE	3615	14	L	39.0	SYLVANIA	5351	287	0	3	62	12	115,428	18,816,668	3,030	6,210	1,957	16	1,973
BUCKEYE, SOUTH	GLADWIN	1936	DUNDEE	3570	11	L	39.0	DETROIT RIVER	4802	197	0	0	27	2	21,754	4,924,445	2,270	2,169	11	15	26
		1956	TRAVERSE	(REFER TO ABANDONED FIELDS)																	
		1964	DETROIT RIVER SZ	4481	14	D	46.0			1	0	0	1	0	10,630	51,100	40	1,277	0	0	0
BURDELL	OSCEOLA	1959	DUNDEE	3678	4	L		REED CITY	3804	5	0	0	3	0			120		230	0	230
		1960	REED CITY	3802	2	D				1	0	0	1	1	4,136	142,020	40	888			
BUTMAN	GLADWIN	1949	DUNDEE	(REFER TO ABANDONED FIELDS)																	
		1949	RICHFIELD	4921	10	D	41.6	SYLVANIA	5027	5	0	0	5	0	7,599	284,447	230	1,237	35	3	38
		1950	TRAVERSE	(REFER TO ABANDONED FIELDS)																	
CAPAC	ST. CLAIR	1961	NIAGARAN	(GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL)											2,397	2,397					
CAREY LAKE	NEWAYGO	1966	REED CITY	3411	2	D		REED CITY	3413	2	1	0	2	0	6,362	15,030	80	189	0	10	10
CATO	MONTCALM	1944	REED CITY	3542	3	D	44.7	DETROIT RIVER	3731	17	0	0	7	0	19,445	920,340	590	1,560	1,715	0	1,715
CEDAR	OSCEOLA	1943	DUNDEE	3810	2	L	46.0	SYLVANIA	5165	10	0	0	7	0			400		1,800	0	1,800
		1945	RICHFIELD	5060	6	L	44.7			2	0	0	2	0	13,862	1,064,372	60	2,313	0	0	0
CEDAR CREEK	MUSKEGON (REACTIVATED)	1949	TRAVERSE	1951	2	L		DUNDEE	2453	2	1	0	1	1	1,429	2,652	50	53	0	0	0
CHASE	LAKE	1943	BEREA	2460	4	SL		DETROIT RIVER	3734	2	0	0	1	0	193	7,673	20	383	0	0	0
CHESTERFIELD	MACOMB	1962	NIAGARAN	2508	7	D	40.3	NIAGARAN	2691	6	1	0	2	0	2,451	19,789	240	82	25	0	25
CHINA, SEC. 12	ST. CLAIR	1962	NIAGARAN	2509	11	D	39.1	CLINTON	2631	2	0	0	2	1	1,997	11,895	80	149	0	15	15
CHINA BELLE	ST. CLAIR	1963	NIAGARAN	(GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL)											606	606	10	61			
CHINA, SEC. 31	ST. CLAIR	1959	SALINA	(COMBINED WITH COTTRELLVILLE IN 1962)																	
CLARE CITY	CLARE	1938	MICHIGAN STRAY	1303	2	S	30.2	DUNDEE	3853	7	0	0	4	1	1,051	73,423	120	612	0	0	0
CLAYTON	ARENAC-OGEMAW	1935	DUNDEE	2465	12	DL	34.2	SYLVANIA	4163	80	0	0	47	2			1,290		1,917	33	1,950
		1947	RICHFIELD	3790	9	D	36.2														
		1953	DETROIT RIVER	3507	9	D	45.9			5	0	0	5	0	49,636	6,197,604	200	4,159	0	0	0
													THE 5 WELLS INCLUDE 3 RICHFIELD, 1 SOUR ZONE AND 1 RICHFIELD & SOUR ZONE									
COLDWATER	ISABELLA	1944	DUNDEE	3692	25	L	48.0	DETROIT RIVER	5090	81	0	2	52	15	128,885	21,505,126	3,200	6,720	30,415	0	30,415
COLFAX	MECOSTA	1964	DUNDEE	3503	25	L	43.0	DETROIT RIVER	4043	2	0	2	0		72	2,188	40	55	(FIELD ABANDONED 1967)		
COLUMBUS	ST. CLAIR	1964	SALINA-NIAGARAN	(GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL)											137	137					
COLUMBUS, SEC. 23	ST. CLAIR	1965	NIAGARAN	(GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL)											2,036	2,036					
COTTRELLVILLE	ST. CLAIR	1961	SALINA-NIAGARAN	2262	6	D	38.7	CLINTON	2511	12	0	0	9	2	9,198	91,397	280	326	0	3	3

TABLE 4. MICHIGAN OIL FIELDS Continued (3-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE				DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS					OIL PRODUCTION IN BARRELS		DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY		
				DEPTH IN FEET	THICKNESS AND LITHOLOGY		OIL GRAVITY A.P.I.			TO END 1967	COMP. IN 1967	ABAND. IN 1967	PRODUCING AT END 1967	SHUT IN OR SHUT DOWN	PRODUCED IN 1967	CUMULATIVE THROUGH 1967			DISPOSAL		TOTAL PRODUCTION
																			SUBSURFACE	SURFACE	
CRANBERRY LAKE	CLARE	1943	DUNDEE	3835	2	L	42.8	RICHFIELD	5223	S	0	0	3	1			70		350	0	350
		1952	TRAVERSE	3120	7	L	39.0	(REFER TO ABANDONED FIELDS)													
		1953	DETROIT RIVER	(REFER TO ABANDONED FIELDS)																	
		1951	RICHFIELD	5048	15	D	51.0			17	0	0	12	0	39,530	1,406,056	680	1,874	13	33	46
CRANBERRY LAKE, EAST	CLARE	1963	DUNDEE	3760	6		43.5	DETROIT RIVER	5139	4	0	0	4	0			200		264	10	274
		1963	TRAVERSE	3057	6		39.2	ABANDONED 1964, PRODUCTION COMBINED WITH DUNDEE AND RICHFIELD									40				
		1964	RICHFIELD	5087	12	D	44.0			2	0	0	2	0	85,540	345,822	80	1,081	39	0	39
CRYSTAL	MONTCALM	1935	DUNDEE	3187	4	D	43.5	DETROIT RIVER	3391	193	0	0	7	1			2,000		865	0	865
		1954	TRAVERSE	2769	4	L	41.8			2	0	0	1	0	10,525	7,771,720	20	3,847	330	0	330
CRYSTAL VALLEY	OCEANA	1945	TRAVERSE	1809	3	L	37.0	ST. PETER Ss.	6062	5	0	0	1	0			50		175	0	175
		1957	DUNDEE	2575	12	D	42.5			19	0	0	1	1	235	203,616	420	433			
CURRIE	ISABELLA	1936	DUNDEE	3918	2	D	45.9	DUNDEE	4042	2	0	0	2	0	904	199,896	40	4,997	0	0	0
DALTON	MUSKEGON	1940	TRAVERSE	1851	5	L	40.0	DUNDEE	2515	16	0	1	6	0	979	106,227	300	356	0	1	1
DAY	MONTCALM	1946	TRAVERSE	2900	2	L	43.0	DUNDEE	3387	1	0	1	0		0	3,095	30	1,031	(FIELD ABANDONED 1967)		
DEEP RIVER	ARENAC	1944	DUNDEE	2795	145	D	35.8	RICHFIELD	4258	106	0	3	41	12	86,770	26,173,534	1,060	24,692	7,635	0	7,635
													THE 41 WELLS INCLUDE 40 DUNDEE AND 1 TRAVERSE								
		1953	RICHFIELD	(CONSOLIDATED WITH STERLING DETROIT RIVER-RICHFIELD IN 1954)																	
DEERFIELD	MONROE	1920	TREMTON	2115	10	L	42.7	CAMBRIAN	3250	47	0	0	21	14	6,056	702,774	450	1,561	1	*15	16
DENNISON	OTTAWA	1963	TRAVERSE	1874	4	L	38.0	SALINA	3202	15	0	2	10	1	17,969	303,127	300	1,010	216	0	216
DIAMOND SPRINGS	ALLEGAN	1938	TRAVERSE	1461	3	L	41.0	SALINA	2651	56	0	0	8	0	4,297	999,218	420	2,379	160	1	161
		1958	SALINA	2389	21	D				3	0	0	3	0	3,503	49,651	30	1,655	0	*40	40
DORR	ALLEGAN	1938	TRAVERSE	1617	4	L	41.0	NIAGARAN	3319	41	0	0	4	0	1,046	416,334	410	1,015	0	17	17
		1955	DETROIT RIVER	2082	6	D	38.0			14	0	0	4	0	1,772	70,214	280	251	16	7	23
		1956	SALINA	2922	7	D	17.0			18	0	0	12	1	8,724	280,351	540	519	46	15	61
DOUGLASS	MONTCALM	1945	DUNDEE	3400	2	L	47.1	DUNDEE	3458	6	0	0	1	0	1,095	245,023	120	2,042	175	0	175
DUNNINGVILLE	ALLEGAN	1950	TRAVERSE	1435	3	L	38.0	TRAVERSE	1438	5	0	0	1	0	748	118,477	50	2,369	40	0	40
DWIGHT	HURON	1945	DETROIT RIVER	2862	4	L	36.2	SYLVANIA	3290	1	0	0	1	0	1,601	38,178	40	954	2	0	2
EAST NORWICH	MISSAUKEE-ROSCOMMON	1942	RICHFIELD	4390	14	D	40.9	BASS ISLANDS		109	0	0	76	7	213,620	7,607,916	4,360	1,745	0	*143	143
													THE 76 WELLS INCLUDE 70 RICHFIELD AND 6 SOUR ZONE								
EDEN	MASON	1948	TRAVERSE	1679	3	L	34.5	CAMBRIAN	7249	10	0	1	5	4			90		70	0	70
		1948	DUNDEE	2240	2	L	45.3			38	0	2	28	14			380		1,228	0	1,228
		1948	REED CITY	2345	8	D	42.8			5	1RM	0	2	1	20,394	2,890,301	40	5,667	3	0	3
EDENVILLE	MIDLAND	1938	DUNDEE	3790	8	L	41.0	DUNDEE	3962	36	0	1	1	0	923	1,363,099	370	3,684	10	0	10
EDMORE	MONTCALM	1933	TRAVERSE	3102	4	L	43.2	DUNDEE	3613	35	0	14	15	2	16,479	1,321,861	500	2,643	725	0	725
EDWARDS	OGEMAW	1951	DUNDEE	3362	10	L		SYLVANIA-BOIS BLANC	5260	3	1	0	2	0	10,173	16,320	50	326	160	0	160
ELDRIDGE	OCEANA	1961	TRAVERSE	2112	2	L	39.4	REED CITY	2725	19	0	0	16	6	8,098	409,193	380	1,077	1,793	0	1,793
ELMWOOD	TUSCOLA	1945	DUNDEE	2740	8	L	31.3	BOIS BLANC	3945	10	0	0	7	2	3,128	67,982	90	754	19	0	19
ENTERPRISE	MISSAUKEE-ROSCOMMON	1943	RICHFIELD	4405	15	D	41.8	RICHFIELD	4625	32	0	2	20	0	71,894	2,082,416	1,280	1,627	50	0	50
ENTRICAN	MONTCALM	1966	TRAVERSE	2870	4	L		DUNDEE	3426	1	0	0	1	0			40		0	2	2
		1967	DUNDEE	3312	2	D				1	1	0	1	0	2,044	2,111	40	26	400	0	400
ESSEXVILLE	BAY	1944	DUNDEE	2835	17	L	35.3	SYLVANIA	4130	50	0	0	41	0	53,766	3,189,487	1,730	1,844	109	0	109
EVART	OSCEOLA	1942	DUNDEE	3755	6	L	46.3	SYLVANIA	5292	29	0	5	3	0	5,243	3,801,127	1,100	3,455	650	0	650
EXCELSIOR	KALKASKA	1950	TRAVERSE	2003	2	L	33.4	TRAVERSE	2136	1	0	0	1	0	408	10,174	10	1,017	0	0	0
FERRY	OCEANA	1960	TRAVERSE	1949	2	L	41.0	REED CITY	2581	14	0	0	4	4	0	164,263	280	587			
FILLMORE	ALLEGAN	1940	TRAVERSE	1516	2.7	L	41.1	SALINA	3045	63	0	0	11	0	4,701	958,964	770	1,245	87	4	91
FORK	MECOSTA	1942	DUNDEE	3845	8	L	49.0	BOIS BLANC	5294	64	0	0	4	0	2,711	7,774,234	2,700	2,879	2,180	0	2,180
		1945	RICHFIELD	(REFER TO ABANDONED FIELDS)																	

TABLE 4. MICHIGAN OIL FIELDS Continued (4-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE: DEPTH IN FEET	PAY ZONE: THICKNESS AND LITHOLOGY		PAY ZONE: OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS: TO END 1967	COMP. IN 1967	ABAND. IN 1967	PRODUCING AT END 1967	SHUT IN OR SHUT DOWN	OIL PRODUCTION IN BARRELS: PRODUCED IN 1967	CUMULATIVE THROUGH 1967	DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY: DISPOSAL SUBSURFACE	DISPOSAL SURFACE	TOTAL PRODUCTION
FORK, NORTH	OSCEOLA	1951	DUNDEE	3788	3	D	45.8	DUNDEE	3865	6	0	0	1	1	0	153,661	120	1,281				
FREEMAN-REDDING	CLARE	1938	DUNDEE	3885	19	L	44.4	SYLVANIA	5462	170	0	2	19	2	29,576	16,495,883	2,800	5,891	5,225	100	5,325
GENEVA	MIDLAND (REACTIVATED)	1967	DUNDEE	3671	2	L				8	1	0	1	0	459	459			0	7	7
GENEVA	VAN BUREN	1940	TRAVERSE	1042	2	L	31.5	TRENTON	2950	77	0	0	1	1	0	495,063	750	660			
GIBSON, SEC. 20	BAY	1951	DUNDEE	3097	11	L		DETROIT RIVER	4343	3	0	0	3	0	1,347	26,507	30	883	0	0	0
GILBERT LAKE	OCEANA	1956	TRAVERSE	2032	8	L	42.5	REED CITY	2711	3	0	0	1	1	207	50,733	30	1,691			
GILMORE	ISABELLA	1955	DUNDEE	3803	3	L	48.6	DUNDEE	3813	12	0	2	6	0	10,048	368,488	120	3070	1,875	0	1,875
GOODWELL	NEWAYGO	1943	TRAVERSE	2760	12	L	43.0	BASS ISLANDS	4342	31	0	0	2	0	3,567	1,106,309	1,240	892	5	4	9
GRANT, SEC. 29	HURON	1953	DETROIT RIVER	3358	8	D	38.8	BOIS BLANC	3918	3	0	0	3	0	1,064	16,991	120	142	0	1	1
GREEN OAK	LIVINGSTON	1967	TRENTON-BLACK RIVER					BLACK RIVER	5560	1	1	0	1	0	699	699	40	17	0	3	3
GROUT	GLADWIN	1956	RICHFIELD	5039	10	D	41.7	DETROIT RIVER	5240	17	0	0	13	1	91,821	1,237,851	680	1,820	65	3	68
		1940	DUNDEE	(REFER TO ABANDONED FIELDS)																	
		1958	DETROIT RIVER SZ	(REFER TO ABANDONED FIELDS)																	
HAMILTON	CLARE	1952	RICHFIELD	5145	12	D	42.2	RICHFIELD	5395	45	0	0	28	2	343,358	4,109,053	1,800	2,283	672	0	672
		1940	DUNDEE	(REFER TO ABANDONED FIELDS)																	
HANOVER	JACKSON	1959	TRENTON-BLACK RIVER	6012	120+	D	43.0	PRAIRIE DU CHIEN	4604	10	0	0	10	2	151,661	1,087,950	180	6,044	650	0	650
HARDY DAM	MECOSTA	1966	SILED CITY	3351	5	D	44.8	DETROIT RIVER	3482	22	11	0	22	0	264,693	331,387	880	376	685	3	688
HARRISON	CLARE	1945	DUNDEE	4190	13	L	39.7	SYLVANIA	5633	2	0	0	2	0	2,912	142,098	80	1,776	0	*12	12
HEADQUARTERS	CLARE-ROSCOMMON	1941	TRAVERSE	3356	5	L	42.3	BOIS BLANC	5929	47	0	0	5	2			1,400		450	0	450
		1958	DUNDEE	3899	12		39.9			1	0	0	1	0			10		0	1	1
		1942	DETROIT RIVER SZ	4946	13	D	43.7			)											
		1952	RICHFIELD	5147	23	D	42.6			) 60	0	0	54	8	81,833	9,961,400	2,320	2,671	0	12	12
										THE 54 WELLS INCLUDE 16 RICHFIELD, 26 SOUR ZONE AND 12 RICHFIELD & SOUR ZONE											
HEATH	ALLEGAN	1948	TRAVERSE	1498	2	L	38.0	SALINA	2716	25	0	3	5	0	1,432	203,075	270	752	0	7	7
HESSEN	ST. CLAIR	1965	NIAGARAN	2499	261	D	43	NIAGARAN	2887	(DOMINANTLY GAS RESERVOIR PRODUCING OIL)					16,016	29,199					
HILLIARDS	ALLEGAN	1960	SALINA	GAS RESERVOIR PRODUCING OIL											872	7,473					
HOME, SEC. 26	MONTCALM	1964	TRAVERSE	3096	10	L	45.3	REED CITY	3618	1	0	0	1	0	295	1,031	10	103	0	1	1
HOPE	BARRY	1939	TRAVERSE	1869	3	L	37.6	PRAIRIE DU CHIEN	4944	66	0	3	37	1	9,957	581,946	650	895	0	5	5
HOPKINS, SOUTH	ALLEGAN	1948	TRAVERSE	1538	3	L	38.0	TRAVERSE	1611	35	0	0	2	0	667	266,047	330	806	0	3	3
HOPKINS, WEST	ALLEGAN	1956	SALINA	2755	7	D	17.9	CLINTON	3140	1	0	0	1	1	0	1,849	20				
HUBER	NEWAYGO	1955	TRAVERSE	2109	2	L	41.3	DETROIT RIVER	3400	13	0	0	6	1	2,985	543,550	260	2,091	1,320	0	1,320
ISABELLA	ISABELLA	1948	DUNDEE	3783	9	D	46.9	DETROIT RIVER	3993	20	0	1	1	0	592	822,376	320	2,570	0	0	0
JEFFERSON	CASS	1961	TRAVERSE	710	3	L	32.0	PRAIRIE DU CHIEN	2603	20	0	0	7	7	3,082	99,212	400	248			
JEROME	MIDLAND	1947	DUNDEE	3743	10	L	39.0	DETROIT RIVER	4001	12	0	0	3	1	2,738	226,642	260	872	0	1	1
JOHNSTOWN	BARRY	1951	TRAVERSE	1870	2	L	37.0	TRAVERSE	1899	5	0	0	2	0	1,050	26,342	50	527	0	0	0
KAWKAWLIN	BAY	1938	DUNDEE	2830	45	L	35.0	ST. PETER Ss.	10,477	320	0	0	297	7			6,400		611	25	636
		1939	DETROIT RIVER	3515	5	D	42.0			7	0	0	6	1			280		0	0	0
		1941	BEREA	1505	4	S	38.0			4	0	0	4	0	247,959	13,488,304	40	2,007	0	0	0
KIMBALL LAKE	NEWAYGO	1947	TRAVERSE	2332	6	L	43.0	ST. PETER Ss.	6689	106	0	0	3	0			2,120		0	*1,680	1,680
		1955	REED CITY	2852	37	?	39.2			2	0	0	1	0	867	6,220,268	20	2,907	0	0	0
LAKEFIELD	SAGINAW	1937	DUNDEE	3185	12	L	39.0	DUNDEE	3197	1	0	0	1	0	636	25,273	10	2,527	0	0	0
LAKETON	MUSKEGON	1965	TRAVERSE	1698	4	L	41.4	REED CITY	2199	7	3	0	7	1	63,145	87,721	140	626	60	0	60
LAKEVIEW	MONTCALM	1961	TRAVERSE	2941	4	L	42.5	REED CITY	3495	2	0	0	2	0	456	6,522	20	326	0	0	0

TABLE 4. MICHIGAN OIL FIELDS Continued (5-8)

LAKE GEORGE	CLARE	1954	DUNDEE	3968	2	L	43.8	DUNDEE	3997	10	0	0	7	4	5,926	342,437	100	3,424	225	0	225
LAWTON	VAN BUREN	1939	TRAVERSE	1140	1	L	37.5	TRENTON	2775	65	0	0	11	3	1,220	205,949	650	316	13	3	16
LEATON	ISABELLA	1929	DUNDEE	3657	7.5	L	43.0	DETROIT RIVER	4390	40	0	0	2	0	4,478	1,743,198	500	3,486	125	0	125
LEROY	OSCEOLA	1965	REED CITY	3796	4	D		REED CITY	3800	2	0	0	2	0	5,517	14,033	80	175	0	0	0
LINCOLN, SEC. 18	ARENAC	1957	TRAVERSE	2717	1	L		DUNDEE	3062	2	0	0	2	0	COMBINED WITH SEC. 31 PRODUCTION		20		0	0	0
LINCOLN, SEC. 31	ARENAC	1963	DUNDEE	2942	10	D	34.9	DUNDEE	2986	1	0	0	1	1	160	2,226	10	223			
LUCHT	BAY	1949	TRAVERSE	2230	3	L	37.2	DUNDEE	3240	5	0	0	1	0	876	190,110	50	3,802	0	0	0
LUTHER	LAKE	1965	TRAVERSE	2565	2	L	42.0	REED CITY	3362	1	0	0	1	0	1,904	26,510	20	1,325	120	0	120
McBAIN	MISSAUKEE	1959	DUNDEE	3969	15	L	45.0	DUNDEE	3973	24	0	0	23	1	144,257	2,454,621	920	2,668	6,229	1	6,300
MACON CREEK	LENAWEE	1961	TRENTON-BLACK RIVER	2548	36+	D		TRENTON-BLACK RIVER	3303	1	0	0	1	0	0	629	40	16	0	0	0
MARATHON	LAPEER	1955	BEREA	1449	18	S		BEREA	1467	4	0	0	4	4	0	186	40	5			
MARINE CITY	ST. CLAIR	1955	SALINA-NIAGARAN	2176	21	D	38.0	CLINTON	2428	18	0	0	14	3	27,233	250,293	660	379	82	0	82
MARINE CITY, SOUTH	ST. CLAIR	1962	SALINA-NIAGARAN	2100	4	D	38.7	NIAGARAN	2251	10	1	0	9	2	14,001	65,600	400	164	3	1	4
MARSAC CREEK	ST. CLAIR	1965	SALINA-NIAGARAN							DOMINANTLY A GAS RESERVOIR PRODUCING SOME OIL					1,466	1,466					
MEDINA	LENAWEE	1961	TRENTON-BLACK RIVER	2921	18	D	40	PRAIRIE DU CHIEN	3487	1	0	0	1	1	0	4,324	40	108			
MILLS, SEC. 1	MIDLAND	1957	DUNDEE	3450	2			DUNDEE	3463	1	0	0	1	0	451	7,253	10	725	0	0	0
MINERAL SPRINGS	OSCEOLA	1951	DUNDEE	3854	7	D	44.5	DETROIT RIVER	3963	12	0	1	2	0	2,011	297,016	240	1,237	3	2	5
MIO	OGEMAW-OSCODA	1946	RICHFIELD	4219	6	D	32.9	CLINTON	8544	4	0	0	2	0	1,703	49,478	160	309	0	0	0
MOFFATT, SEC. 34	ARENAC	1964	TRAVERSE	2100	4	D		DUNDEE	3027	1	0	0	1	1	0	357	10	36			
		1953	DUNDEE	(REFER TO ABANDONED FIELDS)																	
MONTEREY	ALLEGAN	1938	TRAVERSE	1618	3	L	37.6	CINCINNATIAN	3266	99	0	0	11	0	3,178	1,000,622	1,030	971	0	4	4
MT. CLEMENS	MACOMB	1961	SALINA	2590	18	D		CAMBRIAN ?	4695	CONVERTED TO DOMESTIC GAS WELL, 1967					0	65	10	7			
MT. FOREST	BAY	1947	DUNDEE	3025	9	D	34.1	RICHFIELD	4305	37	0	0	26	1			960		0	7	7
		1952	TRAVERSE	2124 2224	2 3	L L	36.2			4	0	0	2	0	12,590	824,825	80	793	22	0	22
MT. PLEASANT	ISABELLA - MIDLAND	1928	DUNDEE	3545	15	L	41.8	SYLVANIA	4821	485	0	1	143	13	95,831	27,188,681	5,710	4,761	772	48	820
													THE 143 WELLS INCLUDE 139 DUNDEE, 1 TRAVERSE AND 3 DUNDEE & TRAVERSE								
MUSKEGON	MUSKEGON	1928	TRAVERSE & DUNDEE	1700	3.5	L	37.4	ST. PETER	4754	?	0	4	15	1	4,271	6,999,504	3,170	2,208	0	*211	211
NELLSVILLE	ROSCOMMON	1956	RICHFIELD	4932	17		42.2	DETROIT RIVER	4165	1	0	1	0				40		(FIELD ABANDONED 1967)		
		1957	DUNDEE	3710	6		40.3			1	0	1	0		969	27,440	10	549	(FIELD ABANDONED 1967)		
NEW LOTHROP	SHIAWASSEE-GENESEE	1967	BEREA	1623	4	S	46	SYLVANIA	3494	4	4	0	4	0	3,838	3,838	80	48	0	1	1
NORTHVILLE	WASHTENAW-WAYNE-OAKLAND	1954	TRENTON-BLACK RIVER	4395	2+	D	39.8	CAMBRO-ORDOVICIAN	5850												
			DOMINANTLY A GAS RESERVOIR PRODUCING SOME OIL - REFER TO GAS FIELDS																		
		1960	NIAGARAN	3515	25	D	42.5								40,430	957,938	2,835	338	0	*190	190
OTISVILLE	GENESEE - TUSCOLA	1941	TRAVERSE	(REFER TO ABANDONED FIELDS)																	
		1944	DUNDEE	2450	3	L	37.0	DUNDEE	2674	5	0	0	2	0			40		1	0	1
		1945	BEREA	1500	3	S	35.5			9	0	0	5	2	2,219	104,204	110	695	8	0	8
OTTO, SEC. 32	OCEANA	1950	"BEREA"	1445	1	L		TRAVERSE		1	0	0	1	0	109	4,188	10	419	0	0	0
OVERISEL	ALLEGAN	1938	TRAVERSE	1478	3	L	42.1	TRENTON	4060	164	0	0	28	3	13,088	2,905,213	1,770	1,641	53	16	69
OXBOW	MASON	1958	TRAVERSE	1652	1	L	35.4	TRAVERSE	1660	4	0	0	4	1	2,614	81,529	40	2,038	67	0	67
PARIS	MECOSTA	1949	TRAVERSE	2890	10	D	43.6	REED CITY	3545	22	0	3	13	0	14,978	1,192,019	440	2,709	707	11	718
PAW PAW	VAN BUREN	1963	TRAVERSE	1096	2	L	41.4	TRAVERSE	1098	8	0	1	3	1	466	19,034	160	119	5	0	5
PAW PAW, SEC. 33	VAN BUREN	1964	TRAVERSE	1028	1	L	38.0	TRAVERSE	1032	1	0	0	1	1	0	0	10				
PEACOCK, SEC. 7	LAKE	1966	REED CITY	3001	4	D		REED CITY	3047	1	0	0	1	0	776	1,060	40	26	0	1	1
PEACOCK, SEC. 9	LAKE	1966	TRAVERSE	2293	1	L	34.0	TRAVERSE	2293	1	0	0	1	0	1,218	2,130	40	53	6	0	6
PEACOCK, SEC. 17	LAKE	1967	TRAVERSE	2292	2	L		TRAVERSE	2294	1	1	0	1	0	0	0	40		0	0	0
PECKS LAKE	OSCEOLA	1967	DUNDEE	3866	2	L		REED CITY	3854	1	1	0	1	1	2,885	2,885	40	72			

TABLE 4. MICHIGAN OIL FIELDS Continued (6-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE: DEPTH IN FEET	PAY ZONE: THICKNESS AND LITHOLOGY		PAY ZONE: OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS: TO END 1967	COMP. IN 1967	ABAND. IN 1967	PRODUCING AT END 1967	SHUT IN OR SHUT DOWN	OIL PRODUCTION IN BARRELS: PRODUCED IN 1967	CUMULATIVE THROUGH 1967	DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY: DISPOSAL SUBSURFACE	DISPOSAL SURFACE	TOTAL PRODUCTION
PENTWATER	OCEANA - MASON	1948	DUNDEE	2088	10	D	43.1	PRAIRIE DU CHIEN	5383								2,000				
		1948	TRAVERSE	1585	8	L	40.4			143	0	1	58	17	48,520	6,517,832	1,400	1,917	2,293	1	2,294
										THE 58 WELLS INCLUDE 26 TRAVERSE, 13 DUNDEE AND 19 TRAVERSE & DUNDEE											
PETERS	ST. CLAIR	1957	SALINA-NIAGARAN	2615	2+	D	39.0	CLINTON	2862	89	1	0	84	9	288,195	3,635,769	1,780	2042	572	7	579
PETERS, EAST	ST. CLAIR	1961	SALINA-NIAGARAN	2590	17	D	41.6	CLINTON	2134	9	0	0	8	0	COMBINED WITH PETERS		360	1,699	112	0	112
PINCONNING	BAY	1944	DUNDEE	2898	7	D	36.2	DETROIT RIVER	3790	12	0	0	2	0	5,029	851,195	100	8,511	200	1	201
		1958	TRAVERSE	(REFER TO ABANDONED FIELDS)																	
POLKTON	OTTAWA	1942	TRAVERSE	1878	2	L	37.8	DUNDEE	2351	13	0	0	6	1	3,492	57,883	170	340	0	2	2
PORTER	MIDLAND	1933	DUNDEE	3415	12	L	40.6	BLACK RIVER	9519	529	0	2	133	20	151,216	48,730,967	6,690	7,284	8,175	1	8,176
										THE 133 WELLS INCLUDE 129 DUNDEE, 1 TRAVERSE AND 3 DUNDEE & TRAVERSE											
PROSPER	MISSAUKEE	1942	DUNDEE	3837	4	L	43.2	RICHFIELD	5254	13	0	0	6	0	14,940	1,693,332	520	3,256	2,688	0	2,688
		1954	RICHFIELD	(REFER TO ABANDONED FIELDS)																	
PROSPER, SOUTH	MISSAUKEE	1967	DUNDEE	3798	8	D		DUNDEE	3808	3	3	0	3	0	5,969	5,969	120	50	0	0	0
PULLMAN, EAST	ALLEGAN	1949	TRAVERSE	1131	2	L	39.0	TRENTON	3020	25	0	0	13	0	4,047	367,222	250	1,469	202	4	206
PUTTYGUT	ST. CLAIR	1960	SALINA-NIAGARAN	(REFER TO GAS FIELDS--OIL PRODUCTION COMBINED WITH ADAIR)																	
RAVENNA	MUSKEGON	1952	TRAVERSE	1842	15	L		DETROIT RIVER	2601	37	0	0	7	2	1,594	457,942	730	627	0	6	6
RAY	MACOMB	1963	SALINA-NIAGARAN	(GAS FIELD PRODUCING SMALL QUANTITY OF OIL)						LAST OIL PRODUCED 1966 (135 BBLS) CUMULATIVE - (1,689 BBLS) ADDED TO CUMULATIVE MISCELLANEOUS END 1967												
REED CITY	LAKE-OSCEOLA	1940	DUNDEE	3490	3	L	46.3	ST. PETER Ss.	8917												
		1941	REED CITY	3585	7	D	42.8			COMBINED SECONDARY RECOVERY AND GAS STORAGE OPERATION									6,039	0	6,039
		1941	TRAVERSE	2925	5	L	43.7										5,320				
		1954	RICHFIELD	4633	12	SL	45.8	)													
		1955	DETROIT RIVER SZ	4184	73	DL	48.2	)		45	0	5	32	2	429,135	44,750,351	1,800	6,285	20	10	30
REED CITY, EAST	OSCEOLA	1947	TRAVERSE	3106	1	L	41.2	DETROIT RIVER	3840	8	0	0	4	2	9,511	362,876	80	4,535	375	0	375
REEMAN	NEWAYGO	1958	TRAVERSE	2099	1	L		TRAVERSE	2100	3	0	1	0		108	44,886	30	1,496	(FIELD ABANDONED 1967)		
REYNOLDS	MONTCALM- MECOSTA	1954	REED CITY	3343	2	D	44.3	BASS ISLANDS	4300	53	0	7	25	4			2,100		1,497	*72	1,569
		1955	TRAVERSE	2787	4	D	39.8			16	0	1	7	0	80,391	4,284,014	110	1,938	756	*70	826
RICH	LAPEER	1962	DETROIT RIVER SZ	3028	5		33.9	SYLVANIA	3267	11	2	0	11	1	70,577	190,203	440	432	9	*51	60
RIVERSIDE	MISSAUKEE	1942	DUNDEE	3944	3	L	44.5	DUNDEE	3953	3	0	0	3	0	3,546	110,205	100	1,102	160	0	160
		1961	TRAVERSE	3220	2	L	42.6			1	0	0	1	0	1,619	12,436	10	1,243	0	*7	7
RIVERTON	MASON	1957	TRAVERSE	1650	6	L	38.5	DUNDEE	2317	19	0	0	3	0	1,557	239,294	190	1,259	110	0	110
RIVERTON, SEC. 21	MASON	1964	TRAVERSE	1683	4	L	38.2	DUNDEE	2290	3	0	0	3	0	2,979	8,095	30	270	0	12	12
ROBINSON, SEC. 3	OTTAWA	1956	DUNDEE	2107	7	L		DUNDEE	2210	2	0	0	1	0	605	9,665	20	483	0	3	3
ROCKFORD	KENT	1945	TRAVERSE	2204	3	L	44.0	DETROIT RIVER	2850	23	0	1	5	1	6,119	519,512	210	2,474	620	0	620
ROSEBUSH	ISABELLA	1933	DUNDEE	3690	6	L	42.0	DETROIT RIVER	4322	40	0	0	32	7	22,958	2,011,440	900	2,234	221	1	222
ROSE CITY	OGEMAW	1942	RICHFIELD	4125	9	D	41.2	CAMBRIAN	12,996	131	3	1	82	7	106,022	5,071,840	5,120	990	0	68	68
ROSE LAKE	OSCEOLA	1943	TRAVERSE	3140	5	L	45.5	DETROIT RIVER	3990	18	0	0	6	0	24,108	1,716,028	720	2,383	500	8	508
SAGINAW	SAGINAW	1925	BEREA	1825	16	S	46.1	SYLVANIA	3920	?	0	0	15	3	5,518	1,654,640	1,500	1,103	0	10	10
SALEM	ALLEGAN- OTTAWA	1937	TRAVERSE	1583	8	L	38.3	TRENTON	4347	337	0	1	99	4	43,336	8,945,902	3,390	2,639	170	21	191
			SALINA	REFER TO GAS STORAGE RESERVOIRS--PRODUCES SMALL AMOUNT OF OIL--INCLUDED AS MISCELLANEOUS PRODUCTION IN ABANDONED TOTALS																	
SANFORD	MIDLAND	1951	DUNDEE	3755	3	L	42.6	DETROIT RIVER	4811												
		1959	TRAVERSE	3125	2	L				13	0	0	13	1	5,218	173,725	260	668			
										THE 13 WELLS INCLUDE 10 DUNDEE, 1 TRAVERSE AND 2 DUNDEE & TRAVERSE											
SAUBLE	LAKE	1942	TRAVERSE	2111	2	L	35.6	TRAVERSE	2156	5	0	0	2	0	144	143,968	200	720	1,000	0	1,000

TABLE 4. MICHIGAN OIL FIELDS Continued (7-8)

SCOTTVILLE	MASON	1961	TRAVERSE	1646	3	L	34.6			17	0	3	8	1			340		680	0	680
		1962	REED CITY	2319	3	L	37.2	CINCINNATIAN	5129	11	2	0	10	0	42,657	432,425	220	772	10	0	10
SHELBY	OCEANA	1951	TRAVERSE	1743	3	L	43.0	DUNDEE	2234	20	0	0	6	0	2,024	225,870	350	645	60	0	60
SHERMAN	ISABELLA	1936	DUNDEE	3650	4	D	42.0	SYLVANIA	4994	88	0	0	5	1	6,990	4,709,660	1,020	4,617	315	0	315
SKEELS	CLARE-GLADWIN	1950	DUNDEE	3840	7	D	39.6	SYLVANIA	6016	5	0	0	4	1			50		120	0	120
		1955	TRAVERSE	3102	6	L	38.4			4	0	0	2	0					0	2	2
		1942	DETROIT RIVER SZ	4844	4	D	47.4										40				
		1953	RICHFIELD	5080	17	D	44.8			31	0	0	26	1	41,265	2,042,587	1,240	1,536	0	*11	11
										THE 26 WELLS INCLUDE 17 RICHFIELD, 5 SOUR ZONE AND 4 RICHFIELD & SOUR ZONE											
SPRINGPORT	JACKSON	1960	TRENTON-BLACK RIVER	4696	12+	D	46.5	PRAIRIE DU CHIEN	5250	2	0	0	2	1	1,667	2,687	80	33	25	0	25
ST. CHARLES	SAGINAW	1957	TRAVERSE	2305	3	L	51.6	TRAVERSE	2308	1	0	0	1		0	13,250	10	1,325	(FIELD ABANDONED 1967)		
ST. HELEN	ROSCOMMON	1941	RICHFIELD	4180	11	D	43.3	SALINA	5440	99	0	0	68	4	84,091	3,837,513	3,960	969	0	44	44
STANDISH	ARENAC	1948	RICHFIELD	4108	3	D	35.4	RICHFIELD	4210	9	0	3	0		192	147,062	360	408	(FIELD ABANDONED 1967)		
STANTON	MONTCALM	1951	TRAVERSE	2916	7	DL	43.0	DUNDEE	3492	17	1	0	11	1	23,845	890,056	320	2,781	505	0	505
STARRVILLE	ST. CLAIR	1967	NIAGARAN	2336	5	D		NIAGARAN	2396	1	1	0	1	0	7,168	7,168	40	179	0	0	0
STERLING	ARENAC	1947	DUNDEE	2872	17	L	33.6	RICHFIELD	4285	20	0	0	19	1			200		0	13	13
		1948	TRAVERSE	1970	5	L	36.2			22	0	0	16	0					3	8	11
		1950	RICHFIELD	5153	8	D	37.6														
		1952	DETROIT RIVER SZ	3918	5	D	41.1			41	0	0	36	4	78,826	2,027,250	1,600	1,126	0	3	3
										THE 36 WELLS INCLUDE 13 RICHFIELD, 13 SOUR ZONE AND 10 RICHFIELD & SOUR ZONE											
STONY LAKE	OCEANA	1946	TRAVERSE	1630	19	L	44.9	NIAGARAN	3827	78	0	4	15	3	15,052	7,501,185	1,540	4,871	2,602	1	2,603
		1949	BEREA	(REFER TO ABANDONED FIELDS)																	
SUMNER	GRATIOT	1953	TRAVERSE	2853	1	L	44.5	DUNDEE	3366	35	0	0	22	6	23,648	1,031,317	350	2,946	202	0	202
SYLVAN	OSCEOLA	1948	DUNDEE	3925	13.7	D	48.0	DUNDEE	4100	11	0	0	2	1	2,866	1,181,028	440	2,684	760	0	760
TEKONSHA	CALHOUN	1959	TRENTON	3553	?	DL	34.5	PRAIRIE DU CHIEN	4147	2	0	0	1	0	13,407	16,373	30	546	150	0	150
TRENT	MUSKEGON	1949	TRAVERSE	2039	1	L		TRAVERSE	2118	2	0	0	1	0	334	30,467	40	762	0	0	0
TROWBRIDGE	ALLEGAN	1937	TRAVERSE	1358	2	L	41.2	CINCINNATIAN	2952	162	0	1	11	0	3,947	504,965	1,840	274	126	7	133
VERNON	ISABELLA	1930	DUNDEE	3755	3	DL	38.6	BOIS BLANC	5118	78	0	2	3	0	6,271	5,024,540	890	5,645	2,500	0	2,500
VOGEL CENTER	MISSAUKEE	1966	DUNDEE	3892	3	L		DUNDEE	3895	2	1	0	2	1	10,947	19,366	40	484	250	0	250
WALKER	KENT-OTTAWA	1938	TRAVERSE	1872	8	L	36.0	ST. PETER Ss.	5222								8,560				
		1940	"BEREA"	1121	21	SL															
		1957	DETROIT RIVER	2132	12	D				783	0	8	436		162,678	16,042,736	10	1,871	15	94	109
										THE 436 WELLS INCLUDE 429 TRAVERSE, 6 BEREA, AND 1 DETROIT RIVER											
WAYLAND	ALLEGAN	1944	TRAVERSE	1799	6	L	36.0	TRENTON-BLACK RIVER	4400	54	0	0	3	1	6,957	260,564	530	492	0	2	2
		1960	SALINA	3132	12	D	28.0			31	3	1	30	1	139,979	888,275	1,240	716	0	15	15
WAYLAND, NORTH	ALLEGAN	1957	TRAVERSE	1696	7	L		TRAVERSE	1712	15	0	0	6	0	1,479	102,089	150	680	0	1	1
WEST BRANCH	OGEMAW	1933	TRAVERSE	(REFER TO ABANDONED FIELDS)																	
		1933	DUNDEE	2650	20	L	36.8	CAMBRO-ORDOVICIAN	11,012	275	0	0	174	2	83,889	8,504,972	2,750	3,091	353	58	411
		1951	DETROIT RIVER SZ	3585	9	D	38.9	)													
		1952	RICHFIELD	4127			33.0	)		63	0	0	62	1	95,872	2,492,907	2,520	989	0	7	7
										THE 62 WELLS INCLUDE 30 RICHFIELD, 27 SOUR ZONE AND 5 RICHFIELD & SOUR ZONE											
WILEY	MASON	1962	TRAVERSE	1663	5	L	39.9	ST. PETER Ss.	5890	17	0	1	13	1	26,694	373,210	360	1,036	445	0	445
WINFIELD	MONTCALM	1936	DUNDEE-REED CITY	3340	1	L	43.2	REED CITY	3500	8	0	0	2	0	1,873	107,722	120	898	0	*20	20
WINTERFIELD	CLARE	1940	TRAVERSE	3105	1	L		SYLVANIA	5273	8	0	0	6	1			200		0	3	3
		1940	DUNDEE	3794	3	L	44.2			37	0	1	4	0			740		1,508	0	1,508
		1942	RICHFIELD	5015	15	D				2	0	0	1	1	24,928	5,073,498	80	4,974			

TABLE 4. MICHIGAN OIL FIELDS Continued (8-8)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE DEPTH IN FEET	PAY ZONE THICKNESS AND LITHOLOGY		PAY ZONE OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS TO END 1967	NUMBER OF OIL WELLS COMP. IN 1967	NUMBER OF OIL WELLS ABAND. IN 1967	NUMBER OF OIL WELLS PRODUCING AT END 1967	NUMBER OF OIL WELLS SHUT IN OR SHUT DOWN	OIL PRODUCTION IN BARRELS PRODUCED IN 1967	OIL PRODUCTION IN BARRELS CUMULATIVE THROUGH 1967	DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY DISPOSAL SUBSURFACE	BRINE PRODUCTION BBLS./DAY DISPOSAL SURFACE	BRINE PRODUCTION BBLS./DAY TOTAL PRODUCTION
WISE	ISABELLA	1938	DUNDEE	3700	11	L	45.2	SYLVANIA	5202												
		1953	TRAVERSE	3090	31	L	43.0			79	0	1	24	1			1,640		2,031	0	2,031
													THE 24 WELLS INCLUDE 18 DUNDEE, 1 STRAY, 4 TRAVERSE & DUNDEE AND 1 DUNDEE & DETROIT RIVER								
		1955	DETROIT RIVER SZ	4415	48	DL	42.6			2	0	0	1	0	28,287	3,903,420	80	2,269	30	0	30
WOODVILLE	NEWAYGO	1943	TRAVERSE	2820	5	L	43.5	DETROIT RIVER	3534	10	0	0	10	1	6,756	522,904	350	1,494	50	10	60
WRIGHT	OTTAWA	1953	TRAVERSE	1920	1	L		DETROIT RIVER	2337	7	0	0	2	1			70		0	0	0
		1954	"BEREA"	1170	3	L				7	0	0	6	3	2,310	60,288	60	464	7	2	9
WYOMING PARK	KENT	1939	TRAVERSE	1870	6	L	39.0	DETROIT RIVER	2255	21	0	0	1	0	277	156,890	300	523	0	0	0
ZEELAND	OTTAWA	1942	TRAVERSE	1514	3	L	41.9	NIAGARAN	3052	21	0	1	0		0	310,085	400	775	(FIELD ABANDONED 1967)		
		1958	SALINA	(REFER TO ABANDONED FIELDS)																	
								TOTALS		9,604	70	117	4,273	378	13,664,185	547,772,272			140,985	*3,988	144,973

195 ACTIVE FIELDS AT THE END OF 1967

BEAVER CREEK FIELD WAS UNITIZED IN 1963 FOR SECONDARY RECOVERY PURPOSES. SEE PAGE 31 FOR ADDITIONAL DETAILS.

INCOMPLETE RECORD

13,664,185 BBLS. OIL FROM ACTIVE FIELDS 1967

547,772,272 - BBLS. CUMULATIVE PRODUCTION FROM ACTIVE FIELDS
4,167,006 - BBLS. CUMULATIVE PRODUCTION FROM ABANDONED FIELDS
551,939,278 - BBLS. OIL TOTAL CUMULATIVE PRODUCTION END 1967

ABOUT 3030 BARRELS BRINE USED ON COUNTY ROADS, LEASE ROADS, ETC. FOR DUST CONTROL.

FIELDS UTILIZING PRODUCED AND EXTRANEOUS FLUIDS
TABLE 5. IN PRIMARY-SECONDARY RECOVERY OPERATIONS

FIELD AND COUNTY		OPERATOR OR COMPANY	TYPE OF PROJECT	YEAR PROJECT STARTED	PAY ZONE FORM.	PAY ZONE THICK.	PAY ZONE DEPTH	DRILLED ACRES	INJECTION FLUIDS	SOURCE OF INJECTION FLUID	VOLUME OF INJECTED FLUID MCF GAS	VOLUME OF INJECTED FLUID BARRELS WATER	VOLUME OF INJECTED FLUID INJ. WELLS	CUMULATIVE VOLUME OF INJECTED FLUID MCF GAS	CUMULATIVE VOLUME OF INJECTED FLUID BARRELS WATER	PRODUCTION BARRELS OIL	PRODUCTION SALES MCF GAS	PRODUCTION WATER PRODUCED	PRODUCTION NO. WELLS	CUMULATIVE BARRELS OIL	CUMULATIVE SALES MCF GAS
BEAVER CREEK	CRAWFORD-KALKASKA	UNION OIL CO.	UNIT WTR. FLOOD		RICH.	20	4,160	3,960	FRESH WTR.	GLACIAL DRIFT		3,206,667	39		10,116,982	195,842	450,656	90,402	56	8,385,939	15,910,473
BEAVERTON, SOUTH	GLADWIN	SUN OIL CO.	UNIT, PILOT WTR.	1959	DD.	12	3,845	700	FRESH WTR.	GLACIAL DRIFT		158,959	4		1,370,714	22,034		86,742	19	1,586,499	
BEAVERTON, WEST	GLADWIN	PEAKE PET. CO.	UNIT WTR. FLOOD	1966	DD.		3,876	260	FRESH WTR.	GLACIAL DRIFT		89,105	3		89,105	9,821		985	4	134,166	
BUCKEYE, NORTH	GLADWIN	SUN OIL CO.	COOP. WTR. FLOOD	1948	DD.	14	3,615	3,020	FRESH WTR. & BRINE	GLACIAL DRIFT PROD. BRINES		171,738	3		2,237,070	115,428		718,824	50	18,816,668	9,834
EAST NORWICH	MISSAUKEE	SUN OIL CO.	P.M., GAS & WTR. UNIT	1947	RICH.	13	4,390	4,360	GAS & FRESH WTR.	GLACIAL DRIFT	Discontinued 1962	1,097,571	36	11,699,478	6,045,040	213,620	178,852	44,165	67	7,607,916	4,643,903
ENTERPRISE	MISSAUKEE	SUN OIL CO.	P.M., GAS & WTR.	1953	RICH.	15	4,405	1,280	GAS & FRESH WTR.	GLACIAL DRIFT	Discontinued 1961	467,492	13	1,419,641	2,199,925	71,894	55,387	17,387	20	2,082,416	625,666
GROUT	GLADWIN	SUN OIL CO.	UNIT, WTR. FLOOD	1960	RICH.	10	5,039	680	FRESH WTR.	GLACIAL DRIFT		160,591	3		1,459,638	91,821		24,156	12	1,237,851	
HAMILTON	CLARE	SUN OIL CO.	UNIT, WTR. FLOOD	1958	RICH.	12	5,145	1,800	FRESH WTR.	GLACIAL DRIFT		1,091,091	17		6,991,321	343,358	163,106	235,338	26	4,109,053	2,989,367
KAWKAWLIN	BAY	GULF OIL	UNIT, WTR. FLOOD	1953	DD.	45	2,830	6,400	FRESH WTR. & BRINE	GLACIAL DRIFT PROD. BRINES		472,454	10 Active		4,474,870	230,602		486,048	288	13,016,760	
PENTWATER	MASON-OCEANA	HUMBLE OIL	UNIT, WTR. FLOOD	1960	U. TRAV.	8	1,585	1,400	BRINE	PROD. BRINES		595,737	6		2,413,583	31,397	(Unit produced oil only)	821,304	23	4,923,853 (Unit only)	1,010,713
PENTWATER	MASON-OCEANA	HUMBLE OIL	UNIT, WTR. FLOOD	1960	DD.	10	2,088	2,000	BRINE	PROD. BRINES	Dundee wtr. injection discontinued 1963				1,464,892						
REED CITY	OSCEOLA	MICH. CONS.	UNIT, GAS STORAGE IN OIL RESERVOIR	1963	DD.-RC	10	3,585	5,320	PRODUCED BRINE EXTRANEOUS GAS	MC-GAS SYSTEM PROD. BRINES	6,015,207	1,639,314	9 wtr. 27,358,612 116 gas		N.A.	385,301		1,639,314	135	39,489,421	16,257,876
RICHMOND **	OSCEOLA	ISBRANDSTEN CO., INC.	UNIT, WTR. FLOOD	1965	D.R.(SZ)		4,184	1,132	FRESH WTR.	GLACIAL DRIFT		451,290	8		727,693	30,835 (1)	124,608	7,320	13	1,009,406 (1)	3,276,922
ROSE CITY	OGEMAW	MUSKEGON DEV. CO.	UNIT, WTR. FLOOD	1955	RICH.	9	4,125	4,440	FRESH WTR.	GLACIAL DRIFT		470,548	38		2,363,455	(2)37,526	262,654 (2)	13,542	63	(2)3,399,858 (3)	6,480,678
ST. HELEN	ROSCOMMON	SUN OIL CO.	UNIT, WTR. FLOOD	1958	RICH.	11	4,180	3,960	FRESH WTR.	GLACIAL DRIFT	Discontinued	584,668	25	3,151,610	3,761,093	84,091	426,636	14,274	64	3,837,513	8,416,879
WEST BRANCH	OGEMAW	MARATHON OIL CO.	UNIT, WTR. FLOOD	1966	DD.	20	2,650	2,730	BRINE	TRAV. BRINE		90,213	3		131,084	15,952		4,317	16	(4)589,771	

** RICHMOND UNIT
UNIT IN DETROIT RIVER ZONE OF THE REED CITY FIELD

TYPE OF PROJECT

B.D. & P.M. BRINE DISPOSAL AND PRESSURE MAINTENANCE
COOP. COOPERATIVE OPERATION OR ORGANIZATION
UNIT. UNITIZED OPERATION OR ORGANIZATION
PILOT PILOT PROJECT
WTR. WATER
WTR. FLOOD WATER FLOOD

333 INJECTION WELLS

NOTE: 116 WELLS LISTED AS INJ. IN REED CITY CAN BE UTILIZED AS EITHER INJECTION OR PRODUCING WELLS.

SOURCE OF INJECTION FLUID

M.C.-GAS SYSTEM MICHIGAN CONSOLIDATED GAS CO. DISTRIBUTION SYSTEM
PROD. BRINES PRODUCED BRINES

(1) GAS FIGURES INCLUDE RUNS FROM 8 D.R. WELLS OUTSIDE THE 18 WELL RICHMOND UNIT.

(2) UNIT OIL & GAS PRODUCTION ONLY

(3) CUMULATIVE GAS PRODUCTION REPRESENTS ENTIRE FIELD

(4) WEST BRANCH UNIT DATA REPRESENTS ONLY THE INITIAL PARTICIPATING AREA OF THE UNIT.

THIS CHART LISTS ONLY THE MORE IMPORTANT PRIMARY-SECONDARY RECOVERY OPERATIONS. SEE PREVIOUS ISSUES FOR OTHER PROJECTS DELETED FROM THIS CHART.

TABLE 6. LOCATION OF MICHIGAN OIL FIELDS (1-4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
ADAIR	ST. CLAIR	CHINA	4N - 16E	7
		CASCO	4N - 15E	12, 13
ADAMS	ARENAC	ADAMS	19N - 3E	21, 23, 24, 25, 26, 27, 34, 35, 36
		DEEP RIVER	19N - 4E	31
	BAY	GIBSON	18N - 3E	1, 2
ADAMS, NORTH	ARENAC	ADAMS	19N - 3E	11, 14, 15, 22, 23, 27
AKRON	TUSCOLA	AKRON	14N - 8E	19, 20, 21, 28, 29, 30
		WISNER	14N - 7E	22, 23, 24, 25, 26
ALBION-PULASKI-SCIPIO TREND				
	CALHOUN	LEE	1S - 5W	17, 22, 23, 26
		SHERIDAN	2S - 4W	17, 18, 19, 20, 21, 28, 33
		ALBION	3S - 4W	3, 4, 10, 11, 14, 15, 22, 23, 26, 27, 35, 36
		HOMER	4S - 4W	1, 12
	JACKSON	PULASKI	4S - 3W	6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 32, 33, 34
	HILLSDALE	SCIPIO	5S - 3W	3, 4, 10, 11, 12, 13, 14, 15, 23, 24, 25, 26
		FAYETTE	5S - 3W	35, 36
		MOSCOW	5S - 2W	19, 31, 32
		ADAMS	6S - 2W	3, 4, 5, 6, 8, 10, 16, 17
ARBELA	TUSCOLA	ARBELA	10N - 7E	28, 33, 34
ASHTON	OSCEOLA	LINCOLN	18N - 10W	5
ATLANTA	MONTMORENCY	AVERY	30N - 3E	10, 15
AU GRES	ARENAC	AU GRES	19N - 6E	2, 3, 10, 11
BARD	GLADWIN	BEAVERTON	17N - 2W	5, 6
		GROUT	18N - 2W	31, 32
BEAVER CREEK	CRAWFORD	BEAVER CREEK	25N - 4W	7, 8, 16, 17, 18, 19, 20, 21, 27, 28, 29
	KALKASKA	GARFIELD	25N - 5W	12, 13
BEAVERTON	GLADWIN	BEAVERTON	17N - 2W	2, 3, 11, 13
BEAVERTON, SOUTH	GLADWIN	BEAVERTON	17N - 2W	26, 27, 35, 36
	GLADWIN	TOBACCO	17N - 1W	31
BEAVERTON, WEST	GLADWIN	BEAVERTON	17N - 2W	19
BELLE RIVER MILLS	ST. CLAIR	CHINA	4N - 16E	DEVELOPED GAS STORAGE RESERVOIR
BELLY ACHERS	MONTCALM	HOME	12N - 6W	11, 14
BENTLEY	GLADWIN	BENTLEY	17N - 2E	16, 17, 18, 19, 20, 21, 27, 28, 29, 34, 35
BERLIN	ST. CLAIR	BERLIN	6N - 13E	32, 33
BEVENS LAKE	MECOSTA	GREEN	16N - 10W	13
BIG HAND	ST. CLAIR	COLUMBUS	5N - 15E	24, 25
BILLINGS	GLADWIN	BILLINGS	17N - 1E	2, 3, 10, 11
BILLINGS, SOUTH	GLADWIN	BILLINGS	17N - 1E	12, 13
		BENTLEY	17N - 2E	18
BIRCH BELA	SAGINAW	BIRCH RUN	10N - 6E	25, 36
	TUSCOLA	ARBELA	10N - 7E	30, 31, 32
BIRCH RUN (DUNDEE)	SAGINAW	BIRCH RUN	10N - 6E	19, 20, 29
		TAYMOUTH	10N - 5E	13

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
BLOOMER	MONTCALM	BLOOMER	9N - 5W	31, 32
		BUSHNELL	9N - 6W	36
	IONIA	NORTH PLAINS	8N - 5W	5, 6
BLOOMINGDALE	VAN BUREN	BLOOMINGDALE	1S - 14W	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 24
		COLUMBIA	1S - 15W	1, 2, 10, 11, 12, 13, 14, 15, 16, 23, 24
		PINE GROVE	1S - 13W	18
BOYD	ST. CLAIR	CASCO	4N - 15E	29, 31, 32, W½ 28 & W½ 33
		IRA	3N - 15E	5, 6
BRINTON	ISABELLA	COLDWATER	16N - 6W	5
BUCKEYE, NORTH	GLADWIN	BUCKEYE	18N - 1W	1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15
		HAY	18N - 1E	15, 16, 21, 22
BUCKEYE, SOUTH	GLADWIN	BUCKEYE	18N - 1W	22, 23, 24, 25, 26, 27, 35, 36
		HAY	18N - 1E	33
		BILLINGS	17N - 1E	4, 9, 10
		TOBACCO	17N - 1W	1
BURDELL	OSCEOLA	BURDELL	20N - 10W	19
BUTMAN	GLADWIN	BUTMAN	20N - 1W	11, 12, 13, 14
CAPAC	ST. CLAIR	MUSSEY	7N - 13E	GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL
		LYNN	8N - 13E	
CAREY LAKE	NEWAYGO	GOODWELL	14N - 11W	26
CATO	MONTCALM	CATO	12N - 8W	3, 4, 6, 8, 9
CEDAR	OSCEOLA	CEDAR	18N - 9W	10, 27, 28, 33, 34
CHASE	LAKE	CHASE	17N - 11W	19, 29
CHESTERFIELD	MACOMB	CHESTERFIELD	3N - 14E	29 (ALSO SEE GAS FIELDS)
CHINA, SEC. 12	ST. CLAIR	CHINA	4N - 16E	12
CHINA, SOUTH	ST. CLAIR	COTTRELLVILLE	3N - 16E	4 (ALSO SEE GAS FIELDS)
CLARE, CITY	CLARE	GRANT	17N - 4W	24, 35, 36
	ISABELLA	WISE	16N - 3W	6
CLAYTON	ARENAC	CLAYTON	20N - 4E	3, 4, 5, 8, 9, 10, 11
	OGEMAW	RICHLAND	21N - 4E	31
		MILLS	21N - 3E	36
COLDWATER	ISABELLA	COLDWATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
		SHERMAN	15N - 6W	5, 6
COLFAX	MECOSTA	COLFAX	15N - 9W	5
COTTRELLVILLE	ST. CLAIR	CHINA	4N - 16E	31
		COTTRELLVILLE	3N - 16E	6, 7, 8 (ALSO SEE GAS FIELDS)
		IRA	3N - 15E	SE¼ 1, NE¼ 12
CRANBERRY LAKE	CLARE	WINTERFIELD	20N - 6W	1, 2, 11, 12
CRANBERRY LAKE, EAST	CLARE	SUMMERFIELD	20N - 5W	7, 8, 17
CRYSTAL	MONTCALM	CRYSTAL	10N - 5W	1, 2, 3, 4, 10, 11, 12, 13
		FERRIS	11N - 5W	26, 34, 35, 36
CRYSTAL VALLEY	OCEANA	CRYSTAL	16N - 16W	9, 10, 11, 14, 15, 16
CURRIE	ISABELLA	VERNON	16N - 4W	5, 8

TABLE 6. LOCATION OF MICHIGAN OIL FIELDS Continued (2-4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
DALTON	MUSKEGON	DALTON	11N - 16W	10, 11, 15
DAY (TRAVERSE)	MONTCALM	DAY	11N - 6W	36
DEEP RIVER (DUNDEE)	ARENAC	DEEP RIVER	19N - 4E	6, 7, 8, 9, 14, 15, 16, 23, 24
DEERFIELD	MONROE	DUNDEE	6S - 6E	19, 29, 30
		SUMMERFIELD	6S - 6E	31
DENNISON	OTTAWA	POLKTON	8N - 14W	21, 27, 28
DIAMOND SPRINGS	ALLEGAN	OVERISEL	4N - 14W	36
		SALEM	4N - 13W	31
		HEATH	3N - 14W	1
		MONTEREY	3N - 13W	6
DORR	ALLEGAN	DORR	4N - 12W	19, 29, 30, 31, 32, 33
		SALEM	4N - 13W	25
DOUGLASS	MONTCALM	DOUGLASS	11N - 7W	1
DUNNINGVILLE	ALLEGAN	HEATH	3N - 14W	22, 27, 33
DWIGHT	HURON	DWIGHT	18N - 13E	21
EAST NORWICH	MISSAUKEE	NORWICH	24N - 5W	1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22
	ROSCOMMON	LYON	24N - 4W	6, 7, 18
EDEN	MASON	EDEN	17N - 16W	25, 26, 35, 36
EDENVILLE	MIDLAND	EDENVILLE	16N - 1W	5, 26, 27
EDMORE	MONTCALM	HOME	12N - 6W	2, 3, 9, 10, 11
EDWARDS	OGEMAW	EDWARDS	21N - 1E	15
ELBRIDGE	OCEANA	ELBRIDGE	15N - 16W	22, 26, 27, 28
ELMWOOD	TUSCOLA	ELMWOOD	14N - 10W	17, 20, 21
ENTERPRISE	MISSAUKEE	ENTERPRISE	23N - 5W	10, 11, 12, 13, 14
	ROSCOMMON	LAKE	23N - 4W	18
ENTRICAN	MONTCALM	DOUGLASS	11N - 7W	21
ESSEXVILLE	BAY	HAMPTON	14N - 6E	7, 8, 9, 15, 16, 17, 18
		HAMPTON	14N - 5E	12
EVART	OSCEOLA	OSCEOLA	18N - 8W	21, 22, 23, 25, 26, 27, 28
EXCELSIOR	KALKASKA	EXCELSIOR	27N - 6W	11
FERRY	OCEANA	FERRY	16N - 16W	16, 20, 21
FILLMORE	ALLEGAN	FILLMORE	4N - 15W	2, 3, 11, 12
	OTTAWA	HOLLAND	5N - 15W	27, 34, 35
FORK	MECOSTA	FORK	16N - 7W	4, 5, 6, 7, 8, 16, 18
		CHIPPEWA	16N - 8W	1, 12
FORK, NORTH	OSCEOLA	ORIENT	17N - 7W	28, 33
FREEMAN-REDDING	CLARE	REDDING	19N - 6W	27, 28, 29, 32, 33, 34
		FREEMAN	18N - 6W	3, 4
GENEVA	VAN BUREN	GENEVA	1S - 16W	20, 21, 22, 27, 28, 29, 32, 33
GIBSON, SEC. 20	BAY	GIBSON	18N - 3E	20, 29
GILBERT LAKE	OCEANA	COLFAX	16N - 15W	34
GILMORE	ISABELLA	GILMORE	16N - 5W	30, 31, 32
		NOTTAWA	15N - 5W	5
GOODWELL	NEWAYGO	GOODWELL	14N - 11W	5, 6, 7, 8, 9, 16, 17

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
GRANT, SEC. 29	HURON	GRANT	15N - 11E	29
GREEN OAK	LIVINGSTON	GREEN OAK	1N - 6E	14
GROUT	GLADWIN	GROUT	18N - 2W	10, 11, 14, 15
HAMILTON	CLARE	HAMILTON	19N - 3W	5, 6, 7, 8, 15
		HAYES	19N - 4W	1, 2
		FROST	20N - 4W	35, 36
HANOVER	JACKSON	HANOVER	4S - 2W	8, 9
HARDY DAM	MECOSTA	AETNA	13N - 10W	5, 6, 7, 8
HARRISON	CLARE	HATTON	18N - 4W	7
HEADQUARTERS	ROSCOMMON	ROSCOMMON	21N - 3W	19, 20, 28, 29, 30, 32, 33, 34
	CLARE	FRANKLIN	20N - 3W	3, 4, 10, 15
HEATH	ALLEGAN	HEATH	3N - 14W	11, 12, 13, 14
HESSEN	ST. CLAIR	CASCO	4N - 15E	2, 3, 10, 11 (ALSO SEE GAS FIELDS)
		COLUMBUS	5N - 15E	34, 35
HILLIARDS (SALINA)	ALLEGAN	HOPKINS	3N - 12W	3, 4, 10 (ALSO SEE GAS FIELDS)
HOME, SEC. 26	MONTCALM	HOME	12N - 6W	26
HOPE	BARRY	HOPE	2N - 9W	26, 27, 28, 33, 34, 35
		BARRY	1N - 9W	1, 2, 3, 12
HOPKINS, SOUTH	ALLEGAN	HOPKINS	3N - 12W	19, 30, 31, 32
HOPKINS, WEST	ALLEGAN	HOPKINS	3N - 12W	7, 18
HUBER	NEWAYGO	DENVER	14N - 14W	4, 5, 8
ISABELLA	ISABELLA	ISABELLA	15N - 4W	7, 18
		NOTTAWA	15N - 5W	12, 13
JEFFERSON	CASS	JEFFERSON	7S - 15W	22, 23, 26, 27, 35
JEROME	MIDLAND	JEROME	15N - 1W	6, 7, 8
JOHNSTOWN	BARRY	JOHNSTOWN	1N - 8W	7, 8, 17
KAWKAWLIN	BAY	KAWKAWLIN	15N - 4E	26, 27, 28, 29, 33, 34, 35, 36
		MONITOR	14N - 4E	1, 2, 3, 11, 12
		BANGOR	14N - 5E	4, 5, 6, 7, 8, 9
		BANGOR	15N - 5E	31
KIMBALL LAKE	NEWAYGO	GARFIELD	12N - 13W	2, 10, 11, 12, 13, 14, 15, 24
LAKEFIELD	SAGINAW	LAKEFIELD	11N - 1E	1
LAKETON	MUSKEGON	LAKETON	10N - 17W	15
LAKEVIEW	MONTCALM	CATO	12N - 8W	22
LAKE GEORGE	CLARE	LINCOLN	18N - 5W	6
LAWTON	VAN BUREN	PORTER	4S - 13W	5, 8, 17, 18, 19, 20
		DECATUR	4S - 14W	24
LEATON	ISABELLA	DENVER	15N - 3W	19, 30, 31
		ISABELLA	15N - 4W	24, 25
LENOX	MACOMB	LENOX	4N - 14E	32 (DEVELOPED GAS STORAGE RESERVOIR)
		CHESTERFIELD	3N - 14E	5
LEROY	OSCEOLA	LEROY	19N - 10W	27
LINCOLN, SEC. 18	ARENAC	LINCOLN	18N - 4E	18
LINCOLN, SEC. 31	ARENAC	LINCOLN	18N - 4E	31

TABLE 6. LOCATION OF MICHIGAN OIL FIELDS Continued (3-4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
LUCMT	BAY	PINCONNING	17N - 4E	29
LUTHER	LAKE	NEWKIRK	19N - 12W	14
MCBAIN	MISSAUKEE	RIVERSIDE	21N - 7W	19, 20, 30
		RICHLAND	21N - 8W	24
MACON CREEK	LENAWEE	MACON	5S - 5E	23
MARATHON	LAPEER	MARATHON	9N - 9E	16
MARINE CITY	ST. CLAIR	COTTRELLVILLE	3N - 16E	2, 3, 10, 11, 15 (ALSO SEE GAS FIELDS)
MARINE CITY, SOUTH	ST. CLAIR	COTTRELLVILLE	3N - 16E	23, 26
MEDINA	LENAWEE	MEDINA	8S - 1E	3
MILLS, SEC. 1	MIDLAND	MILLS	16N - 2E	1
MINERAL SPRINGS	OSCEOLA	SHERMAN	20N - 9W	16, 20, 21
MIO	OSCODA	MENTOR	25N - 3E	30, 32
	OGEMAW	ROSE	24N - 3E	3, 4
MOFFATT, SEC. 34	ARENAC	MOFFATT	20N - 3E	34
MONTEREY	ALLEGAN	MONTEREY	3N - 13W	2, 4, 8, 9, 10, 11, 14, 15, 16, 17, 18, 20, 21,
				22, 23, 24, 27, 32, 36
MT. CLEMENS	MACOMB	MACOMB	3N - 13E	34
MT. FOREST	BAY	PINCONNING	17N - 4E	18, 19
		MT. FOREST	17N - 3E	13, 24
MT. PLEASANT	MIDLAND	GREENDALE	14N - 2W	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
		LEE	14N - 1W	7, 8, 18
	ISABELLA	CHIPPEWA	14N - 3W	1, 2, 3, 4, 11, 12, 13
		DENVER	15N - 3W	28, 33, 34
MUSKEGON	MUSKEGON	MUSKEGON	10N - 16W	3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22
		LAKETON	10N - 17W	1, 11, 12, 13, 14
NELLSVILLE	ROSCOMMON	ROSCOMMON	22N - 4W	8, 17
NEW LOTHROP	GENESEE	FLUSHING	8N - 5E	7
	SHIAWASSEE	HAZELTON	8N - 4E	12
NORTHVILLE	WASHTENAW	SALEM	1S - 7E	1, 2, 12
	OAKLAND	LYON	1N - 7E	34, 36
	WAYNE	NORTHVILLE	1S - 8E	16, 17
		PLYMOUTH	1S - 8E	21, 22, 23, 25, 26
OTISVILLE	GENESEE	FOREST	9N - 8E	5, 6, 12
	TUSCOLA	MILLINGTON	10N - 8E	31, 32
OTTO, SEC. 32	OCEANA	OTTO	13N - 16W	32
OVERISEL	ALLEGAN	OVERISEL	4N - 14W	5, 8, 9, 15, 16, 21, 22, 27, 28, 34
		HEATH	3N - 14W	3, 4, 9, 10
OXBOW	MASON	RIVERTON	17N - 17W	26, 27
PARIS	MECOSTA	GREEN	16N - 10W	16, 21, 22, 27, 28
PAW PAW	VAN BUREN	PAW PAW	3S - 14W	2, 10, 11, 15
PAW PAW, SEC. 33	VAN BUREN	PAW PAW	3S - 14W	33
PEACOCK, SEC. 7	LAKE	PEACOCK	19N - 13W	7

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
PEACOCK, SEC. 9	LAKE	PEACOCK	19N - 13W	9
PEACOCK, SEC. 17	LAKE	PEACOCK	19N - 13W	17
PECKS LAKE	OSCEOLA	EVART	17N - 8W	18
PENTWATER	OCEANA	WEARE	16N - 17W	4, 5, 6, 7, 8
		PENTWATER	16N - 18W	1, 2, 12
	MASON	SUMMIT	17N - 17W	31
		SUMMIT	17N - 18W	26, 35, 36
PETERS	ST. CLAIR	CASCO	4N - 15E	S½ 15, SE¼ 16, 22, 23, 26, 27, E½ 28, NE¼ 33, N½ 34
PETERS, EAST	ST. CLAIR	CASCO	4N - 15E	24, 25
		CHINA	4N - 16E	19
PINCONNING	BAY	PINCONNING	17N - 4E	25, 35, 36
		FRASER	16N - 4E	2
POLKTON	OTTAWA	POLKTON	8N - 14W	8, 9, 10, 11, 14, 15, 16
PORTER	MIDLAND	PORTER	13N - 1W	7, 8, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22,
				23, 26, 27, 28
		JASPER	13N - 2W	1, 2, 3, 11, 12
		GREENDALE	14N - 2W	34, 35
PROSPER	MISSAUKEE	AETNA	22N - 6W	26, 35
PROSPER, SOUTH	MISSAUKEE	AETNA	22N - 6W	36
		CLAM UNION	21N - 6W	1, 2
PULLMAN, EAST	ALLEGAN	LEE	1N - 15W	5, 6, 7, 8
PUTTYGUT	ST. CLAIR	CASCO	4N - 15E	11, 14 PRODUCTION COMBINED WITH ADAIR FIELD
RAVENNA	MUSKEGON	RAVENNA	9N - 14W	21, 27, 28, 29, 30, 31
		SULLIVAN	9N - 15W	25, 36
RAY	MACOMB	RAY	4N - 13E	GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL
REED CITY	OSCEOLA	LINCOLN	18N - 10W	17, 18, 19, 20, 29, 30, 31, 32
		RICHMOND	17N - 10W	4, 5, 6, 7, 8, 9
	LAKE	PINORA	18N - 11W	24, 25, 36
REED CITY, EAST	OSCEOLA	LINCOLN	18N - 10W	26
REEMAN	NEWAYGO	SHERIDAN	12N - 14W	8
REYNOLDS	MONTCALM	REYNOLDS	12N - 10W	1, 2, 12, 13
		WINFIELD	12N - 9W	6, 7, 8, 17, 18
	MECOSTA	AETNA	13N - 10W	36
RICH	LAPEER	RICH	10N - 10E	27, 28, 34
RIVERSIDE	MISSAUKEE	RIVERSIDE	21N - 7W	14, 23, 24
RIVERTON	MASON	RIVERTON	17N - 17W	10, 11, 15
RIVERTON, SEC. 21	MASON	RIVERTON	17N - 17W	21
ROBINSON, SEC. 3	OTTAWA	ROBINSON	7N - 15W	3
ROCKFORD	KENT	ALGOMA	9N - 11W	25, 35, 36
		COURTLAND	9N - 10W	19
ROSEBUSH	ISABELLA	ISABELLA	15N - 4W	1, 2, 11, 12, 13
		DENVER	15N - 3W	7, 18

TABLE 6. LOCATION OF MICHIGAN OIL FIELDS Continued (4-4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
ROSE CITY	OGEMAW	FOSTER	24N - 1E	14, 20, 21, 23, 24, 25
		FOSTER	24N - 2E	19, 20, 21, 28, 29, 30, 31, 32, 33
		ROSE	24N - 2E	27, 34, 35
		KLACKING	23N - 2E	2, 3, 11
ROSE LAKE	OSCEOLA	ROSE LAKE	19N - 9W	31
		LEROY	19N - 10W	36
		CEDAR	18N - 9W	6
		LINCOLN	18N - 10W	1
SAGINAW	SAGINAW	SAGINAW	12N - 4E	10, 11, 12, 13, 14, 15, 24
SALEM	ALLEGAN	SALEM	4N - 13W	1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21,
				22, 23, 24, 34
	OTTAWA	JAMESTOWN	5N - 13W	35, 36
SANFORD	MIDLAND	JEROME	15N - 1W	12, 13
SAUBLE	LAKE	SAUBLE	19N - 14W	16
SCOTTVILLE	MASON	AMBER	18N - 17W	13, 14, 23
SHELBY	OCEANA	BENONA	14N - 18W	18
		BENONA	14N - 19W	13
SHERMAN	ISABELLA	SHERMAN	15N - 6W	29, 32, 33, 34
		BROOMFIELD	14N - 6W	3, 4, 5
SKEELS	GLADWIN	SHERMAN	20N - 2W	30, 31
	CLARE	FRANKLIN	20N - 3W	25, 36
SPRINGPORT	JACKSON	SPRINGPORT	1S - 3W	11, 14
ST. CHARLES	SAGINAW	ST. CHARLES	10N - 3E	26
ST. HELEN	ROSCOMMON	AU SABLE	24N - 1W	10, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25,
				26, 27, 28, 29, 30, 32
STANDISH	ARENAC	LINCOLN	18N - 4E	10, 11, 15
STANTON	MONTCALM	DOUGLASS	11N - 7W	26, 27, 34, 35
STARRVILLE	ST. CLAIR	COTTRELLVILLE	3N - 16E	9
STERLING	ARENAC	DEEP RIVER	19N - 4E	9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
STONY LAKE	OCEANA	CLAYBANKS	13N - 18W	9, 10, 11, 14, 15, 16
SUMNER	GRATIOT	SUMNER	11N - 4W	11, 12
SYLVAN	OSCEOLA	SYLVAN	18N - 7W	8, 9, 16
TEKONSHA	CALHOUN	TEKONSHA	4S - 6W	17
TRENT	MUSKEGON	CASNOVIA	10N - 13W	19
TROWBRIDGE	ALLEGAN	TROWBRIDGE	1N - 13W	1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17,
				18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32
		OTSEGO	1N - 12W	7, 18
VERNON	ISABELLA	VERNON	16N - 4W	15, 16, 21, 22, 23, 26, 27
VOGEL CENTER	MISSAUKEE	CLAM UNION	21N - 6W	32
WALKER	KENT	WALKER	7N - 12W	19, 20, 27, 28, 29, 30, 31, 32, 33, 34
		WALKER	6N - 12W	3, 4, 5, 6
		WYOMING	6N - 12W	2, 3, 4, 7, 8
	OTTAWA	TALLMADGE	7N - 13W	14, 15, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36
		TALLMADGE	6N - 13W	1, 12
WALKER (CONT.)	OTTAWA	GEORGETOWN	6N - 13W	1, 2
		GEORGETOWN	7N - 13W	35
WAYLAND	ALLEGAN	WAYLAND	3N - 11W	E½ 8, 9, 16, 17, 18, 20, 21
WAYLAND, NORTH	ALLEGAN	WAYLAND	3N - 11W	6, 7, NW of 8
WEST BRANCH	OGEMAW	WEST BRANCH	22N - 2E	18, 19, 20, 21, 26, 27, 28, 29, 34, 35, 36
		OGEMAW	22N - 1E	10, 13, 14, 23, 24
		CHURCHILL	22N - 3E	31
		HORTON	21N - 2E	1, 2
		MILLS	21N - 3E	5, 6
WILEY	MASON	EDEN	17N - 16W	18
		RIVERTON	17N - 17W	12
WINFIELD	MONTCALM	WINFIELD	12N - 9W	20, 28, 29
WINTERFIELD	CLARE	WINTERFIELD	20N - 6W	28, 29, 30, 32, 35, 36
		REDDING	19N - 6W	1, 5
		GREENWOOD	19N - 5W	6
WISE	ISABELLA	WISE	16N - 3W	8, 9, 16, 17, 20, 21, 28, 29, 32, 33
WOODVILLE	NEWAYGO	NORWICH	15N - 11W	20, 28, 29
WRIGHT	OTTAWA	WRIGHT	8N - 13W	28, 32, 33
		TALLMADGE	7N - 13W	4
WYOMING PARK	KENT	WYOMING	6N - 12W	13, 14, 23
ZEELAND	OTTAWA	ZEELAND	5N - 14W	32

In the column titled PRODUCING SECTIONS, listing of a section or part of a section does not necessarily mean the entire section to be productive of oil or gas in any or all potentially productive formations. Only those sections or parts of sections, which have had at least one well completed as an oil or gas well are listed. These tables also include the few gas reservoirs which produce small quantities of oil.

TABLE 7. ABANDONED OIL FIELDS (1-3)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE				DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS					OIL PRODUCTION IN BARRELS		DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY		
				DEPTH IN FEET	THICKNESS AND LITHOLOGY		OIL GRAVITY A.P.I.			TO END 1967	COMP. IN	ABAND. IN	PRODUCING AT END	SHUT IN OR SHUT DOWN	YEAR ABANDONED	CUMULATIVE			DISPOSAL		TOTAL PRODUCTION
																			SUBSURFACE	SURFACE	
ALAMO	KALAMAZOO	1949	TRAVERSE	1310	2	L		TRAVERSE	1420	16					1962	27,545	160	172			
ALLEGAN	ALLEGAN	1937	TRAVERSE	1563	2	L	38.0	CINCINNATIAN	2987	18					1961	15,577	180	87			
ASHLAND, SEC. 8	NEWAYGO	1959	TRAVERSE	2238	1	L		TRAVERSE	2239	1					1962	267	10	27			
BANGOR	VAN BUREN	1939	TRAVERSE	1002	2	L	29.5	TRENTON	2552	65					1959	933,965	610	1,531			
BARTON	NEWAYGO	1947	TRAVERSE	3097	1	L	30.0	DETROIT RIVER	3745	3					1963	20,227	50	405			
BEAVER, SEC. 31	BAY	1954	BEREA	2413	16	SL		SYLVANIA	4754	1					1961	926	10	93			
BENONA, SEC. 13	OCEANA	1949	TRAVERSE	1640	3	L		DETROIT RIVER	2276	2					1956	4,951	20	248			
BIRCH RUN	SAGINAW	1934	BEREA	1530	5	S	43.3	DUNDEE	2646	26					1951	215,876	250	864			
BISHOP	NEWAYGO	1950	TRAVERSE	2226	3	L		TRAVERSE	2238	7					1952	33,327	110	303			
BLOOMER, SEC. 18	MONTCALM	1936	TRAVERSE	2717	6	L		DUNDEE	3138	1					1936	814	10	81			
BREEDSVILLE	VAN BUREN	1943	TRAVERSE	1061	2	L	33.0	DETROIT RIVER	1445	32					1961	285,584	300	952			
BUCKEYE, SOUTH	GLADWIN	1956	TRAVERSE	2891	3	D	42.0	DETROIT RIVER	4509	7					PRODUCTION COMBINED WITH BUCKEYE, SOUTH, DUNDEE						
BUSHNELL	MONTCALM	1935	DUNDEE	3105	2	L	33.9	DUNDEE	3125	1					1939	4,035	10	403			
BUTMAN	GLADWIN	1950	TRAVERSE	2789	2	L		SYLVANIA	5027	1					1953	PRODUCTION COMBINED WITH BUTMAN RICHFIELD					
		1949	DUNDEE	3596	6	L	41.4			1					1963	PRODUCTION COMBINED WITH BUTMAN RICHFIELD					
CASCO	ALLEGAN	1940	TRAVERSE	1095	1.5	L	38.6	TRAVERSE	1115	9					1959	17,382	50	348			
CHERRY GROVE	WEXFORD	1952	TRAVERSE	3145	4	D		DUNDEE	3998	1					1953	4,814	10	481			
CHESHIRE	ALLEGAN	1947	TRAVERSE	1289	2	L	35	TRAVERSE	1348	3					1958	9,290	30	310			
CHESTER, SEC. 15	OTSEGO	1951	SALINA	6610	5	D	41.0	NIAGARAN	6870	1					1956	2,752	40	69			
CHIPPEWA, SEC. 10	ISABELLA	1961	TRAVERSE	3193	1	L		TRAVERSE	3220	1					1964	1,250	PRODUCTION CARRIED IN MT. PLEASANT FIELD TOTALS				
CLEAR LAKE	VAN BUREN	1950	TRAVERSE	1380	1	L		TRAVERSE	1399	14					1953	17,490	140	125			
CLINTON	WASHTENAW	1953	TRAVERSE	986	2	D		TRENTON	3606	2					1962	2,093	20	105			
COFFEE LAKE	VAN BUREN	1946	TRAVERSE	1128	1	L		TRAVERSE	1130	11					1954	34,649	110	315			
COLDWATER, SOUTH	ISABELLA	1951	DUNDEE	3739	4	D		DUNDEE	3743	1					1959	10,941	20	547			
COMSTOCK, SEC. 5	KALAMAZOO	1949	TRAVERSE	1430	3	L		TRAVERSE	1480	2					1952	974	20	49			
CONCORD	JACKSON	1953	TRAVERSE	1627	1	L		SALINA	2417	5					1958	6,437	50	129			
CRANBERRY LAKE	CLARE	1953	DETROIT RIVER SZ	4801	16		48.8	RICHFIELD	5223	1					1962	PRODUCTION COMBINED WITH CRANBERRY LAKE DUNDEE, TRAVERSE, AND RICHFIELD					
		1952	TRAVERSE	3120	7	L	39.0			7					1965	PRODUCTION COMBINED WITH CRANBERRY LAKE DUNDEE, TRAVERSE, AND RICHFIELD					
CRANBERRY LAKE, EAST	CLARE	1963	TRAVERSE	3057	6		39.2								1964	588	MARGINAL PRODUCTION COMBINED WITH CRANBERRY EAST DUNDEE				
CROOKED LAKE	ALLEGAN	1949	TRAVERSE	1278	1	L		TRAVERSE	1312	2					1956	115,432	40	2,886			
CROTON	NEWAYGO	1951	TRAVERSE	2543	2	L		SALINA	3993	10					1958	91,678	200	458			
CRUMP	BAY	1950	DUNDEE	3294	7	L		DUNDEE	3354	1					1951	1,043	10	104			
DALIAS	CLINTON	1942	TRAVERSE	2482	2	L		DETROIT RIVER	2934	3					1948	3,085	40	770			
DAY	MONTCALM	1946	DUNDEE	3337	2	L		DUNDEE	3387	2					1954	16,239	20	812			
DOUGLASS, SEC. 3	MONTCALM	1954	TRAVERSE	3025	8	L		DUNDEE	3666	1					1956	3,155	20	158			
EAST NORWICH	MISSAUKEE	1942	DUNDEE	3082	4	L	44.2	SYLVANIA	4632	1					1947	PRODUCTION COMBINED WITH EAST NORWICH RICHFIELD					
		1944	TRAVERSE	2410	1	L				1					1944	PRODUCTION COMBINED WITH EAST NORWICH RICHFIELD					
ELBA	GRATIOT	1927	TRAVERSE	2440	2	L	47.0	DUNDEE	3044	8					1962	42,925	90	477			
ELKLAND	TUSCOLA	1946	DUNDEE	2653	14	L		SYLVANIA	3735	2					1947	1,546	20	77			
ENSLEY	NEWAYGO	1954	TRAVERSE	2439	2	L		DETROIT RIVER	3018	6					1959	70,415	120	587			
FOREST RIVER	OCEANA	1965	TRAVERSE	1965	1	L		DUNDEE	2598	1					1965	667	40	17			
FORK	MECOSTA	1945	RICHFIELD	5001	11	D	54.8	BOIS BLANC	5294	1					1966	PRODUCTION COMBINED WITH FORK DUNDEE					
FREEDOM	WASHTENAW	1954	TRENTON	3963	20	D	43.5	CAMBRO-ORDIVICIAN	4691	1					1956	7,217	40	180			
FREEMAN, SEC. 15	CLARE	1963	DUNDEE	3894	8	L	41.0	DUNDEE	3902	1					1965	736	40	18			

TABLE 7. ABANDONED OIL FIELDS Continued (2-3)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE				DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS					OIL PRODUCTION IN BARRELS		DRILLED ACRES	RECOVERY PER ACRE DRILLED (BBLS.)	BRINE PRODUCTION BBLS./DAY		
				DEPTH IN FEET	THICKNESS AND LITHOLOGY		OIL GRAVITY A.P.I.			TO END 1967	COMP. IN	ABAND. IN	PRODUCING AT END	SHUT IN OR SHUT DOWN	YEAR ABANDONED	CUMULATIVE			DISPOSAL		TOTAL PRODUCTION
																			SUBSURFACE	SURFACE	
FREMONT, SEC. 27	ISABELLA	1962	DUNDEE & TRAVERSE	3522 3069	2	L		DUNDEE	3587	1					1963	488					
FREMONT	ISABELLA	1938	DUNDEE	3696	4	D		DUNDEE	3700	2					1956	3,045	30	102			
FREMONT, SEC. 32	ISABELLA	1957	TRAVERSE	3058	2			DUNDEE	3619	1					1958	892	10	89			
FREMONT	SAGINAW	1946	DUNDEE	3125	1	L		DUNDEE	3150	2					1947	2,000	20	100			
FREEPORT	BARRY	1949	TRAVERSE	2031	3	L		DETROIT RIVER	2430	1					1951	19,229	10	1,923			
GARFIELD	CLARE	1946	DUNDEE	5013	10	S		SYLVANIA	5307	1					1948	13,769	40	344			
GIBSON	BAY	1950	DUNDEE	2942	4	L		DETROIT RIVER	4343	1					1952	PRODUCTION COMBINED WITH GIBSON TRAVERSE					
		1935	TRAVERSE	2036	4	L				12					1957	51,892	130	399			
GREENWOOD, SEC. 11	CLARE	1952	DUNDEE	4054	10	L		RICHFIELD	5432	1					1953	1,324	10	132			
GROUT	GLADWIN	1940	DUNDEE	3825	4	L		DETROIT RIVER	5228	5					1957	PRODUCTION COMBINED WITH GROUT RICHFIELD					
		1958	DETROIT RIVER SZ	4801	12	D				1					1963	PRODUCTION COMBINED WITH GROUT RICHFIELD					
HAMILTON	CLARE	1940	DUNDEE	4041	10	L	41.8	RICHFIELD	5395	3					1959	PRODUCTION COMBINED WITH HAMILTON RICHFIELD					
HAMLIN	MASON	1952	NIAGARAN	4224	20	D	46.2	CAMBRIAN	6622	1					1958	60,532	40	1,513			
HART	OCEANA	1933	TRAVERSE	1911	4	D	34.0	ST. PETER Ss.	5531	17					1936	116,275	150	775			
HATTON	CLARE	1941	DUNDEE	3945	2	L		DUNDEE	4000	4					1948	139,272	160	870			
HAWKHEAD	ALLEGAN	1946	TRAVERSE	1103	1	L	36.0	DETROIT RIVER	1385	16					1960	68,292	160	427			
HEATH, SEC. 35	ALLEGAN	1945	TRAVERSE	1468	2	L		TRAVERSE	1470	1					1946	559	10	56			
HILLIARDS	ALLEGAN	1944	TRAVERSE	1576	1.2	L		NIAGARAN	3157	17					1961	124,401	300	415			
HOLTON	MUSKEGON	1948	TRAVERSE	1993	1	L	37.3	DUNDEE	2554	3					1963	95,911	60	1,598			
HOPKINS	ALLEGAN	1939	TRAVERSE	1633	4	L	41.5	DETROIT RIVER	1965	10					1956	145,513	110	1,323			
HOPKINS, WEST	ALLEGAN	1941	TRAVERSE	1371	2	L	41.5	SALINA	3140	31					1951	388,777	370	1,051			
HUBBARDSTON	IONIA	1947	DUNDEE	3028	5	L		DUNDEE	3072	5					1959	48,479	50	970			
LACOTA	VAN BUREN	1946	TRAVERSE	1110	2	L		TRAVERSE	1208	11					1955	51,904	120	433			
LARKIN	MIDLAND	1935	BEREA	2473	4	S	39.0	DUNDEE	3829	2					1945	7,070	20	353			
LEBANON	CLINTON	1948	TRAVERSE	2548	1	L		TRAVERSE	2570	1					1950	1,036	10	104			
LEE	ALLEGAN	1941	TRAVERSE	1170	1	L		TRAVERSE	1207	6					1952	3,030	60	51			
LEE, SOUTH	ALLEGAN	1949	TRAVERSE	1171	1	L		TRENTON	2960	12					1953	91,117	120	759			
LIME LAKE	HILLSDALE	1960	PRAIRIE DU CHIEN	3461	5	D	44.6	PRAIRIE DU CHIEN	3533	1					1965	7,842	20	392			
MARNE	OTTAWA	1940	"BEREA"	1170	3	L		TRAVERSE	1904	2					1946	6,253	20	313			
MARTIN	ALLEGAN	1948	TRAVERSE	1617	1	L	36.0	ST. PETER Ss.	4290	2					1960	2,188	20	109			
MEARS	OCEANA	1949	DUNDEE	2210	3	L	32.2	REED CITY	2347	3					1959						
		1951	TRAVERSE	1745	2.5	DL	36.1			11					1959	105,807	110	622			
MOFFATT, SEC. 34	ARENAC	1953	DUNDEE	2984	4	L		DUNDEE	3027	1					1956	8,392	10	839			
MT. HALEY	MIDLAND	1934	DUNDEE	3477	3	D	39.6	DUNDEE	3500	1					1947	36,069	10	3,607			
MT. FOREST, SEC. 1	BAY	1946	DUNDEE	2960	2	L		DUNDEE	3057	1					1946	1,906	10	191			
NEW BOSTON	WAYNE	1943	TRENTON	2635	4	L		TRENTON	2983	2					1949	2,349	10	235			
NEW RICHMOND	ALLEGAN	1965	TRAVERSE	1364	1	L		TRAVERSE	1365	1					1966	104	10	10			
NILES	BERRIEN	1940	TRAVERSE	602	7	L	21.5	TRENTON	2089	7					1958	29,672	70	424			
NORTH PORTER	CASS	1930	TRAVERSE	660	2	L	37.0	TRENTON	2382	2					1953	1,424	20	71			
OTISVILLE	GENESEE	1941	TRAVERSE	1895	2	L		DUNDEE	2674	1					1946	PRODUCTION COMBINED WITH OTISVILLE DUNDEE AND BEREA					
OTSEGO	ALLEGAN	1938	TRAVERSE	1532	1	L		TRAVERSE	1600	6					1962	2,290	100	23			
OTSEGO, SEC. 9	ALLEGAN	1950	TRAVERSE	1456	1	L		TRAVERSE	1457	4					1958	681	40	17			
OTTO, SEC. 30	OCEANA	1955	TRAVERSE	REFER TO ACTIVE FIELDS												COMBINED WITH OTTO, SEC. 32					
		1958	"BEREA"	1428	9			TRAVERSE	1860	2					1960	COMBINED WITH SEC. 32					

MICHIGAN OIL AND GAS FIELDS
SOUTHERN PENINSULA

SCALE
0 6 12 18 24 MILES

EXPLANATION

OIL FIELDS
SINGLE POOL
Beaver Creek
2 OR MORE POOLS
Skeels

GAS FIELDS
Falmouth

DEVELOPED GAS STORAGE AREA
Orient
General outline of storage area.

COMBINATION
OIL AND GAS FIELDS
2 OR MORE OIL AND GAS POOLS
Clayton
Headquarters

REMARKS:
Shape and outline of all fields are generalized.
Field names not shown where space prohibits.
Includes abandoned fields.

PART A

EMMET
CHARLEVOIX
ANTRIM
LEELANAU
BENZIE
GRAND TRAVERSE
KALKASKA
MANISTEE
WEXFORD
MISSAUKEE
MASON
LAKE
OSCEOLA
CLARE
Excelsior
Paradise
Cannon Creek
Enterprise
Cherry Grove
Reeder
Falmouth
Prosper
Prosper S.
Riverside
McBain
Howard City
Vogel Center
Cranberry Lake
Cranberry Lake East
Hamilton
Grant
Victory
Hamlin
Scottville
Riverton
Wiley
Oxbow
Eden
Logan
Sauble
Peacock
Luther
Burdell
Mineral Springs
Winterfield (Marion)
Middle Branch
Greenwood
LeRoy
Freeman-Redding
Lake George
Harrison
Sylvan
Rose Lake
Reed City Storage
Reed City East
Cedar
Evart
Freeman-Lincoln
Holton
McKay
Pecks Lake
Chase
Orient
Surrey
Clare City
N. Fork
17 N
3 W