

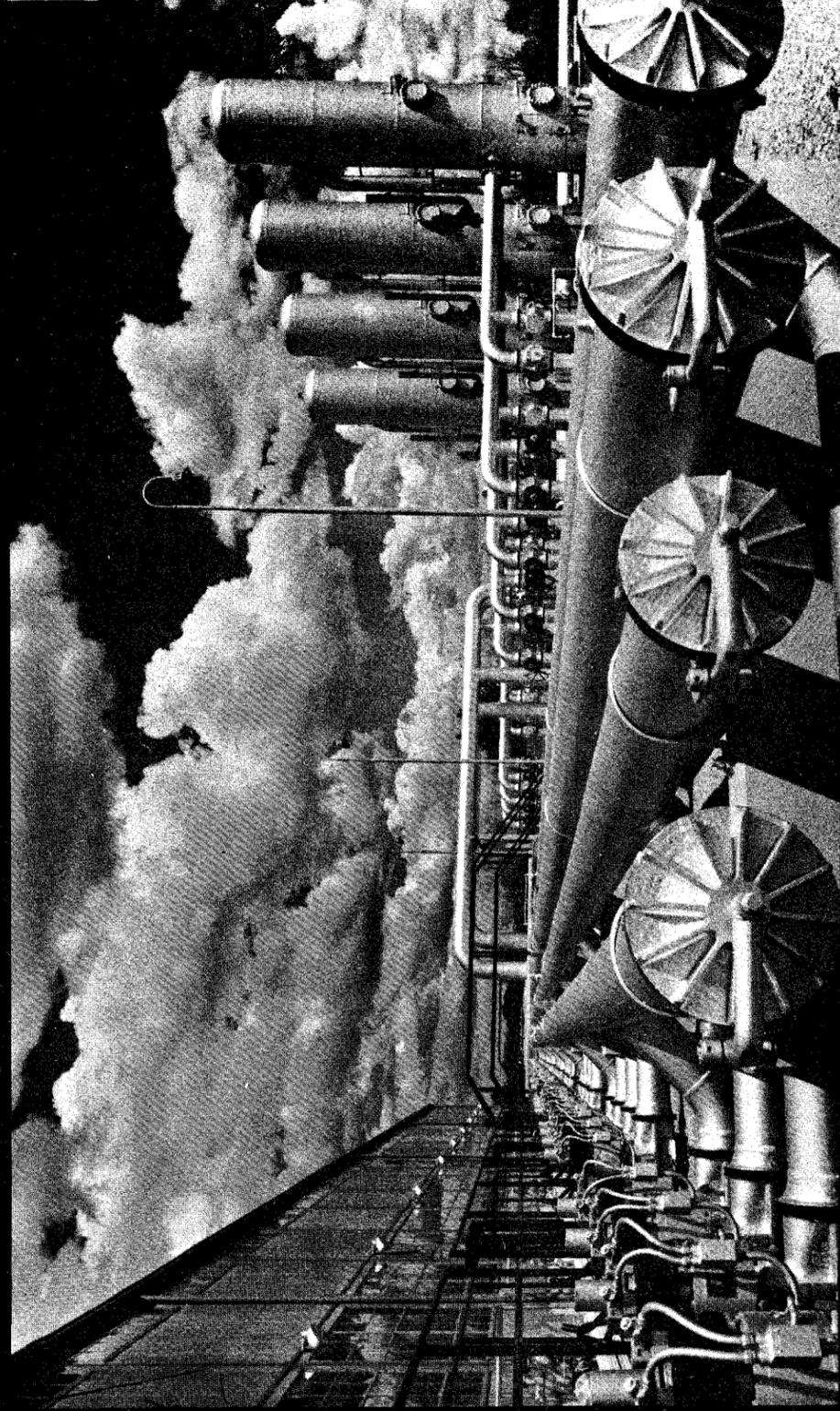
Michigan Geological Survey, Ann. Stat. Sum. 6, MICHIGAN'S OIL AND GAS FIELDS, 1966



# MICHIGAN'S OIL AND GAS FIELDS, 1966

ANNUAL STATISTICAL SUMMARY 6

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## ACKNOWLEDGMENTS

The contents of this publication result from the joint efforts of the Survey's Oil and Gas Section. The publication brings together under one cover many related oil and gas field statistical data not usually found in any other industry or government publication.

Certain kinds of data such as number of exploratory wells drilled, amount of exploratory or development well drilled footage, well classifications, and so forth, may differ from statistical data reported by regional or national trade journals, or by petroleum industry reporting services. The kinds of data mentioned have been treated uniformly as near as possible from year to year. In general, the data agrees closely with statistics printed in recent years by the American Association of Petroleum Geologists.

Oil and gas field data of historical and general interest is 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 a petroleum and natural 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.

Current oil and gas production figures are provided by the Michigan Department of Revenue. Other statistics are based on data gathered by the Geological Survey.

The statistics in this report have been compiled from records kept by staff members of the Oil and Gas Section supervised by L. W. Price. Oil and Gas Section unit supervisors directed the gathering and maintenance of the basic records. Unit supervisors who assembled and summarized the basic data for manuscript preparation are:

R. M. Acker, geologist and head, Regulatory Control

W. G. Smiley, geologist and head, Production and Proration

R. E. Ives, geologist and head, Petroleum Geology

Technical advice on publication preparation was provided by R. W. Kelley, Editor, Geological Survey.

Publication format, manuscript preparation, and printing arrangements were made by G. D. Ells, Petroleum Geology, with the assistance of secretarial and technical staff members of the Oil and Gas Section.

The cover photo, showing a part of the gas storage facilities in Six Lakes gas storage field, central Michigan, was provided through courtesy of Michigan Consolidated Gas Company, owners and operators.

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Lansing, Michigan  
May, 1967

G. D. Ells  
Compiler

## PETROLEUM INDUSTRY IN MICHIGAN IN 1966

## Introduction

Over-all oil and gas field activity was slightly below that of 1965. The most active regions of new field exploration and field development drilling were St. Clair and Macomb Counties, the area along the Albion-Pulaski-Scipio oil field trend, and the general northwest quadrant of the Southern Peninsula. Most of the 11 new discoveries were made in the latter region. No large fields were found in 1966 or the preceeding year. The small areal extent of the new found fields and greater well spacing contributed to the decline in some facets of oil and gas field activities.

Oil and gas production for 1966 declined a small percentage. The total value of these products amounted to over \$49,739,074 as compared with \$50,340,000 in 1965. Domestic LFG production was valued at about \$3,878,074.

Part I 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 1966. Part 2, the green pages, contains specific information on Michigan's oil and gas fields for 1966. Part 3 contains cumulative records of lesser importance to the petroleum industry.

\* \* \* DRILLING PERMITS \* \* \*

Fewer permits for oil or gas well tests, gas storage reservoir wells, or other types drilled under oil and gas permits were issued by the Regulatory Control

Unit. The geographic distribution by district (see map, next page) of permits issued through a 3-year period is shown on the following chart.

## DRILLING PERMITS BY DISTRICT

DISTRICT	Permits Issued	
	1964	1965
Basin	166	117
Northern	9	7
Southeastern	267	247
Southwestern	77	63
Western	64	60
Totals	583	494

The consistently higher figures for the southeastern district reflects the exploration and development activity in the St. Clair-Macomb County area, and in the areas adjacent to the Albion-Scipio oil field trend.

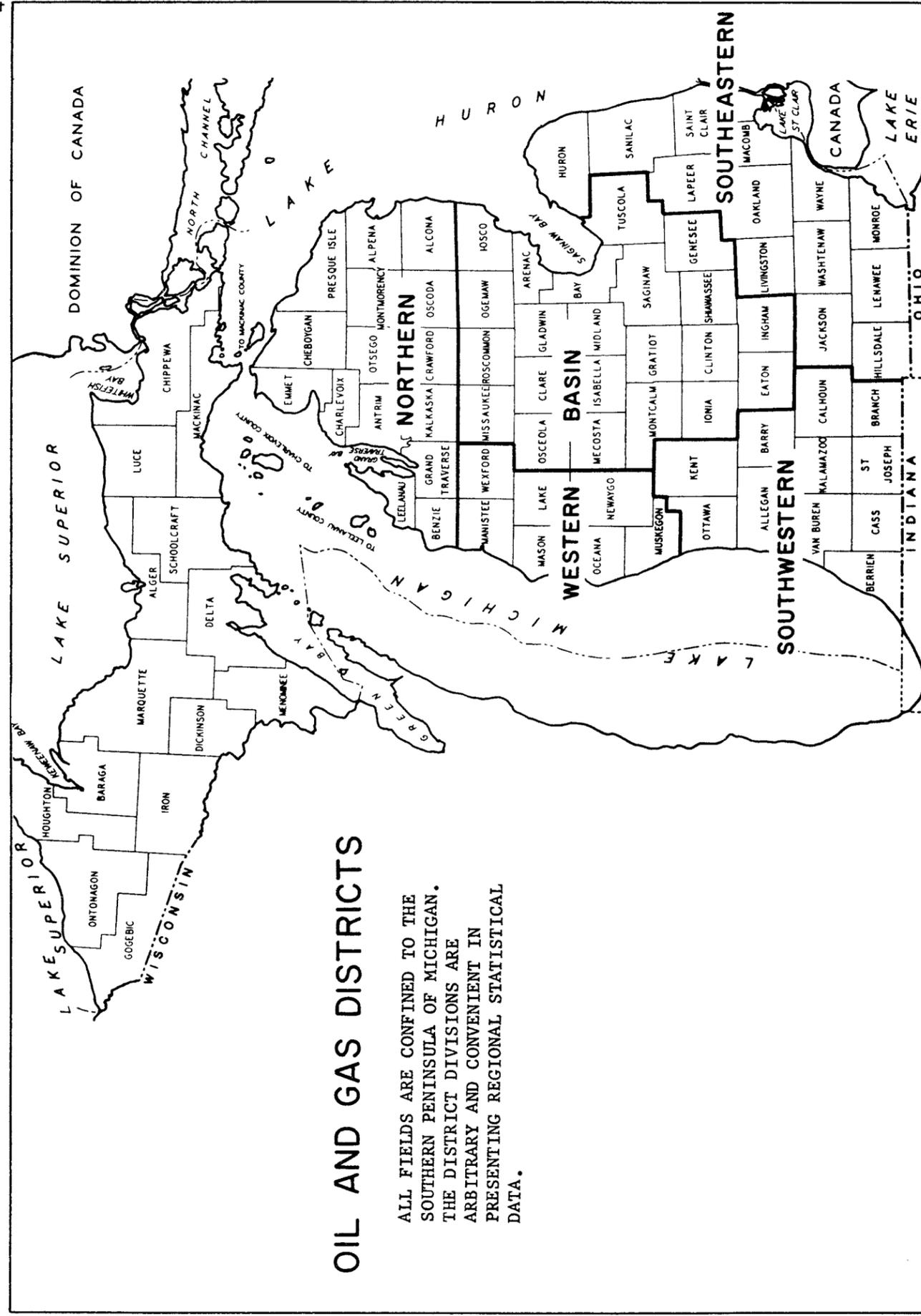
Permits for 4 gas storage wells, 2 LFG storage wells, and 1 geological information well are included in the preceeding chart. The fluctuation in the number of permits issued for service wells of this kind are as follows:

Service Wells	1964	1965	1966
Gas storage, Observation, Injection, etc.	122	106	7

No Geological Test permits were issued in 1966.

\* \* \* WELL COMPLETIONS \* \* \*

The following tabulation shows the number of exploratory and development wells completed over a 3-year period. The figures do not include deepened wells, reworked wells, gas storage reservoir wells, or others not directly related to exploratory or field development drilling.



## OIL AND GAS DISTRICTS

ALL FIELDS ARE CONFINED TO THE SOUTHERN PENINSULA OF MICHIGAN. THE DISTRICT DIVISIONS ARE ARBITRARY AND CONVENIENT IN PRESENTING REGIONAL STATISTICAL DATA.

### EXPLORATORY AND DEVELOPMENT WELL COMPLETIONS

Year	Exploratory Wells		Development Wells		Totals
	Oil	Gas	Dry	Oil Gas Dry	
1964	7	5	221	75 43 155	506
1965	6	6	189	47 28 102	378
1966	8	3	175	49 42 111	388

Nearly 38% of the wildcat wells and 26% of the development wells were drilled in St. Clair and Macomb Counties. Exploration in these counties was directed toward finding new Silurian reefs. Elsewhere, wildcat wells were drilled in 34 other counties, and development wells (excluding facility, LPG and miscellaneous wells) in 27. Most of these were drilled to Devonian or younger formations.

Total drilled-well footage decreased in response to fewer wells drilled during the year. The average drilled footage per exploratory well was about 3015 feet, and for development wells, 3012 feet. The fluctuation of drilled footage through a 3-year period is as follows:

Footage Class	Amount of Drilled Footage	
	1964	1965 1966
Exploratory	654,224	602,682 560,941
Development	924,584	587,457 608,386
Service	217,027	254,403 33,370
<b>Total</b>	<b>1,795,835</b>	<b>1,444,542 1,202,697</b>

The number and class of well completions by month and district for 1966 are shown on Table 2. The number and class of completions by counties for 1966 are shown on Table 1, and for prior years, on Tables 18 and 23.

\* \* \* DISCOVERY WELLS \* \* \*

State-wide, the discovery-to-dry hole ratio for exploratory tests drilled was about 1:17 compared with 1:16 in 1965. Nearly 38% of the exploratory or wildcat

wells were drilled in St. Clair and Macomb Counties. The discovery well ratio in these counties was about 1:35 compared with 1:18 in 1965. An analysis of discoveries through a 3-year period is shown in chart form. Devonian and Mississippian formations have produced most of Michigan's oil and gas. The chart helps point out the continued importance of Devonian and younger formations as drilling objectives in Michigan's oil and gas exploration activities.

### ANALYSIS OF DISCOVERY WELLS BY GEOLOGIC SYSTEM

System	Formation or Pay	Number of Discoveries	
		1964	1965 1966
Pennsylvanian	"Michigan Stray Ss."	none	none none
	"Berea"	3	1 1
Mississippian	Antrim Shale	none	none none
	"Traverse Lime"	5	5 3
Devonian	Dundee	1	1 1
	"Reed City"	none	1 3
Silurian	Detroit River	1	none none
	"Sour Zone"	1	none none
Ordovician	Richfield	--	-- 2
	Salina-Niagaran reef	1	4
Cambrian	Niagaran reef	none	none 1
	Trenton-Black River	none	none none
	Prairie du Chien	none	none none

All discovery wells are listed on page 6. Except for the 2 new Salina-Niagaran reef fields, none of the discoveries appears to have oil or gas potential greater than a class E pool (less than 1 million barrels oil or 6 Bcf. gas, A.A.P.G. classification). All 1966 discoveries are in established and potentially productive regions. None opens for exploration large areas of new, undrilled territory. They do provide further incentive for exploration, especially among the smaller independents.

The single Ordovician outpost discovery to the prolific Albion-Scipio trend is of special interest. This

well was drilled about one-half mile west and near the southern end of the trend. It established the first production west of the main part of the field. Oil production from this single well outpost amounted to more than 23,000 barrels at year's end. Several dry holes have been drilled in an attempt to extend the productive area or join it to the main part of the field. On the east side of the trend, at least 5 linear and very narrow spurs of productive area have been discovered and linked by development drilling to the central part of the field. The west side of the trend has not been adequately explored. The outpost discovery shows that more oil and gas are still to be found adjacent to the trend. Exploration for these linear features will be slow and costly in terms of dry holes drilled. Yet, their extension and delineation may provide insight to the nature of Ordovician fracture patterns in southern Michigan. Recognition of these fracture patterns, should they exist, may ultimately lead to new oil fields like the Albion-Pulaski-Scipio trend. This remarkable field, an apparently dolomitized fracture system in Ordovician age rocks, extends over a distance of nearly 35 miles. It has produced close to 67 million barrels of oil and over 60 million Mcf. gas since 1957.

\* \* \* OIL AND GAS PRODUCTION \* \* \*

Oil production declined slightly in 1966. No large reserves were found or developed during the year that would offset the decline. Oil production amounted to 14,273,099 barrels as compared with 14,728,223 barrels produced in 1965.

Gas production amounted to about 34,120,013 Mcf. as compared with 35,120,368 Mcf. in 1965. Prompt conversion of newly developed reef reservoirs to gas storage fields has had definite impact on recent domestic gas production trends, whereby high volume withdrawal from a reef field one year is followed by shut-in and conversion to gas storage the subsequent year. Thus, the remaining reserves from the converted

field are immediately diverted from market to cushion gas.

LPG production stripped from Michigan gas amounted to 1,846,702 barrels. The bulk of this production came from the Albion-Scipio, Belle River Mills, Boyd, and Reed City gas plants. An additional 495,617 barrels were stripped from gas imported into Michigan via pipeline.

Oil and gas production for 1966 is shown on Table 4. Production by individual fields or pools is found in Part 2. Production by month and by geographic district is shown on the following charts.

OIL AND GAS PRODUCTION BY MONTH

Month	Production	
	Barrels Oil	MCF Gas
January	1,197,159	2,510,768
February	1,123,672	2,777,864
March	1,212,287	2,635,167
April	1,207,260	2,718,874
May	1,226,397	2,542,473
June	1,190,758	2,428,438
July	1,174,951	2,919,725
August	1,221,059	3,701,084
September	1,162,367	2,774,833
October	1,206,068	2,744,311
November	1,146,499	3,141,324
December	1,204,622	3,225,152
Totals	14,273,099	34,120,013

OIL AND GAS PRODUCTION BY DISTRICT

District	Production	
	Barrels Oil	MCF Gas
Basin	3,900,431	2,622,314
Northern	105,769	370,819
Southeastern	7,081,646	26,295,477
Southwestern	2,903,260	4,375,935
Western	281,993	455,468
Totals	14,273,099	34,120,013

1966 DISCOVERY WELLS

Field	County and Location	Operator and Lease	Permit Number	Comp. Date	Depth to Pay	Total Depth	Initial Production		Basis for Form. Loc.
							n=(N) IP BOPD	t=(T) IP MCF/GPD	
Peacock, Sec. 7	Lake	Miller Bros. etal #1	26366	7-12	3001	3003	P8 <sup>t</sup>		R. C. Sub.
Peacock, Sec. 9	7-19N-13W Lake	USA-Peacock No. 1 Cook Bros. etal	26552	9-17	2289	2293	P40 <sup>t</sup>		Trav. Sub.
Muttonville	9-19N-13W Macomb	Hannon etal No. 1 Mich. Cons. Gas Co.	26437	7-16	2576	3039	gas, no gauge		Niag. Grav.
Hardy Dam	13-4N-14E Mecosta	Fawver No. 1 Mich. Cons. Gas Co.	26447	5-29	3351	3393	F72 <sup>n</sup>		R. C. Sub.
Mecosta	5-13N-10W Mecosta	Herring No. 1 The Taggart Co.	26310	1-23	1345	1359		1620 <sup>n</sup>	Stray Sub.
Vogel Center	10-14N-8W Missaukee	Colegrove No. 1 Merrill Drlg. Co.	26335	3-17	3892	3895	P70 <sup>t</sup>		Dd. Sub.
Entrican	32-21N-6W Montcalm	Mulder No. 2 The MOCO	26555	10-12	2870	2907	P10 <sup>t</sup>		Trav. Sub.
Carey Lake	21-11N-7W Newaygo	Enness etal No. 1 J. R. Barwick	26435	8-12	3411	3413	F100 <sup>t</sup>		R. C. Sub.
Four Corners	26-14N-11W St. Clair	State-Goodwell No. 1 Economy Oil & Gas Co.	26600	11-27	2205	2465	gas, no gauge		Niag. Sub.
	1-3N-15E	Guldenstein No. 1							

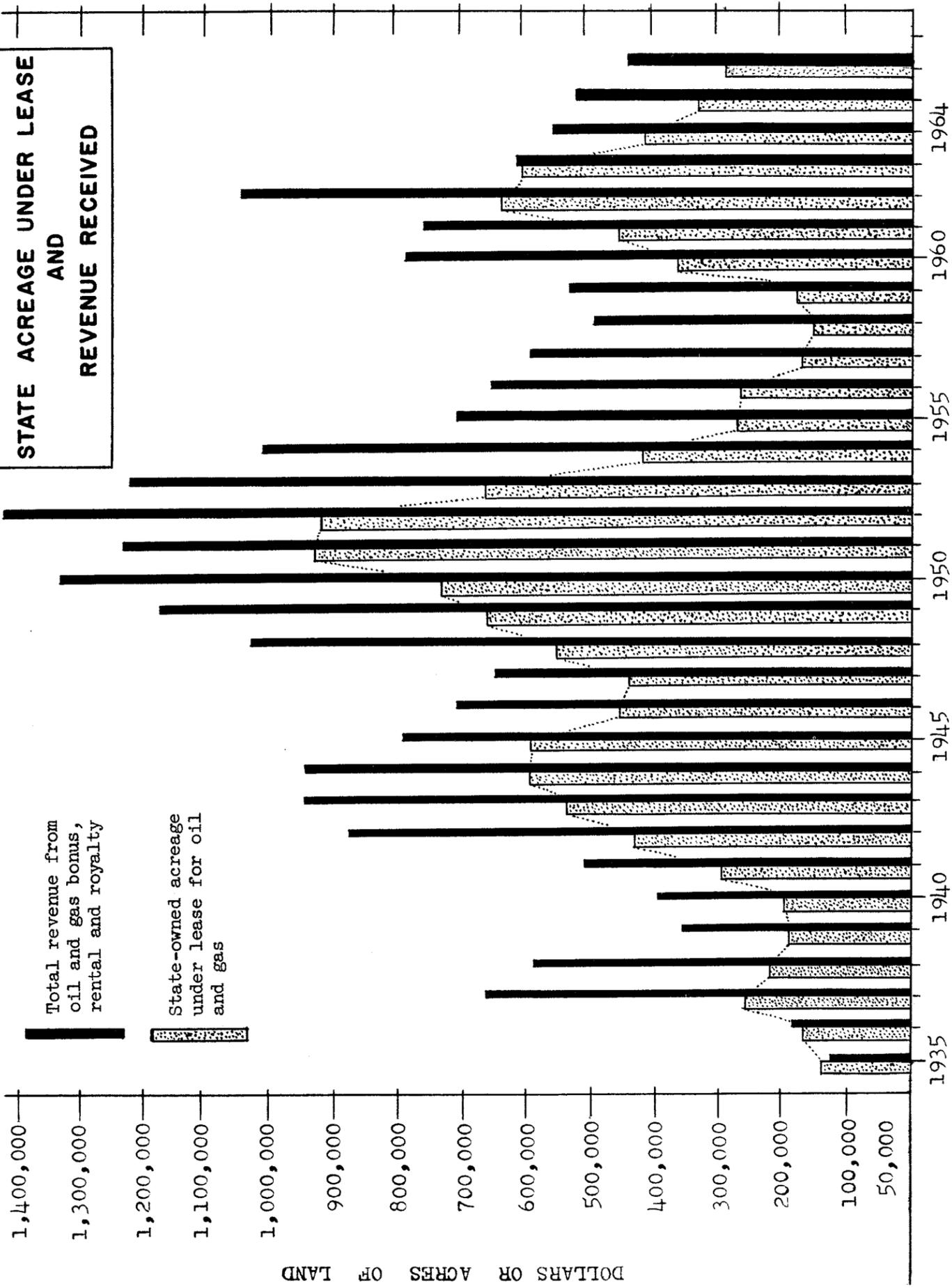
NEW OIL FIELDS

OUTPOST/EXTENSION DISCOVERIES

Scipio	Hillsdale	Bell & Gault Drlg. Co.	26114	2-16	4163	3850	F90 <sup>t</sup>		Trent. Sub.
Oxbow	35-5S-3W Mason	Pearson No. 1 R. J. Gorman	26618	10-21	1672	1672	P20 <sup>t</sup>		Trav. Sub.
	26-17N-17W	Helenius No. 1							

NOTE: (T) IP refers to Initial Potential after acid, sand-fracture, or a combination of well stimulation methods.

(N) IP refers to Natural Initial Potential or Production



\*\*\* DEEP TESTS \*\*\*

The deepest hole drilled in Michigan in 1966 reached a total depth of 6661 feet in Ordovician Black River age rocks. The well was drilled near the north end of the Howell anticline and on the west side of the structure. The top of the Trenton group was about 875 feet structurally lower than a previously drilled dry hole located about 3/4 mile to the east and higher on structure. No shows of hydrocarbons were reported. The test further delineates the Howell structure which has been scantily explored. The Howell gas field (now a gas storage reservoir), the Fowlerville gas field and, at the southern end, the Northville oil field are located on and along parts of this anticlinal complex.

All 5 Cambrian tests drilled in 1966 were located around the southern edge of the basin where these rocks are at a shallower depth. None encountered shows of oil or gas in Cambrian rocks. Locations of these tests and others are shown on the chart below.

\*\*\* OIL AND GAS VALUATION \*\*\*

The average price paid at the wellhead for Michigan Crude was \$2.87 per barrel. The 1966 total valuation of this mineral resource amounted to about \$40,912,946 as compared with a valuation of \$41,036,743 in 1965.

Gas produced from Michigan fields was valued at \$8,773,844 as compared with \$9,303,334 in 1965. The average price of Michigan gas sold at the wellhead was \$.26 per MCF. LPG's stripped from Michigan produced gas was valued at about \$3,878,074. In addition, LPG's stripped from imported gas was valued at about \$1,040,795.

\*\*\* OIL AND GAS FIELDS \*\*\*

New oil field discoveries in 1966 increased the number of active oil fields to 193. There were three fields or pools abandoned and two re-activated during the year. New well completions, including reworks and wells deepened to lower pools, increased the year-end total of producible wells in the state to 4,315. This figure includes 314 wells which were shut down or shut in, but does

IMPORTANT 1966 DEEP TESTS

County	Location	Operator and Lease	Permit Number	System and Formation	Total Depth	Expl. Class	Results
Hillsdale	20-6S-4W	Houseknecht Oil Prod., Inc. #1 Price etal	26500	Camb., Tremp.	4088	NFW	D & A
Hillsdale	3-9S-1W	Liberty Petroleum Corp., #1 Fellows	26655	Camb., Tremp.	3403	NFW	D & A
Jackson	15-2S-2W	Texaco, Inc. #1 Konkol	26541	Ord., P.D.C.	5197	NFW	D & A
Jackson	16-2S-2W	Texaco, Inc. #1 Benn	26548	Ord., P.D.C.	5085	NFW	D & A
Lake	23-19N-14W	C. J. Moskowitz #1 USA	26459	Sil., Niag.	5930	NFW	D & A
Lenawee	13-7S-2E	Ashland Oil & Refining Co. #1 Muck	26411	Camb., Tremp ?	3800	NFW	D & A
Livingston	21-4N-3E	Cobra Oil & Gas Corp. etal #1 Sherwood	26623	Ord., B.R.	6661	NFW	D & A
Mason	30-20N-17W	Isbrandtsen Oil & Gas Co. #2 Carnagel Oil	26465	Sil., Niag.	4357	NFW	D & A
Presque Isle	14-34N-5E	Alinda Hunt Hill Trust #1 Reisener	26544	Sil., Niag.	3144	NFW	D & A
Sanilac	27-9N-15E	Hallwell Gas & Oil #1 Spencer	26480	Camb., E.C.	6292	NFW	D & A
Van Buren	8-2S-14W	Alkay Oil Co. #1 McKnight	26265	Ord., Trenton	3004	NFW	D & A
Van Buren	24-2S-14W	Hallwell Oil & Gas #1 Ignacek	26313	Sil., Niag.	2041	NFW	D & A
Van Buren	35-3S-14W	L. A. Shimmell #1 Reed	26706	Camb., Fran. ?	3628	NFW	D & A
Washtenaw	6-1S-3E	W. R. Albers #1 Kaiser	25698	Ord., B.R.	4784	DPT	D & A

TABLE 1. DRILLING PERMITS, WELL COMPLETIONS, OIL AND GAS PRODUCTION BY COUNTY, 1966 (Sheet 1 of 2)

County	Permits Issued	Service Wells							Total Completions	County Production	
		Oil Wells	Gas Wells	SWD GS	Wtr. Inj.	Geol. Info.	LPG Wells	Dry Holes		Barrels Oil	MCF Gas
Allegan	13	2						9	11	280,190	244,594
Antrim	2							2	2	298,405	
Arenac	0							3	3	13,078	
Barry	0							11	15	2,359,457	3,964,466
Bay	0							1	1	4,759	
Berrien	0							1	2	602,875	211,907
Branch	3							1	1	86,922	369,834
Calhoun	17	4						2	2	2,960	
Cass	1							1	1	385,712	
Clare	2							1	2	35,199	2,189
Clinton	1			1				29	35	4,596,984	4,517,356
Crawford	1							1	1	3,390	
Genesee	3							1	1	280,301	4,792
Gladwin	1		2					2	2	1,680,446	2,103,120
Grand Traverse	1							1	1	17,219	15,459
Gratiot	37	6						10	12	14,534	24,934
Hillsdale								7	18	33,340	
Huron								1	1	221	16,698
Ionia	2							2	2		
Iosco	2							2	3		
Isabella			1					13	17		
Jackson	17	4						1	1		
Kalamazoo								10	12		
Kalkaska								1	1		
Kent	1							3	3		
Lake	9	2						1	1		
Lapeer	5	2						1	1		
Lenawee	24							11	18		
Livingston	1							1	1		

TABLE 1. DRILLING PERMITS, WELL COMPLETIONS, OIL AND GAS PRODUCTION BY COUNTY, 1966 (Sheet 2 of 2)

Macomb	37									33	41	3,070	9,028,057
Manistee	1		3					5		1	1		
Mason	25	6	1					15	22	15	22	126,775	92,061
Mecosta	27	12	2					10	24	10	24	89,872	934
Midland	2							1	1	1	1	224,834	672,791
Missaukee	6	1						5	6	5	6	444,199	
Monroe												7,200	5,944
Montcalm	7	1						3	4	3	4	202,407	
Montmorency	16	3						10	13	10	13	34,558	
Muskegon								7	8	7	8	24,312	
Newaygo	12	1											
Oakland	3							3	3	3	3	1,038	
Oceana	10							10	10	10	10	81,814	
Ogemaw	8	3	1					2	6	2	6	277,631	626,763
Osceola	12							11	15	11	15	435,420	290,875
Oscoda	8											1,628	
Otsego	6	1	6					4	6	5	6	133,039	985
Ottawa													151,416
Presque Isle	1								1	1	1		
Roscommon	1											177,487	714,058
Saginaw	2											25,583	
Sanilac	92	5	17					1	88	1	1	709,608	9,274,217
St. Clair	3	2						65	3	1	3	79,989	
Tuscola	2	1						4	5	4	5	11,387	
Van Buren	1	1							2			28,345	177,220
Washtenaw	3								3			18,005	1,153,875
Wayne	2								2				455,468
Wexford									2				
Totals	430	57	44					10	404	290	404	14,273,099	34,120,013

Includes gas storage field observation wells.

Does not include reworks resulting in gas wells.

Does not include reworks resulting in oil wells.

TABLE 2. DRILLING PERMITS AND NEW WELL COMPLETIONS BY DISTRICTS AND BY MONTHS, 1966

PERMITS ISSUED	DISTRICTS						Totals
	Basin	Northern	Western	Southwestern	Southeastern		
CLASSIFICATION OF NEW WELL COMPLETIONS	79	11	75	43	222	430	
Oil Wells (1)	19	0	12	9	17	57	
Gas Wells (2)	4	8	0	0	33	45	
Gas Storage Wells	5	0	0	0	5	10	
Geological Information Test	0	0	0	0	1	1	
LPG Storage	0	0	0	0	2	2	
Brine Disposal Well	0	0	0	0	1	1	
Dry Holes	44	1	55	33	153	286	
Total Well Completions	72	9	67	42	212	402	
EXPLORATORY WELLS COMPLETED							
Exploratory Tests D & A	29	1	43	16	97	186	
Successful Exploratory Tests	4	0	4	0	3	11	
Total Exploratory Tests	33	1	47	16	100	197	

PERMITS ISSUED	MONTHS												Totals
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
CLASSIFICATION OF NEW WELL COMPLETIONS	34	27	28	41	31	34	37	36	43	42	40	37	430
Oil Wells (1)	1	3	4	2	5	6	3	7	8	9	6	3	57
Gas Wells (2)	3	3	1	4	4	6	5	5	2	7	3	1	44
Gas Storage Wells	1			1	1	3	2	3					10
Geological Information Test									1	1			2
LPG Storage													
Brine Disposal Well													
Dry Holes													
Total Well Completions	29	30	16	15	23	24	24	24	24	28	21	32	290
EXPLORATORY WELLS COMPLETED	34	36	21	21	33	39	34	39	35	44	32	36	404
Exploratory Tests D & A	22	18	9	9	15	15	18	15	15	16	12	22	185
Successful Exploratory Tests	1	1	1	1	1	2	2	1	1	2	1	1	11
Total Exploratory Tests	23	19	10	9	16	15	20	16	16	18	13	22	197

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

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

not include gas wells or injection wells which produced some oil during the year. The number of oil wells on production at year's end was about 4000.

New gas field discoveries in 1966 increased the number of producible dry gas fields and pools to 81. Only 59 of these fields produced gas for commercial sale, others were shut in or used for domestic or lease fuel. The total number of gas wells in the fields amounted to 429. Five small gas fields or pools were abandoned during the year.

There were 125 wells abandoned in 1966. These included pay zone abandonments and wells converted to injection wells. Data on individual oil fields are found in Part 2.

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

Crude oil imports to Michigan refineries increased from 36,468,716 barrels in 1965 to 39,082,719 barrels in 1966. Of this amount, 32,572,587 barrels came from western and mid-western states and 6,510,132 barrels came via pipeline from western Canada oil fields.

Oil exported to northern Indiana (Ft. Wayne) and Ohio refineries amounted to 378,963 barrels in 1966 as compared with 23,245 barrels in 1965.

Compilations by the Gas Section, Michigan Public Service Commission, indicate that 599,174,318 MCF of gas was imported by pipeline to Michigan storage fields and markets. Gas imports were from Texas, Louisiana, Oklahoma, and Kansas fields.

Large volumes of imported gas are stored in Michigan's gas storage field network during warm months and withdrawn during the winter season to augment gas delivered by pipeline. Michigan had 23 gas storage fields in operation at the end of 1966. The storage fields differ in areal extent and capacity, varying from several hundred to several thousand acres. The Six Lakes field (cover photo), central Michigan, spreads over more

than 11,000 acres. Before conversion to gas storage, the field produced more than 51½ billion cubic feet of gas from the Michigan Stray Sandstone formation. The Belle River Mills field, eastern Michigan, is a Niagara reef reservoir covering about 800 acres. Production from this field amounted to over 21 billion cubic feet of gas before conversion to gas storage.

The "Loreed" project in the Reed City field, central Michigan, is a combination storage-repressuring operation involving the Dundee-Reed City oil pool. According to the American National Gas Company Annual Report 1966, the Reed City "Loreed" and Belle River Mills reservoirs were capable of delivering an aggregate of over one-half billion cubic feet of gas on a peak day. Their capacity will be expanded and when development is completed the two fields are expected to have about three times their present deliverability.

\*\*\* LPG EXTRACTION \*\*\*

LPG recovery from gas plant operations increased from 86,891,724 gallons in 1965 to 98,377,386 gallons in 1966. The top 6 fields or plants producing LPG's were: Albion-Scipio, 30,356,822 gallons; Willow Run, 20,815,896 gallons; Boyd, 17,569,415 gallons; Belle River Mills, 16,848,982 gallons; Reed City, 12,030,799 gallons, and Hamilton, 342,518 gallons. The Belle River Mills plant functions as a gas recycling and storage field facility. The Boyd plant serves 10 fields and receives both dry and oil well gas. The Reed City plant serves a combination storage and repressuring operation now in progress in the Reed City field. The combination storage-repressuring operation involves Reed City reservoir rocks. The project has been designated "Loreed" by the operating company.

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

The Regulatory Unit of the Oil and Gas Section received 480 new well records and well rework records from Michigan operators during the year. Many of these

MAJOR BRINE PRODUCING FIELDS

Field	Rank	1966	1965	1964
Coldwater	1	27,270	29,557	31,945
Albion-Scipio Trend	2	18,845	10,273	8,798
Porter	3	8,239	8,685	8,547
Deep River	4	7,865	7,870	7,570
Freeman-Redding	5	6,640	5,560	6,695
McBain	6	6,180	6,467	5,524
Stony Lake	7	4,154	4,397	6,362
Adams, North	8	3,583	3,262	2,857
Vernon	9	3,400	3,240	3,850
Reed City	10	2,919	3,416	4,951
Prosper	11	2,700	2,750	2,925
Gilmore	12	2,350	2,000	1,850
Reynolds	13	2,297	3,656	4,210
Pentwater	14	2,194	1,926	1,183
Clayton	15	2,098	2,079	1,863
Fork	16	2,025	2,650	2,475
Total		102,759	97,788	101,605
State Total (all fields)		144,382	145,102	148,972

\*\*\* REVISIONS AND CORRECTIONS \*\*\*

Revisions have been made for certain oil production figures shown on Tables 18 and 19 (pages 58 and 59 respectively) appearing in Michigan's Oil and Gas Fields, 1965 issued in 1966. These tables appear as Tables 20 and 21, on pages 52 and 53, of this 1967 issue. Revisions are marked with an asterisk (\*).

Oil and gas well figures on last years Table 23 were inadvertently deleted from Arenac, Barry, Bay, Berrien, Cass, Crawford, and Gratiot Counties. These have been restored and brought up-to-date.

The table titled: Fluid Injection into Producing Formations in Oil Fields now lists only the more important projects. Others, listed in previous years, have been arbitrarily deleted from this issue.

Charts showing the amount of oil field brine returned to specific subsurface formations have been deleted from this issue. Refer to previous issues for specifics on subsurface oil field brine disposal.

new records were made available for public distribution by the Petroleum Geology Unit which processed, published, and incorporated 507 new logs into the log library. More than 26,000 published well logs and other well records are available for purchase or use and inspection at Survey offices.

During the year, over 8,000 descriptive well logs were printed and distributed upon request to individuals and companies interested in Michigan's oil and gas exploration industry. Individual log orders ranged from a single log request to as many as 960. In addition to individual log orders, 48 subscription log orders were mailed out each month to individuals, companies, government agencies, and universities.

The Survey loaned 129 sets of well samples to company or consulting geologists and 171 sets to university students or personnel for postgraduate studies and other projects. An additional 84 sets were also examined at Survey offices. The Survey acquired 384 new sets from recently drilled wells and 460 sets from discontinued, company sample libraries.

\*\*\* OIL FIELD BRINE PRODUCTION \*\*\*

Oil field brine production in 1966 was at about the same level as in past years. 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 adjacent chart.

The fields shown on the chart account for about 70 percent of the state's total oil field brine production. The bulk of the brine is returned to the producing formation, mainly the Traverse and Dundee. Most of the balance 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 on the oil and field tables in Part 2. Other data is found on Table 8, page 34, and Table 26, page 59.

\*\*\* 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. Act No. 61, amended, now provides that the State Geologist shall act as Supervisor of Wells. Heretofore, the Director of Conservation had served in that capacity. 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 1966 are summarized on the following chart.

Hearing Per Month	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Items or Causes Heard													
Spacing Orders:													
Adopted	2		1		1			2					7
Amended	2				1		1		2				8
Abrogated							5						5
Proration Orders:													
Adopted													1
Amended													0
Abrogated							1						2
Exceptions to Spacing Orders:													
Approved	3	2	5	2	4	2	1	1	2	3			25
Denied		2				1							3
Pooling, Drilling Unit:													
Adopted													4
Denied							3						0
Determine Reservoir Status	1						3		1				6
Unitization of Pool										1			1
Authorize, Directional Drilling													1
Authorize, Water Injection													1
Authorize, Geol. Info. Well											1		1
Items heard, no action taken:												1	2
Total Items or Causes	8	4	6	3	8	5	13	5	6	2	3	6	67

## \*\* ACTIVE MICHIGAN OIL REFINERIES \*\*

<u>COMPANY</u>	<u>REFINERY LOCATION</u>	<u>NOMINAL CAPACITY*</u> <u>BBLs. DAY</u>
Bay Refining, Division Dow Chemical Company	Bay City	15,000
Crystal Refining Company	Carson City	6,200
Delta Terminal Company	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	45,000
Marathon Oil Company (abandoned 1966)	Muskegon	-----
Naph-Sol Refining Company	Muskegon	10,000
Osceola Refining Company	West Branch	5,000
Petroleum Specialties, Inc.	Flat Rock (Inactive)	6,500
Socoxy Mobil Oil Company	Trenton	40,500
	Total Refinery Capacity	172,200

\*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 names 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 FOOL**. 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.

TABLE 4. -- MICHIGAN OIL FIELDS (Sheet 1 of 7)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE		DEPTH IN FEET	OIL GRAVITY A.P.L.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	TO END IN 1966	COMP. IN 1966	NUMBER OF OIL WELLS		OIL PRODUCTION IN BARRELS		DRILLED ACRES	RECOVERY PER ACRE (BBL.S.)	BRINE PRODUCTION BBL.S./DAY		TOTAL PRODUCTION
				THICKNESS IN LITHOLOGY	D							PRODUCING AT END OF 1966	SHUT IN OR SHUT DOWN	PRODUCED IN 1966	CUMULATIVE THROUGH 1966			DISPOSAL SURFACE	SUBSURFACE	
ADAIR	ST. CLAIR	1961	SALINA-NIAGARAN	2719	10	D	41.4	NIAGARAN	2755	17	0	0	16	0	24,463	520	434	215	0	215
ADAMS	ARENAC-BAY	1937	TRAVERSE	2032	15	L	37.0	BOIS BLANC	5079	24	0	0	8	4	24,463	240		1	1	2
		1937	DUNDEE	2958	15	L	34.7			31	0	0	17	0		310		5	17	22
		1941	RICHFIELD	4278	5	L	35.5													
		1956	DETROIT RIVER SZ	3943	5	L	39.6			31	0	0	8	2	22,176	1,080	849	0	1	1
															THE 8 WELLS INCLUDE 3 RICHFIELD, 1 SOUR ZONE AND 2 RICHFIELD & SOUR ZONE					
ADAMS, NORTH	ARENAC	1940	DUNDEE	2905	15	D	32.0	DETROIT RIVER	4469	49	0	0	19	0	35,357	9,128,332	19,422	3,581	2	3,583
ANDON	TUSCOOLA	1936	DUNDEE	2678	17	L	37.3	SYLVANIA	4130	50	0	0	34	3		800		192	12	204
		1938	DETROIT RIVER SZ	3422	11	D	35.9									500				
		1954	RICHFIELD	3774	6	D	39.2			27	0	0	19	1	47,231	1,680,169	40	1,255	0	*32
															THE 19 WELLS INCLUDE 2 RICHFIELD, 12 SOUR ZONE AND 5 SOUR ZONE & DUNDEE					
ALBION-PULASKI-SCIPLO TRENDS: FIELD AND PRODUCTION DATA LISTED BY TOWNSHIP AND COUNTY																				
LEE TWP.	CALHOON	1961	NIAGARAN	3060	20	D	24.2	PRAIRIE DU CHIEN	4912	1	0	0	1	0		80		0	*15	15
		1960	TRENTON-BLACK RIVER	4600	24+	D				12	1	0	10	2	127,674	950,988	220	3,170	0	0
SHERIDAN TWP.	CALHOON	1960	TRENTON-BLACK RIVER	4179	10+	D	40.0	PRAIRIE DU CHIEN	4791	25	1	0	23	3	321,148	1,846,045	480	3,846	1,221	0
		1958	TRENTON-BLACK RIVER	3952	7	D	44.0	PRAIRIE DU CHIEN	4623	140	1	2	135	6	1,659,152	16,402,225	2,720	5,295	3,200	0
PULASKI-HOMER TWPS.	JACKSON	1959	TRENTON-BLACK RIVER	3766	66+	D	39.6			136	4	0	133	1	1,738,281	16,910,937	2,600	6,504	4,481	0
SCIPLO-ENNETTE-SOSOGON TWPS.	HILLSDALE	1957	TRENTON-BLACK RIVER	3576	50+	D	41.4	PRAIRIE DU CHIEN	4202	188	5	0	177	8	3,711,552	28,436,877	3,340	8,514	6,262	4
ADAMS TWP.	HILLSDALE	1959	TRENTON-BLACK RIVER	3984	6+	D	42.0	PRAIRIE DU CHIEN	4162	51	1	2	43	1	885,431	4,370,248	920	4,750	751	1
TREND TOTAL:										553	13	4	522	22	8,450,238	66,917,320	10,340	6,459	15,915	29
AREBELA	TUSCOOLA	1946	DUNDEE	2557	7	L	35.3	DETROIT RIVER	3375	35	0	0	2	0	13,719	306,597	350	876	0	0
ASHTON	OSCEOLA	1945	TRAVERSE	2950	4	L	42.0	DETROIT RIVER	3686	2	0	0	1	0		80		0	0	0
		1945	DUNDEE	3645	5	L	40.0			4	0	0	4	0	5,785	405,766	200	1,449	200	0
ATLANTA	MONTMORENCY	1945	DETROIT RIVER	2183	5	D	36.2	DETROIT RIVER	2550	3	0	0	1	0	0	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	2,730	41,007	160	256	0	1
															THE 3 WELLS INCLUDE 2 RICHFIELD AND 1 RICHFIELD & SOUR ZONE					
BAIRD	GLADWIN	1949	DUNDEE	3933	6	L	42.8	DUNDEE	4017	17	0	0	8	2	5,753	563,914	170	3,317	182	0
BEAVER CREEK UNIT	CHAMFORD-KALASKA	1947	RICHFIELD	4160	20	D	44.7	SYLVANIA	4503	100	0	0	59	1	105,284	6,190,097	4,040	1,532	158	0
BEAVERTON	GLADWIN	1934	DUNDEE	3929	12	L	41.3	RICHFIELD	5225	26	0	0	4	1	4,922	855,468	330	2,392	71	0
		1936	DUNDEE	3945	12	L	34.5	DETROIT RIVER	4977							700				
		1956	TRAVERSE	3231	6	L	41.0			22	0	0	19	0	24,935	1,564,465	10	2,203	217	3
															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	5	0	11,083	124,345	260	478	3	1
BELLE RIVER MILLS	ST. CLAIR	1961	NIAGARAN												THE 3 WELLS INCLUDE 2 RICHFIELD AND 1 RICHFIELD & SOUR ZONE					
BELLY ACRES	MONTCALM	1944	DUNDEE	3470	1.3	D	48.2	DUNDEE	3615	7	0	0	3	2	393	333,543	220	1,516	0	*175
BENTLEY	GLADWIN	1937	DUNDEE	3510	13	L	42.1	SYLVANIA	5114	88	0	1	50	3	39,745	2,682,806	1,960	1,369	87	11
		1952	RICHFIELD	4440	14	L	40.0								THE 50 WELLS INCLUDE 49 DUNDEE AND 1 TRAVERSE, DUNDEE & RICHFIELD					
		1952	TRAVERSE	2855	6	L	34.1													
BERLIN	ST. CLAIR	1960	NIAGARAN	3800	25	D	42.8	CINCINNATIAN	4310	4	0	0	4	0	27,718	277,742	140	1,984	0	0
BEVANS LAKE	MECOSSA	1951	TRAVERSE	2997	1	L	44.2	REED CITY	3731	4	0	0	1	0	1,349	86,938	40	2,173	100	0
BIG HAND	ST. CLAIR	1961	NIAGARAN	2898	5+	D	39.5	CLINTON	3097	10	0	0	10	1	102,057	429,170	220	1,951	41	1

TABLE 4. -- MICHIGAN OIL FIELDS, Continued (Sheet 2 of 7)

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	16,169	719,974	200	1,200	0	0
BILLINGS, SOUTH	GLADWIN	1957	DUNDEE	3540	5	D	39.5	DETROIT RIVER	4152	8	0	0	8	0	9,917	116,433	70	1,633	0	1
BIRCH-BELA	SAGINAW-TUSCOOLA	1951	DUNDEE	2504	7	L	36.0	DETROIT RIVER	3263	28	2	0	28	1	17,621	196,517	320	614	0	*5
BIRCH RUN	SAGINAW	1954	DUNDEE	2536	10	L	36.2	DUNDEE	2716	34	0	0	32	3	17,540	449,494	463	936	0	*1
		1934	(REFER TO ABANDONED FIELDS)																	
BLOOMER	MONTCALM-TONIA	1944	TRAVERSE	2640	3.3	L	42.3	DETROIT RIVER	3271	29	0	2	7	0	18,266	1,894,655	530	3,575	940	*300
BLOODINGDALE	VAN BUREN	1938	TRAVERSE	1244	4	L	42.0	TRENTON	3090	431	0	2	28	4	8,922	9,957,040	4,060	2,465	1,005	12
BOYD	ST. CLAIR	1958	SALINA-NIAGARAN	2457	292	D	37.7	PRECAMBRIAN	4634	49	0	7	46	3	157,825	1,250,468	1,840	680	394	*7
BUCKETS, NORTH	GLADWIN	1956	DUNDEE	3615	14	L	39.0	SYLVANIA	5351	287	0	1	65	1	113,609	18,701,240	3,030	6,172	1,940	16
BUCKETS, SOUTH	GLADWIN	1956	DUNDEE	3570	11	L	39.0	DETROIT RIVER	4802	197	0	1	27	2	24,061	6,902,691	2,270	2,160	13	*14
															THE 5 WELLS INCLUDE 3 RICHFIELD, 1 SOUR ZONE AND 1 RICHFIELD & SOUR ZONE					
		1964	DETROIT RIVER SZ	4481	14	D	46.0			1	0	0	1	0	12,541	40,470	40	1,012	0	0
BURDELL	OSCEOLA	1959	DUNDEE	3678	4	L		REED CITY	3804	5	0	0	3	0		120		225	0	225
		1960	REED CITY	3802	2	D				1	0	0	1	1	5,038	137,884	40	862		
BUTMAN	GLADWIN	1949	DUNDEE																	
		1949	RICHFIELD	4921	10	D	41.6	SYLVANIA	5077	5	0	0	5	0	7,791	276,848	230	1,204	35	2
		1950	TRAVERSE																	
CAINAC	ST. CLAIR	1961	NIAGARAN																	
CAREY LAKE	NEWAYGO	1966	REED CITY	3411	2	D		REED CITY	3413	1	1	0	1	0	8,468	8,468	40	217	0	2
CATO	MONTCALM	1944	REED CITY	3542	3	D	44.7	DETROIT RIVER	3731	17	0	0	7	0	19,021	900,895	590	1,527	1,670	0
CEMAR	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	16,167	1,050,510	60	2,284	0	0
CHASE	LAKE	1943	BEREA	2460	4	SL		DETROIT RIVER	3734	2	0	0	1	0	340	7,480	20	374	0	0
CHESTERFIELD	MACOMB	1962	NIAGARAN	2508	7	D	40.3	NIAGARAN	2691	5	0	0	1	0	2,936	17,338	200	87	25	0
CHINA, SEC. 12	ST. CLAIR	1962	NIAGARAN	2509	11	D	39.1	CLINTON	2631											



TABLE 4.—MICHIGAN OIL FIELDS, continued (Sheet 5 of 7)

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		RECOVERY PER ACRE DRILLED ACRES	BRINE PRODUCTION		TOTAL PRODUCTION		
				THICKNESS AND LITHOLOGY	GRAVITY			TO END 1966	ABAND. 1966	PRODUCING AT END 1966	SHUT IN OR SHUT DOWN		PRODUCED IN	CUMULATIVE THROUGH		DISPOSAL SURFACE	SUBSURFACE
MEDINA	LENAREE	1961	TRENTON-BLACK RIVER	2921	18 D	40	3487	1	0	1	75	4,324	40	108			
MILLS, SEC. 1	MIDLAND	1957	DUNDEE	3450	2	40	3463	1	0	1	423	6,802	10	680	2		
MINERAL SPRINGS	OSCEOLA	1951	DUNDEE	3854	7 D	44.5	3963	12	0	3	3,031	295,005	240	1,229	0		
MIO	OSCEOLA-OSCODA	1946	RICHFIELD	4219	6 D	32.9	8544	4	0	2	1,627	47,775	160	299	0		
MOFFATT, SEC. 34	AERAC	1964	TRAVERSE	2100	4 D		3027	1	0	1	0	357	10	36			
MONTREY	ALLEGAN	1953	DUNDEE	(REFER TO ABANDONED FIELDS)													
MT. CLEMENS	MACOMB	1938	TRAVERSE	1618	3 L	37.6	3266	99	0	11	3,261	997,444	1,030	968	0		
MT. FOREST	MAY	1961	SALINA	2590	18 D		4695	1	0	1	0	65	10	7			
MT. PLEASANT	MAY	1947	DUNDEE	3025	9 D	34.1	4305	37	0	26	1	960	0	6	6		
		1952	TRAVERSE	2124	2 L	36.2	8544	4	0	2	0	15,099	812,235	80	781	12	
		1928	DUNDEE	3545	15 L	41.8	4621	485	0	144	11	100,011	27,092,850	5,710	4,745	818	
MUSKOGEE	MUSKOGEE	1928	TRAVERSE	1700	3.5 L	37.4	4754	7	0	19	0	6,809	6,995,233	3,170	2,207	233	
NELLSVILLE	ROSCOMON	1956	RICHFIELD	4932	17	42.2	4185	1	0	1	0		40	0	0		
NEW RICHMOND	ALLEGAN	1957	DUNDEE	3710	6	40.3		1	0	1	1	401	26,471	10	529		
NORTHVILLE	WASTENAW-WAYNE-OAKLAND	1965	TRAVERSE	1364	1 L		1365	1	0	1	0	(ABANDONED 1966)	104	104	10		
		1954	TRENTON-BLACK RIVER	4395	2+	39.8	5850	21	1	1	16	3			0		
		1960	NIAGARAN	3515	25 D	42.5		1	0	0	0	47,386	917,508	2,835	324	0	
OTISVILLE	GENESEE	1941	TRAVERSE	(REFER TO ABANDONED FIELDS)											0		
		1944	DUNDEE	2450	3 L	37.0	2674	5	0	2	0		40	1	0	1	
		1945	BEREA	1500	3 S	35.5		9	0	5	2	2,959	101,985	110	680	8	
OTTO, SEC. 32	OCEANA	1950	"BEREA"	1465	1 L			1	0	1	0	139	4,079	10	408	0	
OVERISEL	ALLEGAN	1938	TRAVERSE	1478	3 L	42.1	4060	164	0	1	28	13,170	2,892,125	1,770	1,654	68	
OXFORD	MASON	1958	TRAVERSE	1652	1 D	35.4	1660	4	1	0	4	2,875	78,915	40	1,973	62	
PARIS	MCCORMACK	1949	TRAVERSE	2890	10 D	43.6	3545	22	0	16	0	15,641	1,177,041	440	2,675	956	
PAW PAW	VAN BUREN	1963	TRAVERSE	1096	2 L	41.4	1098	8	1	4	1	797	18,568	160	116	10	
PAW PAW, SEC. 33	VAN BUREN	1964	TRAVERSE	1028	1 L	38.0	1032	1	0	1	1	0	0	10	7		
PEACOCK, SEC. 7	LAKE	1966	REED CITY	3001	4 D		3033	1	1	0	0	284	284	40	7	0	
PEACOCK, SEC. 9	LAKE	1966	TRAVERSE	2293	1 L	34.0	2293	1	1	0	1	912	912	40	23	0	
PENTWATER	OCEANA	1948	DUNDEE	2088	10 D	43.1	5383						2,000				
		1948	TRAVERSE	1585	8 L	40.4		143	0	1	59	47,766	6,469,312	1,400	1,903	2,194	
PETERS	ST. CLAIR	1957	SALINA-NIAGARAN	2615	2+	39.0	2862	88	2	0	83	302,639	3,182,510	1,760	1,797	653	
PETERS, EAST	ST. CLAIR	1961	SALINA-NIAGARAN	2590	17 D	41.6	2134	9	0	0	8	23,936	185,064	360	514	119	
PINCORNING	MAY	1944	DUNDEE	2898	7 D	36.2	3790	12	0	2	0	5,350	846,166	100	8,461	200	
PIPESTONE	BERRIEN	1958	TRAVERSE	(REFER TO ABANDONED FIELDS)													
PISTON	OTTAWA	1942	TRAVERSE	822	2 L	22.4	1353	2	0	1	0	(ABANDONED 1966)	85	20	4		
PORTER	MIDLAND	1933	DUNDEE	1878	2 L	37.8	2351	13	0	6	0	3,729	54,391	170	320	0	
		1942	DUNDEE	3415	12 L	46.6	9519	529	0	19	135	11	152,602	48,579,751	6,690	7,261	8,239
PROSPER	MISSAUKEE	1942	DUNDEE	3837	4 L	42.2	5254	13	0	1	6	0	15,540	1,678,392	520	3,228	2,700
		1954	RICHFIELD	(REFER TO ABANDONED FIELDS)													
PULLMAN, EAST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182

TABLE 4.—MICHIGAN OIL FIELDS, continued (Sheet 6 of 7)

PULLMAN, EAST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN	1949	TRAVERSE	1131	2 L	39.0	3020	25	0	0	13	0	4,362	363,175	250	1,453	182	3	185
PULLMAN, WEST	ALLEGAN</																		

TABLE 4. — MICHIGAN OIL FIELDS, Continued (Sheet 7 of 7)

FIELD NAME <small>(Cont. from Page 23)</small>	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		BRINE PRODUCTION		TOTAL PRODUCTION				
				DEPTH IN FEET	THICKNESS IN FEET	LITHOLOGY			TO 1966	ABAND. 1966-1966	PRODUCING AHEAD 1966	SHUT-IN SHUT-DOWN	PRODUCED THROUGH 1966	CUMULATIVE THROUGH 1966	DRILLED ACRES		RECOVERY PER ACRE DRILLED (BBL.S.)	DISPOSAL SURFACE	RECOVERY PER ACRE DRILLED (BBL.S.)	
STERLING	AREMAC	1952	DETROIT RIVER SZ	3918	5	D	41.1		41	0	0	36	2	80,408	1,948,424	1,600	965	0	2	2
STORY LAKE	OCEANA	1946	TRAVERSE	1630	19	L	44.9	3827	78	0	0	19	2	18,410	7,486,133	1,540	4,153	4,153	1	4,154
SUMNER	GRATIOT	1949	BEREA	(REFER TO ADJACENT FIELDS)																
SYLIAN	OSCEOLA	1953	TRAVERSE	2853	1	L	44.5	3366	35	0	5	22	4	35,199	1,007,669	350	2,879	495	0	495
TEXONIA	CALHOUN	1948	DUNDUE	3925	13.7	D	48.0	4100	11	0	0	2	1	3,219	1,178,162	440	2,677	760	0	760
TRENT	MUSKEGON	1959	TRAVERSE	3553	7	DL	34.5	4147	2	1	0	1	0	268	2,966	30	9	0	35	35
TROMBRIDGE	ALLEGAN	1949	TRAVERSE	2039	1	L		2118	2	0	0	1	0	314	30,133	40	753	0	0	0
VERNON	ISABELLA	1937	TRAVERSE	1358	2	L	41.2	2952	162	0	0	12	1	4,757	501,018	1,840	272	122	9	131
VOGEL CENTER	ISABELLA	1930	DUNDUE	3755	3	DL	38.6	3118	78	0	0	5	1	8,335	5,018,269	890	5,638	3,400	0	3,400
WALKER	MISSAUBIE	1966	DUNDUE	3892	3	L		3895	1	1	0	1	0	8,419	8,419	40	210	190	0	190
	KENT-OTTAWA	1938	TRAVERSE	1872	8	L	36.0	5222												
	"BEREA"	1940	DETROIT RIVER	1121	21	SL														
	DETROIT RIVER	1957	DETROIT RIVER	2132	12	D			783	0	18	444	10	182,876	15,880,058	10	1,853	15	123	138
	ALLEGAN	1944	TRAVERSE	1799	6	L	36.0	4400	54	0	0	3	1	5,091	253,607	530	478	0	1	1
	ALLEGAN	1960	SALINA	3132	12	D	28.0	3430	28	2	0	28	2	172,601	748,296	1,120	668	0	1	1
	ALLEGAN	1957	TRAVERSE	1696	7	L		1712	15	0	0	6	0	1,773	100,610	150	671	0	1	1
	OCEANA	1933	TRAVERSE	(REFER TO ADJACENT FIELDS)																
	OCEANA	1933	DUNDUE	2650	20	L	36.8	11,012	275	0	3	174	4	77,957	8,421,083	2,750	3,062	377	31	408
	OCEANA	1951	DETROIT RIVER SZ	3585	9	D	38.9		63	0	0	62	1	102,937	2,397,035	2,550	951	0	4	4
	OCEANA	1952	RICHFIELD	4127			33.0													
	MASON	1962	TRAVERSE	1663	5	L	39.9	5890	17	0	1	14	2	46,108	346,516	360	963	391	0	391
	MONTCALM	1936	DUNDUE-REED CITY	3340	1	L	43.2	3430	8	0	0	2	0	1,674	105,849	120	882	0	*16	16
	CLARE	1940	TRAVERSE	3105	1	L		5273	8	0	0	6	0			200		0	6	6
	ISABELLA	1940	DUNDUE	3794	3	L	44.2		37	0	1	5	0	2,206	57,978	60	446	6	*3	9
	ISABELLA	1942	RICHFIELD	5015	15	D		5202	2	0	0	1	0	28,186	5,048,570	80	4,950	0	4	4
	ISABELLA	1938	DUNDUE	3700	11	L	45.2		79	0	0	24	2			1,640		1,689	0	1,689
	ISABELLA	1953	TRAVERSE	3090	31	L	43.0													
	OSCEOLA	1955	DETROIT RIVER SZ	4415	48	DL	42.6		2	0	0	1	0	31,919	3,875,133	80	2,253	15	0	15
	OSCEOLA	1943	TRAVERSE	2820	5	L	43.5	3534	10	0	0	10	1	8,597	516,148	350	1,475	60	5	65
	OSCEOLA	1953	TRAVERSE	1920	1	L		2337	7	0	1	2	0			70		0	*1	1
	OSCEOLA	1954	"BEREA"	1170	3	L			7	2	1	6	2	2,206	57,978	60	446	6	*3	9
	KENT	1939	TRAVERSE	1870	6	L	39.0	2255	21	0	0	1	0	337	156,613	300	522	0	0	0
	OTTAWA	1942	TRAVERSE	1514	3	L	41.9	3052	21	0	0	1	0	0	310,085	400	775	0	0	0
	OTTAWA	1958	SALINA	(REFER TO ADJACENT FIELDS)					57	108	4,315	314								

193 ACTIVE FIELDS AT THE END OF 1966

INCOMPLETE RECORD

14,273,099 BBL.S. OIL FROM ACTIVE FIELDS 1966

534,105,985 - BBL.S. CUMULATIVE PRODUCTION FROM ACTIVE FIELDS 1966  
538,275,093 - BBL.S. OIL TOTAL CUMULATIVE PRODUCTION END 1966

TABLE 5. — LOCATION OF MICHIGAN OIL FIELDS (Sheet 1 of 4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
ADAIR	ST. CLAIR	CHINA	4N - 16E	7	BLOOMER	MONTCALM	BLOOMER	9N - 5W	31, 32
ADAMS	AREMAC	CASCO	4N - 15E	12, 13	BUSHNELL		BUSHNELL	9N - 6W	36
		ADAMS	19N - 3E	21, 23, 24, 25, 26, 27, 34, 35, 36	NORTH PLAINS		NORTH PLAINS	8N - 5W	5, 6
		DREY RIVER	19N - 4E	31	BLOOMINGDALE	VAN BUREN	BLOOMINGDALE	1S - 10W	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 24
ADAMS, NORTH	AREMAC	GIBSON	18N - 3E	1, 2	COLUMBIA		COLUMBIA	1S - 15W	1, 2, 10, 11, 12, 13, 14, 15, 16, 23, 24
ADAMSON	TUSCOGA	ADAMS	19N - 3E	11, 14, 15, 22, 23, 27	PIKE GROVE		PIKE GROVE	1S - 13W	18
		ADAMSON	14N - 8E	19, 20, 21, 28, 29, 30	CASCO	ST. CLAIR	CASCO	4N - 15E	29, 31, 32, 44, 28 & 44 33
		WISNER	16N - 7E	22, 23, 24, 25, 26	TEA		TEA	3N - 15E	5, 6
ALBION-PULASKI-SCIPPIO TREND					BUCKEYE, NORTH	GLAMWIN	BUCKEYE	18N - 1W	1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15
	CALHOUN	LEFE	1S - 5W	17, 22, 23, 26	HAY		HAY	18N - 1E	15, 16, 21, 22
		SHERIDAN	2S - 4W	18, 19, 20, 28, 33	BUCKEYE, SOUTH	GLAMWIN	BUCKEYE	16N - 1W	22, 23, 24, 25, 26, 27, 35, 36
		ALBION	3S - 4W	3, 4, 10, 11, 14, 15, 22, 23, 26, 27, 35, 36	HAY		HAY	18N - 1E	33
		ROBER	4S - 4W	1, 12	BILLINGS		BILLINGS	17N - 1E	4, 9, 10
ALBION-PULASKI-SCIPPIO TREND	JACKSON	PULASKI	4S - 3W	6, 7, 8, 17, 18, 19, 20, 21, 28, 29, 32, 33, 34	TORRACO		TORRACO	17N - 1W	1
	HILLSDALE	SCIPPIO	5S - 3W	3, 4, 10, 13, 15, 14, 15, 23, 24, 25, 26	BURDELL	OSCEOLA	BURDELL	20N - 10W	19
		FAVETTE	5S - 3W	35, 36	RUTMAN	GLAMWIN	RUTMAN	20N - 1W	
		MOBCOM	5S - 2W	19, 31, 32	CADAC	ST. CLAIR	MUSSEY	7N - 13E	11, 12, 13, 14
		ADAMS	6S - 2W	3, 4, 5, 6, 8, 10, 16, 17	CAREY LAKE	NEWAYCO	GOODWELL	16N - 11W	26
ARABELLA	TUSCOGA	ARABELLA	10N - 7E	28, 33, 34	CATO	MONTCALM	CATO	12N - 6W	3, 4, 6, 8, 9
ASTON	OSCEOLA	LINCOLN	18N - 10W	5	CEDAR	OSCEOLA	CEDAR	18N - 5W	10, 27, 28, 33, 34
ATLANTA	MONTMORENCY	AVERY	30N - 3E	10, 15	CHASE	LAKE	CHASE	17N - 11W	19, 29
AU GRES	AREMAC	AU GRES	19N - 6E	2, 3, 10, 11	CHERRYFIELD	MACOMB	CHERRYFIELD	3N - 14E	29 (ALSO SEE GAS FIELDS)
ARD	GLAMWIN	BEAVERTON	17N - 2W	5, 6	CHINA, SEC. 12	ST. CLAIR	CHINA	6N - 16E	12
		GROTT	18N - 2W	31, 32	CHINA, SOUTH	ST. CLAIR	COTTRELLVILLE	3N - 16E	4 (ALSO SEE GAS FIELDS)
BEAVER CREEK	OSCEOLA	BEAVER CREEK	25N - 4W	7, 8, 16, 17, 18, 19, 20, 21, 27, 28, 29	CLARE, CITY	CLARE	GRANT	17N - 4W	24, 35, 36
BEAVERTON	KALKASKA	GARFIELD	25N - 5W	12, 13	CLAYTON	AREMAC	CLAYTON	20N - 4E	3, 4, 5, 8, 9, 10, 11
BEAVERTON, SOUTH	GLAMWIN	BEAVERTON	17N - 2W	2, 3, 11	CLAYTON	OCEANA	RICHARD	21N - 4E	31
	GLAMWIN	BEAVERTON	17N - 2W	26, 27, 35, 36	COLLATER	ISABELLA	WISE	16N - 3W	6
BEAVERTON, WEST	GLAMWIN	TOBACCO	17N - 1W	31	COLLATER	OSCEOLA	CLAYTON	20N - 4E	3, 4, 5, 8, 9, 10, 11
BEAVERTON, WEST	GLAMWIN	BEAVERTON	17N - 2W	19	COLLATER	OSCEOLA	CLAYTON	20N - 4E	31
BELLE RIVER HILLS	ST. CLAIR	CHINA	4N - 16E	DEVELOPED GAS STORAGE RESERVOIR	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
BELLY ACRES	MONTCALM	HOME	12N - 6W	11, 14	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
BENTLEY	GLAMWIN	BENTLEY	17N - 2E	16, 17, 18, 19, 20, 21, 27, 28, 29, 34, 35	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
		BENTLEY	17N - 2E	18	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
BERLIN	ST. CLAIR	BERLIN	6N - 13E	32, 33	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
BEVENS LAKE	MEGUSTA	GREEN	16N - 10W	13	COLLATER	ISABELLA	COLLATER	16N - 6W	19, 20, 21, 28, 29, 30, 31, 32, 33, 34
BIG HAND	ST. CLAIR	COLUMBUS	5N - 15E	24, 25	COTTRELLVILLE	ST. CLAIR	CHINA	4N - 16E	31
BILLINGS	GLAMWIN	BILLINGS	17N - 1E	2, 3, 10, 11	COTTRELLVILLE	ST. CLAIR	COTTRELLVILLE	3N - 16E	6, 7, 8 (ALSO SEE GAS FIELDS)
BILLINGS, SOUTH	GLAMWIN	BILLINGS	17N - 1E	12, 13	CRANBERRY LAKE	CLARE	CRANBERRY LAKE	20N - 6W	SE 1/4, NE 1/4, 12
		BILLINGS	17N - 1E	18	CRANBERRY LAKE, EAST	CLARE	CRANBERRY LAKE, EAST	20N - 5W	1, 2, 11, 12
BIRCH BELA	SAGINAW	BIRCH RUN	10N - 6E	25, 36	CRYSTAL	MONTCALM	CRYSTAL	10N - 5W	7, 8, 17
		ARABELLA	10N - 7E	30, 31, 32	CRYSTAL	MONTCALM	CRYSTAL	10N - 5W	1, 2, 3, 4, 10, 11, 12, 13
BIRCH RUN (DUNDUE)	TUSCOGA	BIRCH RUN	10N - 6E	19, 20, 29	CRYSTAL VALLEY	OCEANA	CRYSTAL	16N - 16W	26, 34, 35, 36
	SAGINAW	TAYMOUTH	10N - 5E	13	CURRIE	OSCEOLA	VERNON	16N - 4W	9, 10, 11, 14, 15, 16
					DAITON	HURON	DAITON		

TABLE 5.—LOCATION OF MICHIGAN OIL FIELDS continued (Sheet 2 of 4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME AND RANGE	PRODUCING SECTIONS	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME AND RANGE	PRODUCING SECTIONS
DAY (TRAVERSE)	MONTCALM	11N - 6W	36	GOODWELL	NEWAYGO	16N - 11W	5, 6, 7, 8, 9, 16, 17
DEEP RIVER (DUNDIE)	ARENAC	19N - 4E	6, 7, 8, 9, 14, 15, 16, 23, 24	GRANT	HURON	15N - 11E	29
DEERFIELD	MORISE	6S - 6E	19, 29, 30	GROUT	GLAMISH	18N - 2W	10, 11, 14, 15
DEERSON	OTTAWA	6S - 6E	31	HAMILTON	CLARE	19N - 3W	5, 6, 7, 8, 15
DIAMOND SPRINGS	ALLEGAN	8N - 14W	21, 27, 28	HAYES		19N - 4W	1, 2
		4N - 14W	36	FROST		20N - 4W	35, 36
		4N - 13W	31	HAWYER	JACKSON	6S - 2W	8, 9
		3N - 14W	1	HARDY DAM	MECOSTA	13N - 10W	5, 6, 8
		3N - 13W	6	HARRISON	CLARE	18N - 4W	7
DOBE	ALLEGAN	4N - 12W	19, 29, 30, 31, 32, 33	HEADQUARTERS	ROSCOMMON	21N - 3W	19, 20, 28, 29, 30, 32, 33, 34
		6N - 13W	25	HEATH	CLARE	20N - 3W	3, 4, 10, 15
DOUGLASS	MONTCALM	11N - 7W	1	HESSE	ALLEGAN	3N - 14W	11, 12, 13, 14
DUNNINGVILLE	ALLEGAN	3N - 14W	22, 27, 33	HESSE	ST. CLAIR	4N - 15E	2, 3, 10 (ALSO SEE GAS FIELDS)
DUNWIGHT	HURON	18N - 13E	21	HILLIARDS (SALIMA)	ALLEGAN	5N - 15E	3A, 35
EAST NORWICH	MISSAUKIE	24N - 5W	1, 2, 3, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22	HOME, SEC. 26	ALLEGAN	3N - 12W	3, 4, 10 (ALSO SEE GAS FIELDS)
EDEN	ROSCOMMON	24N - 4W	6, 7, 18	HOPE	MONTCALM	12N - 6W	26
EDENVILLE	MASON	17N - 16W	25, 26, 35, 36	HOPKINS, SOUTH	BARRY	2N - 9W	26, 27, 28, 33, 34, 35
EMORE	MIDLAND	16N - 1W	5, 26, 27	HOPKINS, WEST	ALLEGAN	1N - 9W	1, 2, 3, 12
EMERALS	MONTCALM	12N - 6W	2, 3, 9, 10, 11	HOPKINS, WEST	ALLEGAN	3N - 12W	19, 30, 31, 32
ELBRIDGE	OCEANA	21N - 1E	15	HUBER	NEWAYGO	16N - 14W	4, 5, 8
ELMWOOD	TUSCOLOA	15N - 16W	22, 26, 27, 28	ISABELLA	ISABELLA	15N - 6W	7, 18
ELMWOOD	TUSCOLOA	14N - 10W	17, 20, 21	JEFFERSON	CASS	15N - 5W	12, 13
ENTERPRISE	MISSAUKIE	23N - 5W	10, 11, 12, 13, 14	JEROME	MIDLAND	7S - 15W	22, 23, 26, 27, 35
ENTRIGAN	MONTCALM	11N - 7W	21	JOHNSTON	BARRE	15N - 1W	6, 7, 8
ESSEVILLE	RAY	23N - 4W	18	KAMMELIN	BARRE	11N - 6W	7, 8, 17
EVART	OSCEOLA	14N - 6E	7, 8, 9, 15, 16, 17, 18	KAMMELIN	RAY	15N - 4E	26, 27, 28, 29, 33, 34, 35, 36
EXCELSIOR	KALASKA	18N - 8W	12	KIMBALL LAKE	NEWAYGO	16N - 4E	1, 2, 3, 11, 12
FERRY	OCEANA	27N - 6W	11	LAKEFIELD	OSCEOLA	16N - 5E	4, 5, 6, 7, 8, 9
FILLMORE	ALLEGAN	14N - 16W	16, 20, 21	LAKETON	MUSKOGON	15N - 5E	31
FILLMORE	ALLEGAN	4N - 15W	2, 3, 11	LAKETON	MUSKOGON	12N - 13W	2, 10, 11, 12, 13, 14, 15, 24
FILLMORE	ALLEGAN	4N - 14W	12	LAKETON	MUSKOGON	11N - 1E	1
FOREST RIVER	OTTAWA	5N - 15W	27, 34, 35	LAKETON	MUSKOGON	10N - 17W	15
FORK	OCEANA	16N - 15W	12	LAKETON	MUSKOGON	12N - 8W	22
FORK	MECOSTA	16N - 7W	4, 5, 6, 7, 8, 16, 18	LAKETON	MUSKOGON	10N - 17W	15
FORK, NORTH	OSCEOLA	16N - 8W	1, 12	LAKETON	MUSKOGON	12N - 8W	22
FORK, NORTH	OSCEOLA	17N - 7W	28, 33	LAKETON	MUSKOGON	10N - 17W	15
FREEMAN-BEDDING	CLARE	19N - 6W	27, 28, 29, 32, 33, 34	LAKETON	MUSKOGON	10N - 17W	15
FREEMAN	VAN BUREN	18N - 6W	3, 4	LAKETON	MUSKOGON	10N - 17W	15
GENEVA	VAN BUREN	1S - 16W	20, 21, 22, 27, 28, 29, 32, 33	LAKETON	MUSKOGON	10N - 17W	15
GIBSON, SEC. 20	RAY	18N - 3E	20, 29	LAKETON	MUSKOGON	10N - 17W	15
GILBERT LAKE	OCEANA	16N - 15W	34	LAKETON	MUSKOGON	10N - 17W	15
GILMORE	ISABELLA	16N - 5W	30, 31, 32	LAKETON	MUSKOGON	10N - 17W	15
		15N - 5W	5	LAKETON	MUSKOGON	10N - 17W	15

TABLE 5.—LOCATION OF MICHIGAN OIL FIELDS continued (Sheet 3 of 4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME AND RANGE	PRODUCING SECTIONS	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME AND RANGE	PRODUCING SECTIONS	
LICH	RAY	PINCKNING	17N - 4E	29	SUMMIT	MASON	17N - 17W	31
LUTHER	LAKE	NEKITEK	19N - 12W	14	SUMMIT	MASON	17N - 17W	31
MCMAIN	MISSAUKIE	RIVERSIDE	21N - 7W	19, 20, 30	CASCO	ST. CLAIR	4N - 15E	8, 9, 15, 28, 16, 22, 23, 26, 27, 28, 29, 30, 31, 34
MCMAIN	MISSAUKIE	RICHARD	21N - 8W	24	CASCO	ST. CLAIR	4N - 15E	24, 25
MACON CREEK	LENAWEE	MACON	5S - 5E	23	CHEWA	ST. CLAIR	4N - 16E	19
MARATHON	LAPERE	HARBATHON	9N - 9E	16	PINCKNING	RAY	17N - 4E	23, 35, 36
MAINE CITY	ST. CLAIR	COTTELLVILLE	3N - 16E	2, 3, 10, 11, 15 (ALSO SEE GAS FIELDS)	FRASER	16N - 4E	2	
MAINE CITY, SOUTH	ST. CLAIR	COTTELLVILLE	3N - 16E	23, 26	PIFESTONE	BERKLEY	5S - 17W	24
MEDINA	LENAWEE	MEDINA	8S - 1E	3	POLKTON	OTAWA	8N - 14W	8, 9, 10, 11, 14, 15, 16
MILLS, SEC. 1	MIDLAND	MILLS	16N - 2E	1	PORTER	MIDLAND	13N - 1W	7, 8, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28
MINERAL SPRINGS	OSCEOLA	SHERMAN	20N - 9W	16, 20, 21	JAFER	13N - 2W	1, 2, 3, 11, 12	
MIO	OSCEOLA	WERTOR	25N - 3E	30, 32	GREENDALE	16N - 2W	34, 35	
MOFATT, SEC. 34	OCEANA	ROSE	24N - 3E	3, 4	AFTWA	22N - 6W	26, 35	
MONTEBY	ALLEGAN	MOFATT	20N - 3E	34	LEE	1N - 15W	5, 6, 7, 8	
		MONTEBY	3N - 13W	2, 4, 8, 9, 10, 11, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 27, 32, 36	CASCO	6N - 15E	11, 14 (PRODUCTION COMBINED WITH ADAR FIELD)	
MT. CLEMENS	MACOMB	MACOMB	3N - 13E	34	BAVERNA	9N - 14W	21, 27, 28, 29, 30, 31	
MT. FOREST	RAY	PINCKNING	17N - 4E	18, 19	SULLIVAN	9N - 15W	25, 36	
MT. FOREST	MIDLAND	MT. FOREST	17N - 3E	13, 24	RAY	4N - 13E	GAS RESERVOIR PRODUCING SMALL QUANTITIES OF OIL	
MT. PLEASANT	MIDLAND	GREENDALE	14N - 2W	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19	LINCOLN	18N - 10W	17, 18, 19, 20, 29, 30, 31, 32	
		LEE	14N - 1W	7, 8, 18	RICHMOND	17N - 10W	4, 5, 6, 7, 8, 9	
		CHIPPEWA	14N - 3W	1, 2, 3, 4, 11, 12, 13	WINDBA	18N - 11W	24, 25, 36	
		DEWEY	15N - 3W	28, 33, 34	LINCOLN	18N - 10W	26	
MUSKOGON	MUSKOGON	MUSKOGON	10N - 16W	3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22	SHERIDAN	12N - 14W	8	
		LAKETON	10N - 17W	1, 11, 12, 13, 14	REYNOLDS	12N - 10W	1, 2, 12, 13	
NELLSVILLE	ROSCOMMON	ROSCOMMON	22N - 4W	8, 17	WHELFIELD	12N - 9W	6, 7, 8, 17, 18	
NEW RICHMOND	ALLEGAN	MANTLIS	3N - 15W	16	RICH	10N - 10E	36	
NORTVILLE	WASHINGTON	SALZM	1S - 7E	1, 2, 12	RICH	10N - 10E	27, 28	
		LYON	1N - 7E	34, 36	RIVERSIDE	21N - 7W	14, 23, 24	
		NORTHVILLE	1S - 8E	16, 17	RIVERSIDE	17N - 17W	10, 11, 15	
		PLYMOUTH	1S - 8E	21, 22, 23, 25, 26	RIVERTON	17N - 17W	21	
OTISVILLE	GENESSEE	FOREST	9N - 8E	5, 6, 12	RIVERTON, SEC. 21	MASON	17N - 17W	3
		MILLINGTON	10N - 8E	31, 32	ROBINSON, SEC. 3	OTTAWA	7N - 15W	25, 35, 36
OTTO, SEC. 32	OCEANA	OTTO	13N - 16W	32	ALGOMA	9N - 11W	25, 35, 36	
OVERISEL	ALLEGAN	OVERISEL	4N - 14W	5, 9, 15, 16, 21, 22, 27, 28, 34	COURTLAND	9N - 10W	19	
		HEATH	3N - 14W	3, 4, 9, 10	ISABELLA	15N - 4W	1, 2, 11, 12, 13	
OXFORD	NASON	RIVERTON	17N - 17W	26, 27	DEWEY	15N - 3W	7, 18	
PANIS	MECOSTA	GREEN	16N - 10W	16, 21, 22, 27, 28	FOSTER	24N - 1E	14, 20, 21, 23, 24, 25	
PAN PAN	VAN BUREN	PAN PAN	3S - 14W	2, 10, 11, 15	FOSTER	24N - 2E	19, 20, 21, 28, 29, 30, 31, 32, 33	
PAN PAN, SEC. 33	VAN BUREN	PAN PAN	3S - 14W	33	ROSE	24N - 2E	27, 34, 35	
PEACOCK, SEC. 7	LAKE	PEACOCK	19N - 13W	7	KLACKING	23N - 2E	2, 3, 11	
PEACOCK, SEC. 9	LAKE	PEACOCK	19N - 13W	9	ROSE LAKE	19N - 9W	31	
PENWATER	OCEANA	HEABE	16N - 17W	4, 5, 6, 7, 8	LEROT	19N - 10W	36	
		PENWATER	16N - 18W	1, 2, 12	CEAD	18N - 9W	6	
					LINCOLN	18N - 10W	1	

TABLE 5--LOCATION OF MICHIGAN OIL FIELDS Continued (Sheet 4 of 4)

FIELD NAME OR POOL	COUNTY	TOWNSHIP AND RANGE	PRODUCING SECTIONS	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS
SAGINAW	SAGINAW	12N - 4E	10, 11, 12, 13, 14, 15, 24	WILEY	MASON	EDEN	17N - 16W	18
SALEN	ALLEGAN	4N - 13W	1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21	WINFIELD	MONTCALM	RIVERTON	17N - 17W	12, 13
			22, 23, 24, 34	WINTERFIELD	CLARE	WINFIELD	12N - 9W	20, 28, 29
SAFORD				WINTERFIELD		REDDING	20N - 6W	28, 29, 30, 32, 35, 36
SAUBLE	MIDLAND	5N - 13W	35, 36	WISE	ISABELLA	GREENWOOD	19N - 5W	6
SCOTTVILLE	MASON	15N - 1W	12, 13	WOODVILLE	OSHTAGO	WISE	16N - 3W	8, 9, 16, 17, 20, 21, 28, 29, 32, 33
SHELBY	OCEANA	14S - 18W	18	WRIGHT	OTTAWA	NORRICH	15N - 11W	20, 28, 29
						WRIGHT	8N - 13W	28, 32, 33
SHERMAN	ISABELLA	15N - 6W	29, 32, 33, 34	WYOMING PARK	MENT	TALLMADE	7N - 13N	4
				ZEELAND	OTTAWA	WYOMING	6N - 12W	13, 14, 23
SKEELS	GLADWIN	14S - 6W	3, 4, 5			ZEELAND	5N - 16W	32
STANTON								
STARBUCK	ALLEGAN	20N - 3W	30, 31					
STONY LAKE	ALLEGAN	FRANKLIN	25, 36					
SUNNER	JACKSON	SPRINGPORT	11, 14					
SYLVAN	SAGINAW	ST. CHARLES	26					
TEKONSHA	ROGOSHON	AD SAUBLE	10, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32					
TERRIT								
TEOWBRIDGE	AREMAC	LINCOLN	18N - 4E					
	MONTCALM	DODGLASS	11N - 7W					
	AREMAC	DEEP RIVER	9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23					
	OCEANA	GLAYBARKS	13N - 18W					
	GRATIOT	SOMER	11N - 4W					
	OSHTAGO	SYLVAN	18N - 7W					
	CALHOUN	TEKONSHA	4S - 6W					
	MUSKOGON	CASNOWIA	10N - 13W					
	ALLEGAN	TRUSHIDE	1N - 13W					
		OTSEGO	1N - 12W					
	ISABELLA	VERNON	16S - 4W					
	MISSAUKEE	CLAM UNION	21N - 6W					
	KENT	WALKER	7N - 12W					
		WALKER	6N - 12W					
	OTTAWA	TALLMADE	7N - 13W					
		TALLMADE	6N - 13W					
		GEORGETOWN	6N - 13W					
	ALLEGAN	GEORGETOWN	7N - 13W					
		HAYLAND	3N - 11W					
	ALLEGAN	HAYLAND	3N - 11W					
	OSHTAGO	WEST BRANCH	22N - 2E					
		OCEANAW	22N - 1E					
		CHEMUNILL	22N - 3E					
		HORTON	21N - 2E					
		MILLS	21N - 3E					

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 6.--ABANDONED OIL FIELDS (Sheet 1 of 3)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	DEPTH FEET	PAY ZONE	OIL GRAVITY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL WELLS		OIL PRODUCTION IN BARRELS		BRINE PRODUCTION BELS./DAY		
									TO COMP. END 1966	ABANDONED	PRODUCING AT DIS.	SHUT IN SHUT DOWN	RECOVERY PER ACRE DRILLED (BBL.S.)	DISPOSAL SURFACE	TOTAL PRODUCTION
ALAMO	KALAMAZOO	1949	TRAVERSE	1310	2	L	TRAVERSE	1420	16		1962	27,545	160	172	
ALLEGAN	ALLEGAN	1937	TRAVERSE	1563	2	L	CINCINNATIAN	2987	18		1961	15,577	160	87	
ASHLAND, SEC. 8	NEHAYGO	1959	TRAVERSE	2238	1	L	TRAVERSE	2239	1		1962	267	10	27	
BANCOR	VAN BUREN	1939	TRAVERSE	1002	2	L	TRENTON	2552	65		1959	933,965	610	1,531	
BARTON	NEHAYGO	1947	TRAVERSE	3097	1	L	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	
BENOMA, SEC. 13	OCEANA	1949	TRAVERSE	1640	3	L	DETROIT RIVER	2276	2		1956	4,951	20	248	
BEICH RUN	SAGINAW	1934	BEREA	1530	5	S	DUNDEE	2646	26		1951	215,876	250	864	
BIRNIP	NEHAYGO	1950	TRAVERSE	2226	3	L	TRAVERSE	2238	7		1952	33,327	110	303	
BLADNER, SEC. 18	MONTCALM	1936	TRAVERSE	2717	6	L	DUNDEE	3138	1		1936	814	10	81	
BREDSVILLE	VAN BUREN	1943	TRAVERSE	1061	2	L	DETROIT RIVER	1445	32		1961	285,584	300	952	
BUCKEYE, SOUTH	GLADWIN	1956	TRAVERSE	2891	3	D	DETROIT RIVER	4509	7						
BURBELL	MONTCALM	1935	DUNDEE	3105	2	L	DUNDEE	3125	1		1939	4,035	10	403	
BUTMAN	GLADWIN	1950	TRAVERSE	2789	2	L	SYLVANIA	5027	1		1953				
CASCO	ALLEGAN	1940	TRAVERSE	3596	6	L	TRAVERSE	41.4	1		1963				
CEDAR CREEK, SEC. 23	MUSKOGON	1949	TRAVERSE	1095	1-5	L	TRAVERSE	1115	9		1959	17,382	50	348	
CHERRY GROVE	NEHAYGO	1952	TRAVERSE	1951	2	L	DUNDEE	2453	1		1951	1,223	10	120	
CHESHIRE	ALLEGAN	1947	TRAVERSE	1289	2	L	TRAVERSE	3998	1		1953	4,814	10	481	
CHESTER, SEC. 15	OTSEGO	1951	SALINA	6610	5	D	NIAGARAN	6870	1		1958	9,290	30	310	
CHIPPENAW, SEC. 10	ISABELLA	1961	TRAVERSE	3193	1	L	TRAVERSE	3220	1		1956	2,752	40	69	
CLARE LAKE	VAN BUREN	1950	TRAVERSE	1380	1	L	TRAVERSE	1399	14		1964	1,250			
CLINTON	WASHTENAW	1953	TRAVERSE	986	2	D	TRENTON	3606	2		1953	17,490	140	125	
COFFEE LAKE	VAN BUREN	1946	TRAVERSE	1128	1	L	TRAVERSE	1190	11		1962	2,093	20	105	
CODWATER, SOUTH	ISABELLA	1951	DUNDEE	3739	4	D	DUNDEE	3743	1		1954	34,649	110	315	
CONSTOCK, SEC. 5	KALAMAZOO	1949	TRAVERSE	1430	3	L	TRAVERSE	1480	2		1959	10,941	20	547	
CONCORD	JACKSON	1953	TRAVERSE	1627	1	L	SALINA	2417	5		1952	974	20	69	
CRANBERRY LAKE	CLARE	1953	DETROIT RIVER S2	4601	16	L	RICHFIELD	5223	1		1958	6,437	50	129	
		1952	TRAVERSE	3120	7	L			7		1962				
CRANBERRY LAKE, EAST	CLARE	1963	TRAVERSE	3057	6	L					1965				
CROOKED LAKE	ALLEGAN	1949	TRAVERSE	1278	1	L	TRAVERSE	1312	2		1956	115,452	40	2,866	
CROTCH	NEHAYGO	1951	TRAVERSE	2543	2	L	SALINA	3993	10		1958	91,678	200	458	
CHOMP	BAY	1950	DUNDEE	3294	7	L	DUNDEE	3354	1		1951	1,043	10	104	
DALLAS	CLINTON	1942	DUNDEE	2442	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 NORRICH	MISSAUKEE	1942	DUNDEE	3082	4	L	SYLVANIA	4632	1		1947				
ELBA	GRATIOT	1944	TRAVERSE	2410	1	L			1		1944				
ELKLAND	TUSCOOLA	1946	TRAVERSE	2440	2	L	DUNDEE	3044	8		1962	42,925	90	477	
ENSBET	NEHAYGO	1954	TRAVERSE	2653	14	L	SYLVANIA	3735	2		1947	1,546	20	77	
FOREST RIVER	OCEANA	1965	TRAVERSE	2439	2	L	DETROIT RIVER	2598	6		1959	70,415	120	587	
FREDORK	WASHTENAW	1954	TRENTON	3963	20	D	CAMBRO-ORDOVICIAN	4691	1		1965	667	40	17	
FREEMAN, SEC. 15	CLARE	1963	DUNDEE	3894	8	L	DUNDEE	3902	1		1965	7,217	40	180	

TABLE 6.—ABANDONED OIL FIELDS Continued (Sheet 2 of 3)

FIELD NAME	COUNTY	YEAR OF DISC.	PRODUCING FORMATION OR POOL	DEPTH IN FEET		PAY ZONE THICKNESS AND LITHOLOGY	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	TO END IN 1966	NUMBER OF OIL WELLS		SHUT IN OR SHUT DOWN	OIL PRODUCTION IN BARRELS		RECOVERY PER ACRE DRILLED ACRES (B.B.S.)	BRINE PRODUCTION	
				3522	3049					COMP. IN	ABAND. IN		YEAR OF ABANDONMENT	CUMULATIVE PRODUCTION		DISPOSAL SURFACE	TOTAL PRODUCTION
FREMONT, SEC. 27	ISABELLA	1942	DUNDEE & TRAVERSE	3522	3049	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	
FRESPORT	MARY	1949	TRAVERSE	2031		3 L	DETROIT RIVER	2430	1				1951	19,229	10	1,923	
GARFIELD	CLARE	1946	DUNDEE	5013		10 S	SILOMARIA	5307	1				1948	13,769	40	344	
GENEVA	MIDLAND	1935	DUNDEE	3678		2 L	DUNDEE	3690	7				1960	62,684	70	895	
GIBSON	JAY	1950	DUNDEE	2942		4 L	DETROIT RIVER	4343	1				1952	PRODUCTION COMBINED WITH GIBSON TRAVERSE			
		1935	TRAVERSE	2096		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	
GROU	GLADWIN	1940	DUNDEE	3625		4 L	DETROIT RIVER	5228	5				1957	PRODUCTION COMBINED WITH GROU RICHFIELD			
		1958	DETROIT RIVER S2	4801		12 D			1				1963	PRODUCTION COMBINED WITH HAMILTON RICHFIELD			
HAMILTON	CLARE	1940	DUNDEE	4041		10 L	RICHFIELD	5395	3				1959	60,532	40	1,513	
HAMLIN	MASON	1952	NIAGARAN	4224		20 D	CAMERLAN	6622	1				1936	116,275	150	775	
HART	OCEANA	1933	TRAVERSE	1911		4 D	ST. PETER Ss.	5531	17				1948	139,272	160	870	
HAYTON	CLARE	1941	DUNDEE	3945		2 L	DUNDEE	4000	4				1960	88,292	160	427	
HEATH, SEC. 35	ALLEGAN	1946	TRAVERSE	1103		1 L	DETROIT RIVER	1385	16				1946	559	10	56	
HILLJARDIS	ALLEGAN	1944	TRAVERSE	1576		1.2 L	NIAGARAN	3157	17				1961	124,401	300	415	
HOLTON	MUSKOGON	1948	TRAVERSE	1993		1 L	DUNDEE	2594	3				1963	95,911	60	1,598	
HOPKINS	ALLEGAN	1939	TRAVERSE	1633		4 L	DETROIT RIVER	1965	10				1956	165,513	110	1,323	
HOPKINS, WEST	ALLEGAN	1941	TRAVERSE	1371		2 L	SALLINA	3140	31				1951	388,777	370	1,051	
HUBBARDSTON	IONIA	1947	DUNDEE	3028		5 L	DUNDEE	3072	5				1959	46,479	50	970	
LACZTA	VAN BUREN	1946	TRAVERSE	1110		2 L	TRAVERSE	1208	11				1955	51,904	120	433	
LARKIN	MIDLAND	1935	BEREA	2473		4 S	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	PRAIRIE DU CHIEN	3533	1				1965	7,842	20	392	
MARIE	OTTAWA	1940	"BEREA"	1170		3 L	TRAVERSE	1904	2				1946	6,253	20	313	
MARTIN	ALLEGAN	1948	TRAVERSE	1617		1 L	ST. PETER Ss.	4290	2				1960	2,188	20	109	
MEARS	OCEANA	1949	DUNDEE	2210		3 L	REED CITY	2347	3				1959	105,807	110	622	
		1951	TRAVERSE	1745		2.5 DL	36-1		11				1959	8,392	10	839	
HOFFPAT, SEC. 34	ARENC	1953	DUNDEE	2984		4 L	DUNDEE	3027	1				1956	36,069	10	3,607	
MT. BAILEY	MIDLAND	1934	DUNDEE	3477		3 D	DUNDEE	3500	1				1947	1,906	10	191	
MT. FOREST, SEC. 1	RAY	1946	DUNDEE	2960		2 L	DUNDEE	3057	1				1946	2,349	10	117	
NEW BOSTON	WAYNE	1943	TRENTON	2635		4 L	TRENTON	2983	2				1949	29,672	70	424	
NILES	BERRIEN	1940	TRAVERSE	602		7 L	TRENTON	2089	7				1958	1,424	20	71	
NORTH PORTER	CLASS	1930	TRAVERSE	660		2 L	TRENTON	2382	2				1946	PRODUCTION COMBINED WITH OTTISVILLE DUNDEE AND BEREA			
OTISVILLE	GENESSE	1941	TRAVERSE	1895		2 L	DUNDEE	2674	1				1962	2,290	100	23	
OTSEGO	ALLEGAN	1938	TRAVERSE	1532		1 L	TRAVERSE	1600	6				1958	681	40	17	
OTSDO, SEC. 9	ALLEGAN	1950	TRAVERSE	1456		1 L	TRAVERSE	1457	4				COMBINED WITH OTTO, SEC. 32				
OTTO, SEC. 30	OCEANA	1955	TRAVERSE	REFR TO ACTIVE FIELDS									1960	COMBINED WITH SEC. 32			
		1958	"BEREA"	1428		9	TRAVERSE	1860	2								

TABLE 6.—ABANDONED OIL FIELDS Continued (Sheet 3 of 3)

OVERSEL, SEC. 11	ALLEGAN	1940	TRAVERSE	1553		4 L	TRAVERSE	1578	1				1944	6,370	10	637
PLACONNING	RAY	1958	TRAVERSE	2151		1 L	DETROIT RIVER	3790	1				1960	PRODUCTION COMBINED WITH PLACONNING DUNDEE		
PINE	MORCUM	1938	TRAVERSE	2836		1 L	45-0	3308	2				1963	105,506	20	5,275
PINE RIVER	GRATIOT	1942	DUNDEE	3580		2 L	DUNDEE	3285	2				1956	13,285	90	148
PINE RIVER	GRATIOT	1956	TRAVERSE	2890		5 L			1				1958	760	10	76
PORT HURON	ST. CLAIR	1886	DUNDEE	575		20 L	CAMERLAN	4948	21				NO RECORD			
PROSPER	MISSAUBIE	1954	RICHFIELD	5128		21 D	MISS ISLAND	5254	1				1957	7,088	40	177
PULLMAN	ALLEGAN	1949	TRAVERSE	1185		1 L	TRAVERSE	1942	9				1951	26,840	90	298
RABBIT RIVER	ALLEGAN	1950	TRAVERSE	1655		3 L	TRAVERSE	1678	8				1959	12,745	80	159
RICHLAND	SAGINAW	1936	TRAVERSE	2739		10 L	46-0	3264	1				1936	1,871	10	187
RIDGEMAY, SEC. 1	LENAPPE	1934	TRENTON	2415		4 D	TRENTON	2491	1				1962	47	10	5
SECORD	GLADWIN	1937	DUNDEE	3437		5 L	DUNDEE	3500	2				1941	12,024	20	601
SHERIDAN, SEC. 25	NEWAYGO	1951	TRAVERSE	2204		1 L	TRAVERSE	2205	1				1955	628	10	63
SHERMAN, SEC. 18	ISABELLA	1939	TRAVERSE	3217		4 L	DUNDEE	3835	3				1947	1,364	20	68
STONY LAKE	OCEANA	1949	BEREA	930		1 SL	NIAGARAN	3837	2				1965	PRODUCTION COMBINED WITH STONY LAKE TRAVERSE		
SUMMERFIELD	MORCOW	1958	TRENTON-BLACK RIVER	1940		10 DL	TRENTON-BLACK RIVER	2382	2				1964	2,142		
TERNHAMPTON, SEC. 4	MARY	1952	TRAVERSE	1951		2 L	TRAVERSE	1973	2				1961	2,716	20	136
TIROBE	KENT	1950	TRAVERSE	2379		2 L	DETROIT RIVER	2900	7				1956	31,449	140	225
UNION	ISABELLA	1950	TRAVERSE	3191		2 L	DETROIT RIVER	4096	1				1963	58,263	20	2,913
VICTORY, SEC. 10	MASON	1957	TRAVERSE	1603		9 L	56-0	TRAVERSE	1616	1			1958	580	10	58
WEARE	OCEANA	1961	TRAVERSE	1681		2 L	TRAVERSE	1737	3				1964	6,919		
WEARE, SEC. 14	OCEANA	1952	TRAVERSE	1674		1 L	41-4	DUNDEE	2217	1			1954	1,096	10	110
WEST BRANCH	OCEANW	1933	TRAVERSE	1796		2 L	CAMBRO-ONDIOVICIAN	11,012	1				1956	PRODUCTION COMBINED WITH WEST BRANCH DUNDEE		
WHEATLAND	NECOSTA	1945	DUNDEE	3690		2 L	DETROIT RIVER	3849	6				1960	141,631	100	1,416
WHITE CLOUD	NEWAYGO	1963	TRAVERSE	2537		1 L	TRAVERSE	2540	1				1964	1,295		
WHITE RIVER	MUSKOGON	1950	DUNDEE	2053		2 L	DUNDEE	2055	1				1951	7,061	20	353
ZEKLAND	OTTAWA	1958	SALLINA	2792		5 D	20-5	NIAGARAN	3032	1			1962	1,606	10	161
ZEKLAND, SEC. 28	OTTAWA	1954	TRAVERSE	1491		1 L	DETROIT RIVER	2215	3				1956	4,437	30	148

116 ABANDONED FIELDS OR POOLS

CUMULATIVE PRODUCTION FROM ABANDONED FIELDS 4,166,231

MISCELLANEOUS PRODUCTION FROM DRY HOLES AND ABANDONED POOLS WITH MINOR ACCUMULATIONS 6,616

TOTAL ACCUMULATIVE FROM ABANDONED FIELDS AND POOLS 4,174,847

TABLE 7.—LOCATION OF ABANDONED OIL FIELDS (Sheet 1 of 2)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS	YEAR OF DISCOVERY AND ABANDONMENT	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS	YEAR OF DISCOVERY AND ABANDONMENT
ALAMO	KALAMAZOO	ALAMO	15 - 12W	19, 29, 30	1949, 1962	ELKLAND	TUSCOLA	ELKLAND	14N - 11E	31	1946, 1947
ALLEGAN	ALLEGAN	ALLEGAN	2N - 13W	2, 5, 9, 10, 13, 22, 23, 26	1937, 1961	ENSLEY	NEWAYGO	NOVISTA	13N - 11E	6	1946, 1947
ASHLAND, SEC. 8	NEWAYGO	ASHLAND	11N - 13W	8	1959, 1962	EVERGREEN, SEC. 22	MONTCALM	EVERGREEN	11N - 11W	6, 7, 8	1954, 1959
BANGOR	VAN BUREN	BANGOR	28 - 16W	4, 5, 9, 10, 14, 15, 16, 21, 28, 29	1939, 1959	PORK, NORTH	OSCEOLA	ORIENT	17N - 7W	33	1951, 1956
BARTON	NEWAYGO	BARTON	18N - 11W	16	1947, 1963	FOREST, RIVER	OCEANA	COLFAX	16N - 15W	12	1965, 1965
BEAVER, SEC. 31	BAY	BEAVER	15N - 3E	31	1954, 1961	FREEDON	WASHINGTON	FREEDON	3N - 4N	8	1954, 1956
BENONA, SEC. 13	OCEANA	BENONA	14N - 18W	13	1952, 1956	FREEMAN, SEC. 15	CLARE	FREEMAN	18N - 6W	15	1964, 1965
BIG PRAIRIE, SEC. 33	NEWAYGO	BIG PRAIRIE	13N - 11W	33	1947, 1949	FREEMONT	ISABELLA	FREEMONT	13N - 5W	5, 8	1938, 1956
BIRCH RUN (BEREA)	SAGINAW	BIRCH RUN	10N - 6E	19, 20, 21	1934, 1951	FREEMONT	SAGINAW	FREEMONT	11N - 2E	3, 5	1937, 1947
BISBOP	NEWAYGO	GARFIELD	12N - 13W	19, 20, 30	1950, 1952	FREEMONT	ISABELLA	FREEMONT	13N - 5W	32	1957, 1958
BLOOMER, SEC. 16	MONTCALM	BLOOMER	9N - 5W	16	1956, 1956	FREEMONT	ISABELLA	FREEMONT	4N - 8W	6	1949, 1951
BLOOMFIELD, SEC. 20	HURON	BLOOMFIELD	17N - 14E	20	1940, 1941	GAINES, SEC. 8	KENT	GAINES	5N - 11W	8	1945, 1945
BLUE LAKE, SEC. 5	MUSKOGON	BLUE LAKE	12N - 16W	5	1940, 1941	GANGES, SEC. 4	ALLEGAN	GANGES	2N - 16W	4	1954, 1954
BREEDSVILLE	VAN BUREN	GENEVA	15 - 16W	23, 24, 25, 26	1943, 1961	GARFIELD	CLARE	GARFIELD	17N - 6W	18	1946, 1946
BUSHRELL	MONTCALM	BUSHRELL	9N - 6W	1	1935, 1939	GENEVA	MIDLAND	GENEVA	15N - 2N	19, 20, 29	1935, 1960
BUTMAN (TRAVERSE)	GLAMWIN	BUTMAN	20N - 1W	1	1950, 1953	GIBSON (TRAVERSE)	BAY	GIBSON	18N - 3W	1, 2, 11, 12	1935, 1957
CEGAR CREEK, SEC. 23	VAN BUREN	CEGAR CREEK	11N - 15W	23	1949, 1951	GIBSON (DUNDRE)	BAY	GIBSON	18N - 3E	2	1950, 1952
CHERRY GROVE	MUSKOGON	CHERRY GROVE	21N - 10W	27	1952, 1953	GREENWOOD, SEC. 11	CLARE	GREENWOOD	19N - 5W	11	1952, 1953
CHESHIRE	ALLEGAN	CHESHIRE	1N - 14W	26, 27	1947, 1958	GROUT (DUNDRE)	GLAMWIN	GROUT	18N - 2N	10, 11, 15	1940, 1957
CHESTER (HAG)	OTSEGO	CHESTER	29N - 2W	15	1951, 1956	HAMLIN	MASON	HAMLIN	19N - 18W	27	1952, 1962
CHIFFEPA, SEC. 10	ISABELLA	CHIFFEPA	14N - 3W	10	1961, 1964	HART	OCEANA	HART	15N - 17N	36	1932, 1936
CLEAR LAKE	VAN BUREN	PINE GROVE	16 - 13W	3, 4, 9, 10	1950, 1953	HAYTON	CLARE	HAYTON	18N - 4W	31	1932, 1936
CLINTON	WASHINGTON	BRIDGEWATER	4S - 4E	28	1953, 1962	HAWHEAD	ALLEGAN	CASCO	1N - 16W	20, 29	1946, 1960
COFFEE LAKE	VAN BUREN	COLUMBIA	1S - 15W	17, 18	1946, 1954	HEATH, SEC. 35	ALLEGAN	HEATH	3N - 14W	35	1945, 1946
COLDWATER, SOUTH	ISABELLA	SHERMAN	15N - 6W	8	1951, 1959	HILLARDS (TRAVERSE)	ALLEGAN	HOPKINS	3N - 12W	4, 5	1944, 1961
CONSTOCK, SEC. 5	KALAMAZOO	CONSTOCK	2S - 10N	5	1949, 1952	HINTON, SEC. 21	MUSKOGON	HINTON	13N - 8W	21	1946, 1948
CONCORD	JACKSON	CONCORD	3S - 3N	35, 36	1953, 1958	HOLTON	MUSKOGON	HOLTON	12N - 15W	4, 9	1948, 1963
CRACKED LAKE	ALLEGAN	CLYDE	2N - 15W	25	1949, 1956	HOPKINS	ALLEGAN	HOPKINS	3N - 12W	22, 23	1939, 1956
CROTON	NEWAYGO	CROTON	12N - 11W	20, 29	1951, 1958	HOPKINS, WEST	ALLEGAN	HOPKINS	3N - 12W	7, 18	1943, 1963
CRUMP	BAY	GARFIELD	16N - 3E	23	1950, 1951	HUBBARDSTON	IONIA	NORTH PLAINS	8N - 3W	4	1947, 1959
DALLAS	CLINTON	DALLAS	7N - 4W	21	1942, 1948	HURON, SEC. 12	HURON	HURON	18N - 12E	12	1953, 1953
DAY (DUNDRE)	MONTCALM	DAY	11N - 6W	36	1946, 1954	JAMESSTOWN, SEC. 29	OTTAWA	JAMESSTOWN	5N - 13W	29	1942, 1942
DAYTON, SEC. 16	NEWAYGO	DAYTON	13N - 14W	16	1957, 1957	JONESFIELD, SEC. 9	SAGINAW	JONESFIELD	12N - 1E	9	1949, 1949
DECATUR, SEC. 4	VAN BUREN	DECATUR	4S - 14W	4	1942, 1942	JONESFIELD, SEC. 24	SAGINAW	JONESFIELD	12N - 1E	24	1942, 1943
DOUGLASS, SEC. 3	MONTCALM	DOUGLASS	11N - 7N	3	1954, 1956	LACOSTA	VAN BUREN	GENEVA	1S - 16W	9, 10	1946, 1955
EAST NORWICH (DUNDRE)	MISSAUKEE	NORWICH	24N - 5W	14	1942, 1947	LARKIN	MIDLAND	LARKIN	15N - 2E	21, 32	1935, 1945
EAST NORWICH (TRAVERSE)	MISSAUKEE	NORWICH	24N - 5W	16	1944, 1944	LEBANON	CLIFTON	LEBANON	8N - 6W	34	1948, 1950
EDWARDSBURG	CASS	ONTWA	8S - 15W	22, 23	1940, 1950	LEE	ALLEGAN	LEE	1N - 15W	18, 19	1941, 1952
ELBA	GRATIOT	ELBA	9N - 1W	14, 15, 22, 23	1927, 1962	LEE, SOUTH	ALLEGAN	LEE	1N - 16W	13	1941, 1952

TABLE 7.—LOCATION OF ABANDONED OIL FIELDS continued (Sheet 2 of 2)

FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS	YEAR OF DISCOVERY AND ABANDONMENT	FIELD NAME OR POOL	COUNTY	TOWNSHIP NAME	TOWNSHIP AND RANGE	PRODUCING SECTIONS	YEAR OF DISCOVERY AND ABANDONMENT
ELBE LAKE	HILLSDALE	WRIGHT	8S - 1W	11	1960, 1963	WEARS, SEC. 14	OCEANA	WEARS	16N - 17W	14	1952, 1954
LINCOLN, SEC. 9	MIDLAND	LINCOLN	15N - 1E	9	1939, 1949	WEST BRANCH (TRAVERSE)	OCEANA	HOKTON	21N - 2E	1	1933, 1956
MARIE	OTTAWA	TALLMADGE	7N - 13W	5	1940, 1946	WHEATLAND	MUSKOGON	WHEATLAND	14N - 7W	7, 8	1945, 1960
MARTIN	ALLEGAN	MARTIN	2N - 11W	18	1948, 1960	WHITE CLOUD	NEWAYGO	WILCOX	14N - 12W	19	1963, 1964
MEARS	OCEANA	GOLDEN	15N - 18W	34, 35	1949, 1959	WHITE RIVER	MUSKOGON	WHITE RIVER	12N - 18W	15	1950, 1951
MOUNT HALEY	MIDLAND	MOUNT HALEY	13N - 1E	28	1934, 1947	ZEELAND	OTTAWA	ZEELAND	5N - 14W	25, 30, 31, 36	1942, 1962
MOUNT FOREST, SEC. 1	BAY	MOUNT FOREST	17N - 3E	1	1946, 1946	ZEELAND, SEC. 4	OTTAWA	ZEELAND	5N - 13W	23, 35, 36	1942, 1962
NEW BOSTON	WAYNE	HURON	4S - 9E	18	1943, 1949	ZEELAND, SEC. 28	OTTAWA	ZEELAND	5N - 14W	4	1956, 1957
NILES	BERKLEN	NILES	7S - 17W	1, 2, 3	1940, 1956						
NORTH PLAINS, SEC. 18	IONIA	NORTH PLAINS	8N - 5W	18	1950, 1951						
NORTH PORTER	CASS	PORTER	7S - 13W	32	1930, 1955						
OSHERO, SEC. 5	KALAMAZOO	OSHERO	2S - 12W	5	1944, 1944						
OTISVILLE (TRAVERSE)	GENESE	FOREST	9N - 8E	5	1941, 1946						
OTSEGO	ALLEGAN	OTSEGO	1N - 12W	30	1939, 1962						
OTSEGO, SEC. 9	ALLEGAN	TROWBRIDGE	1N - 13W	36	1939, 1962						
OTTO	OCEANA	OTTO	13N - 16W	19, 30	1955, 1956						
OVERISEL, SEC. 11	ALLEGAN	OVERISEL	4N - 14W	11	1940, 1944						
PINE	MONTCALM	PINE	11N - 8W	29	1938, 1963						
PINE RIVER	GRATIOT	PINE RIVER	12N - 3N	31	1942, 1958						
FORT HURON	ST. CLAIR	FORT GRATIOT	7N - 17E	32	1886, 1921						
PROSPER (RICHFIELD)	MISSAUKEE	ASTWA	22N - 6W	35	1934, 1957						
FULMAN	ALLEGAN	CASCO	1N - 16W	11, 12	1949, 1951						
RABBIT RIVER	ALLEGAN	SALEN	4N - 13W	28, 29, 32, 33	1950, 1959						
RICHLAND	SAGINAW	RICHLAND	12N - 2E	31	1936, 1936						
RIDGEWAY, SEC. 1	LENAWEE	RIDGEWAY	6S - 5E	1	1954, 1962						
SECORD	GLAMWIN	SECORD	19N - 1E	11, 12	1937, 1941						
SHERIDAN, SEC. 25	NEWAYGO	SHERIDAN	12N - 14W	25	1951, 1955						
SHERIDAN, SEC. 29	NEWAYGO	SHERIDAN	12N - 14W	29	1956, 1958						
SHERIDAN, SEC. 26	MUSKOGON	SHERIDAN	15N - 7W	26	1952, 1953						
SHERMAN, SEC. 18	ISABELLA	SHERMAN	15N - 6W	18	1939, 1947						
SHAMASSE, SEC. 11	SHAMASSE	SHAMASSE	6N - 3E	11	1930, 1931						
SILVER CREEK	CASS	SILVER CREEK	5S - 16W	22, 23	1939, 1964						
SPRINGFIELD, SEC. 22	OAKLAND	SPRINGFIELD	4N - 8E	22	1955, 1955						
SUNNERSFIELD	MONROE	SUNNERSFIELD	7S - 6E	30	1958, 1964						
SUNNERSFIELD, SEC. 22	LENAWEE	DEERFIELD	7S - 5E	24	1958, 1964						
SUNNERSFIELD, SEC. 4	WAYNE	SUNNERSFIELD	4S - 8E	22	1941, 1942						
THORNAPPLE, SEC. 4	BARRY	THORNAPPLE	4N - 10W	3, 4	1952, 1961						
TYRONE	KENT	TYRONE	10N - 12W	10, 11, 14, 15	1952, 1958						
UNION	ISABELLA	UNION	14N - 6W	20	1950, 1963						
WATSON, SEC. 8	ALLEGAN	WATSON	2N - 12W	8	1949, 1950						
WEARE	OCEANA	WEARE	16N - 17W	12, 13	1961, 1964						

In the column titled PRODUCING SECTIONS, listing of a section or part of a section does not necessarily mean the entire section is 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 miscellaneous, single wells which reported small amounts of oil production. Production from these wells is accounted for in the cumulative oil tables.

