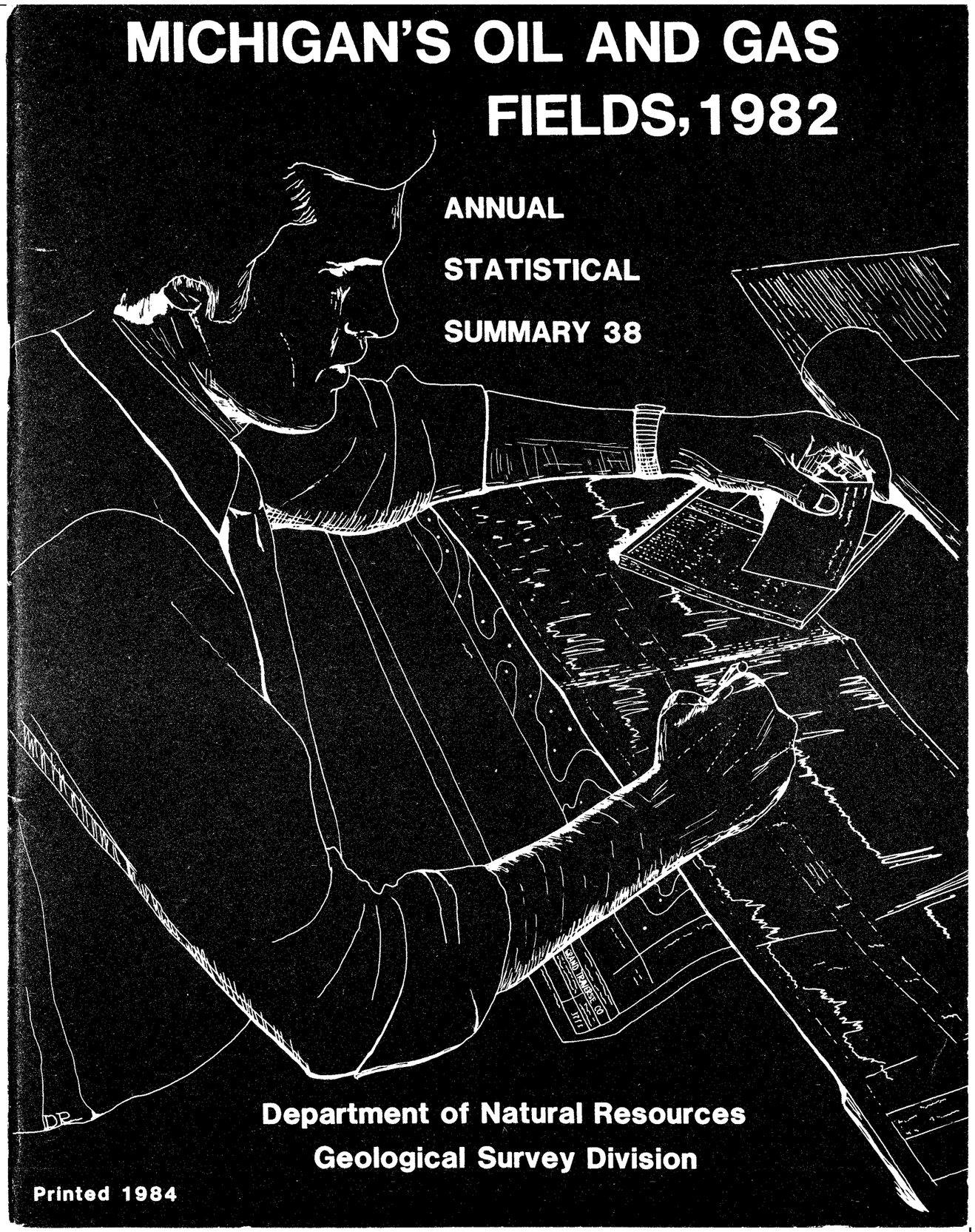
MICHIGAN'S OIL AND GAS FIELDS, 1982

ANNUAL STATISTICAL SUMMARY 38



Department of Natural Resources
Geological Survey Division

Printed 1984

STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

Geological Survey Division

ANNUAL STATISTICAL SUMMARY

38

MICHIGAN'S OIL AND GAS FIELDS, 1982

Drilling Statistics
Production
Exports and Imports

Published by Authority of State of Michigan CL '70 s.321.6

US ISSN 0085-3429

May 1984

STATE OF MICHIGAN
James J. Blanchard, Governor

DEPARTMENT OF NATURAL RESOURCES
Ronald O. Skoog
Director and Supervisor of Wells

Geological Survey Division
R. Thomas Segall
State Geologist and Assistant Supervisor of Wells

NATURAL RESOURCES COMMISSION

Whiteley, Harry H., Rogers City, Chairman
Anderson, Thomas J., Southgate
Carollo, E. R., Iron Mountain
Fluharty, Marlene J., Mt. Pleasant
Monsma, Stephen V., Grand Rapids
Myers, O. Stewart, Bitely
Poupore, Raymond, Detroit
Robertson, John M., Executive Assistant

OIL AND GAS ADVISORY BOARD

Orr, Vance W., Chairman, Independent Producer
vacant
Cook, Byron J., Cook Brothers
vacant
Harris, Charles D., General Public
vacant
Osbourne, Claude J., Independent Producer
Simon, G. D., Ladd Petroleum Corp.
Lewis, Gordon L., Department of Natural Resources, Secretary

Published by Authority of State of Michigan CL '70 s.321.6

Any part of this publication may be quoted
or reprinted with appropriate credit

Available from Information Services Center
Department of Natural Resources
Box 30028, Lansing, Michigan 48909

US ISSN 0085-3429

Michigan's Oil and Gas Fields Annual Statistical Summaries are numbered with consecutive even numbers. Consecutive odd numbers are reserved for Mineral Industry of Michigan Annual Statistical Summaries.

CONTENTS

	Page
ACKNOWLEDGEMENTS	iv
INTRODUCTION	1
PART 1 - GENERAL STATISTICAL INFORMATION	1
OIL AND GAS PERMITS	1
Table 1 - Initial Well Classification	1
Table 2 - Drilling Permits by District	1
Table 3 - New Well Completions by District	2
Table 4 - Oil and Gas Production by District in 1982	2
Illustration 1 - Oil and Gas Districts	2
Table 5 - Terminated Permit Numbers	3
Directionally Drilled Holes	3
Table 6 - Permits Issued for Directional Holes	3
Rework Applications, Transfers of Ownership	3
Oil and Gas Hearings	3
Table 7 - Summary of Oil and Gas Hearings.	3
WELL COMPLETIONS	3
Table 8 - Exploration and Development Well Completions	3
Table 9 - Service Well Completions	3
Major and Independent Company Well Completions	4
Table 10 - Well Completions by Majors and Independents	4
Table 11 - 1982 Drilled Footages by County	4
Well Casing Used in 1982 Well Completions	4
OIL AND GAS PRODUCTION	5
Table 12 - Oil and Gas Production by County	5
NATURAL GAS LIQUIDS	5
Table 13 - Condensate Production	6
Table 14 - Oil and Gas Valuation	6
OIL AND GAS IMPORTS AND EXPORTS	6
Table 15 - 1982 Monthly Crude Oil Imports (Bbls.)	6
Table 16 - 1982 Monthly Crude Oil Exports (Bbls.)	6
Table 17 - 1982 Monthly Pipeline Gas Imports (Mcf)	6
NEW FIELD AND POOL DISCOVERIES	6
Table 18 - Discovery Wells by Geologic System	7
Table 19 - Drilling Objectives by Geologic System	7
Table 20 - Discovery Well List	8
Table 21 - Drilling Permits, Well Completions, and Drilled Footages by County	10
WELL RECORDS AND OIL AND GAS MAPS	7
PART 2 - OIL AND GAS FIELDS	7
EXPLANATION	7
GAS STORAGE RESERVOIRS	11
WELL SAMPLE SETS	11
PART 3 - CUMULATIVE RECORDS	11
EXPLANATION	11
CROSS-REFERENCE LISTS	
Fields by County	12
Fields by Producing Formation	13
Illustration 2 Stratigraphic Succession in Michigan	15
Table 22 - Michigan Oil and Gas Fields	16
Table 23 - Gas Storage Reservoirs	35
Table 24 - Pressure Maintenance and Secondary Recovery Operations	36
Table 25 - Gas Plant Operations	37
Table 26 - Michigan Refineries	37
Table 27 - Tests Reported to Have Penetrated Precambrian Rock in the Southern Peninsula of Michigan	38
Illustration 3 - Precambrian Well Location Map	39
Table 28 - Cumulative Oil and Gas Production by County Through 1982	40
Table 29 - Cumulative Well Completions by County 1982.	41
Table 30 - Oil Production By Geologic System and Formation - 1982 and Prior Years	42
Illustration 4 - Trends in Michigan Oil Production	43
Table 31 - Gas Production By Geologic System and Formation - 1982 and Prior Years	44
Illustration 5 - Trends in Michigan Gas Production	45
Table 32 - Cumulative Oil Production By Geologic System and Formation - 1982 and Prior Years	46
Table 33 - Cumulative Gas Production By Geologic System and Formation - 1982 and Prior Years	47
Table 34 - Permits, Discoveries, Well Completions, Wells at End of Year, 1982 and Prior Years	48
Table 35 - State Oil and Gas Revenue	49
Illustration 6 - Michigan Oil and Gas Fields, 1982	50
Illustration 7 - Geological Survey Administrative District Boundries	52

ACKNOWLEDGEMENTS

The collection and compilation of oil and gas field data into a yearly report is a cooperative effort of the Geological Survey Division's oil and gas program personnel who are under the general supervision of James S. Lorenz, Geologist-in-Charge. Additional data were contributed by field office personnel under the supervision of Regional Geologists in DNR Regions II and III. Unit supervisors who provided specific information are:

Beverly L. Champion, Acting Supervisor, Regulatory Control Unit
Contribution: All data in columns under the headings "Number of Oil and Gas Wells" and "Brine Production" on Table 22.

Raymond H. Ellison, Supervisor, Production-Proration Unit. Contribution: All Michigan oil and gas production data, oil and gas valuation figures (Table 14), import and export figures (Tables 15-17), LPG and condensate figures (Table 13), secondary recovery projects (Table 24).

D. Michael Bricker, Supervisor, Subsurface and Petroleum Geology Unit. Contribution: All general drilling statistics and well completion data, discovery well and deep test data, cumulative records, and all other summary information not specifically provided by other Unit supervisors or by other agencies. Annual Statistical Summary compilation and manuscript preparation by staff members of the Subsurface and Petroleum Geology Unit.

The compilers also acknowledge the assistance of the Interstate Supply personnel, Office of Utilities Operation, Gas Division, Department of Commerce, in providing figures on natural gas imports via interstate pipelines, and the Lands Division, Department of Natural Resources, in providing figures for state revenue derived from various oil and gas transactions.

Michigan oil and gas production figures maintained by the Production-Proration Unit are compiled by the Unit from records obtained from the Michigan Department of Treasury and from records filed by producers and purchasers. All hydrocarbon production figures cited herein are subject to correction as warranted.

Inquiries concerning information contained in this publication should be directed to the appropriate Unit supervisor as noted earlier.

Compilers: D. Michael Bricker
Ronald C. Elowski
C. Robert Reszka
Randall L. Milstein

Special acknowledgement is given to Margaret T. Schineman for manuscript word processing and to Steven E. Wilson and Gregory A. Wilson, Information and Technical Services Unit, for word processing technical input on the Geological Survey Division's statistical summary.

Lansing, Michigan
May, 1984

MICHIGAN'S OIL AND GAS FIELDS, 1982

INTRODUCTION

To help foster the development of Michigan's hydrocarbon resources, statistical data have been maintained and published for many years. This issue of the oil and gas field statistical summary brings together information on various facets of Michigan's oil and gas industry activities.

The information contained in this oil and gas summary has been treated as uniformly as possible from year to year so that the data reflect accurately the actual figures and other information that should be credited to this year. The data found herein are mainly derived from records maintained by the Oil and Gas Section, Geological Survey Division, Department of Natural Resources.

This publication is divided into three parts. Part 1 summarizes significant statistics on oil and gas field activities and includes numerous other related records kept by the Oil and Gas Section. Part 2 contains specific information on Michigan's oil and gas fields, gas storage fields, and other related subjects. Part 3 contains cumulative records important to the oil and gas industry.

Certain well completion data are furnished to the American Petroleum Institute (API) and the American Association of Petroleum Geologists (AAPG) on a regular basis. Reports citing preliminary oil and gas statistics and production figures are also prepared for the Interstate Oil Compact Commission (IOCC). API publishes the data in monthly and quarterly reports. Year-end printouts of the data are made available to authors of the AAPG yearly Development Papers and to others. Year-end figures published by API are in general agreement with figures for similar categories published in this summary. Oil and gas production data are supplied by request to the United States Bureau of Mines for publication in their minerals yearbook.

Statistical data on Michigan oil and gas activities, derived from outside sources, are also published by the Oil and Gas News, Mt. Pleasant, Michigan; Petroleum Information, Incorporated, Denver, Colorado; American Petroleum Institute, Washington, D.C.; American Association of Petroleum Geologists, Tulsa, Oklahoma; Interstate Oil Compact Commission, Oklahoma City, Oklahoma; World Oil, Houston, Texas; and Oil and Gas Journal, Tulsa, Oklahoma.

It should be noted that certain figures for the number of exploratory, development, and service wells drilled and completed, the number of new fields and pools discovered, oil and gas production figures, and other data published in this summary may differ from figures reported by regional or national trade publications or by industry reporting services. The differences in the various statistics are generally minor and are due to methods of gathering and reporting well data, determining cutoff dates for reporting yearly statistics, and the necessity for making projections and estimates for certain types of reports.

Other factors which may result in statistical differences are internal decisions of the Oil and Gas Section regarding final year-end status of completed wells and decisions resulting from public hearings on oil and gas matters. For example, a well originally classified as a development well, and reported as such to one of the above organizations, may later be reclassified as the discovery well for a new pool or field, or a gas well might later be declared an oil well completion on the basis of new evidence. Frequently the changes in well status cannot be readily passed on to these outside organizations so that their records can be updated prior to publications of their final statistics.

PART 1
GENERAL STATISTICAL INFORMATION
OIL AND GAS PERMITS

Michigan's oil and gas permit system began in 1927 with the issuance of permit number 1. Since then, permit numbers have been issued in numerically consecutive order. Permits issued under Act 61, P.A. of 1939, as amended are terminated one year after date of issue if actual drilling operations have not begun.

The distribution of oil and gas drilling permits (including terminated permits) according to districts (oil and gas district map, Illustration 1) through a five year period is seen in Table 2.

Deepening permits were issued for 51 wells during 1982 as compared with 54 the previous year. Deepening permits issued in 1982 began with number 2062 and ended with number 2115.

Directionally Drilled Holes

Environmental and economic considerations have necessitated the drilling of a large number of directional holes since 1972, particularly to help locate Niagaran reefs. During 1982 there were 217 permits issued to drill directional holes. Many of these holes involve using the upper part of a previously drilled hole which, after being initially completed as a dry hole, was plugged back and directionally drilled to a more favorable subsurface location. Only one producing well is allowed per well bore, regardless of the number of holes directionally drilled from the same well bore.

Each new directional hole, even if drilled from the same surface location and using the upper part of a previously drilled well, is treated as a separate test and is assigned its own unique permit number.

TABLE 1 INITIAL WELL CLASSIFICATION

INITIAL CLASSIFICATION	1980	1981	1982
Exploratory wells	356	561	509
Development wells	456	470	536
Gas storage facility wells	25	10	7
LPG storage facility wells	0	0	0
Brine disposal wells	5	2	0
Water injection wells	5	5	0
Total	847	1,048	1,052

TABLE 2 DRILLING PERMITS BY DISTRICT

DISTRICT	Permits Issued				
	1978	1979	1980	1981	1982
Basin	146	161	251	359	374
Northern	284	271	284	296	322
Southeastern	98	63	109	91	74
Southwestern	47	60	104	180	166
Western	115	94	108	122	116
Totals	690	649	856	1,048	1,052

TABLE 3 NEW WELL COMPLETIONS BY DISTRICT

Classifications of New Well Completions	Basin		Northern		Western		Southwestern		Southeastern		Totals	
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
Exploratory Wells												
Oil	14	11	18	23	3	8	15	6	1	6	51	54
Gas	3	7	6	11	2	3	5	9	2	4	18	34
D&A	57	68	127	167	55	59	58	62	33	24	330	380
Total	74	86	151	201	60	70	78	77	36	34	399	468
Development Wells												
Oil	99	198	27	37	21	25	25	45	29	11	201	316
Gas	2	3	13	13	3	0	3	6	4	1	25	23
D&A	18	33	51	53	18	15	24	19	9	5	120	125
Total	119	234	91	103	42	40	52	70	42	17	346	464
Service												
WI	9	5	5	3	0	2	0	0	2	3	16	13
BDW	1	3	3	2	2	1	0	2	0	0	6	8
GS	3	0	9	9	0	0	0	0	0	4	12	13
LPG	0	0	0	0	0	0	0	0	0	0	0	0
Total	13	8	17	14	2	3	0	2	2	7	34	34
Total Completions	206	328	259	318	104	113	130	149	80	58	779	966

TABLE 4 OIL AND GAS PRODUCTION BY DISTRICT IN 1981

District	Barrels Oil	MCF Gas
Basin	5,495,526	9,467,529
Northern	14,836,341	69,825,074
Southeastern	1,970,954	14,759,748
Southwestern	1,276,735	2,177,952
Western	7,755,885	45,958,481
Totals	31,335,441	142,190,784

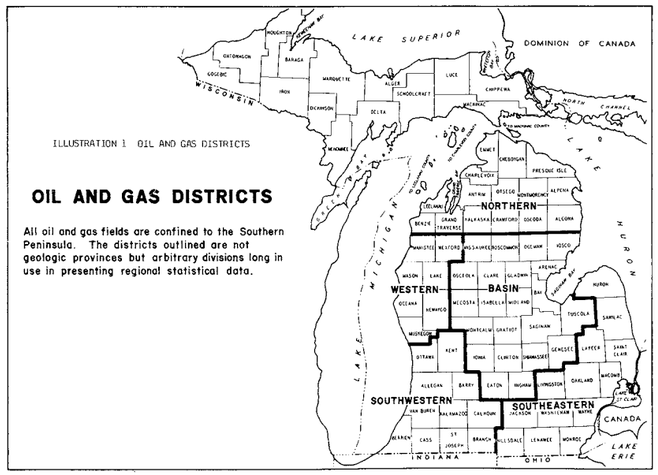


ILLUSTRATION 1 OIL AND GAS DISTRICTS

OIL AND GAS DISTRICTS

All oil and gas fields are confined to the Southern Peninsula. The districts outlined are not geologic provinces but arbitrary divisions long in use in presenting regional statistical data.

TABLE 5 TERMINATED PERMIT NUMBERS

31795	34436	34760	34921
31796	34469	34762	34945
31797	34497	34804	34950
31798	34523	34835	34959
31799	34524	34836	34969
31800	34451	34840	34974
31801	34630	34841	34975
31802	34631	34842	34976
34247	34632	34843	34977
34257	34634	34844	34978
34294	34649	34845	34979
34356	34650	34853	DP#1989
34368	34661	34854	34984
34387	34665	34862	35319
34423	34670	34884	35471

TABLE 6 PERMITS ISSUED FOR DIRECTIONAL HOLES

Barry 1 Permit
35407
Calhoun 23 permits
35366, 35435, 35480, 35569, 35602, 35616, 35620, 35635, 35641, 35648, 35665, 35727, 35731, 35867, 35875, 35891, 35923, 36042, 36153, 36165, 36176, 36374, 36378
Cheboygan 3 permits
35708, 35729, 36119
Crawford 3 permits
35870, 36247, 36357
Eaton 4 permits
35365, 35423, 35840, 35928
Gd. Traverse 68 permits
35377, 35381, 35390, 35397, 35424, 35483, 35492, 35493, 35516, 35529, 35567, 35574, 35580, 35597, 35615, 35625, 35628, 35633, 35636, 35638, 35671, 35703, 35706, 35751, 35795, 35824, 35827, 35839, 35865, 35884, 35888, 35897, 35900, 35901, 35907, 35921, 35934, 35935, 35936, 35957, 36003, 36004, 36011, 36012, 36023, 36031, 36058, 36059, 36107, 36148, 36157, 36158, 36169, 36199, 36207, 36217, 36244, 36249, 36254, 36266, 36272, 36284, 36293, 36299, 36302, 36315, 36359, 35979
Ingham 6 permits
35401, 35801, 35908, 35841, 35368, 36318
Isabella 3 permit
35787, 36161, 36380
Jackson 1 permit
35526
Kalkaska 30 permits
35404, 35489, 35538, 35541, 35595, 35674, 35681, 35684, 35701, 35707, 35743, 35769, 35881, 35910, 35916, 35918 35971, 35995, 36027, 36043, 36072, 36094, 36120, 36216, 36240, 36301, 36320, 36360, 36388, 36391
Livingston 5 permits
35621, 36170, 36322, 36351, 36162
Macomb 4 permits
35561, 35770, 35906, 35959
Manistee 39 permits
35355, 35479, 35481, 35501, 35514, 35570, 35599, 35611, 35629, 35639, 35672, 35685, 35691, 35772, 35859, 35937, 35996, 36021, 36041, 36066, 36074, 36079, 36092, 36093, 36133, 36144, 36150, 36160, 36180, 36242, 36246, 36255, 36275, 36276, 36279, 36285, 36314, 36326, 36389
Mason 2 permits
35823, 36331
Mecosta 1 permit
35515
Montmorency 2 permits
35486, 36145
Newaygo 2 permits
35952, 35980
Oakland 1 permit
35771
Oceana 2 permits
35387, 35434
Osceola 1 permit
36068
Otsego 28 permits
35374, 35376, 35452, 35531, 35752, 35796, 35803, 35825, 35836, 35837, 35849, 35878, 35925, 35941, 35683, 35530, 35984, 35992, 36025, 36116, 36117, 36141, 36257, 36278, 36323, 36347, 36377, 36392
Presque Isle 15 permits
35445, 35487, 35667, 35678, 35694, 35780, 35782, 35879, 36138, 36167, 36182, 36200, 36208, 36224, 36298
Roscommon 1 permit
36166
St. Clair 2 permit
35388, 35402
Wexford 1 permits
35954

Rework Applications, Transfers of Ownership

In addition to issuance of permits for various types of wells covered under Act No. 61, P.A. of 1939, as amended, 330 applications were received and approved for rework operations on existing wells. Letters of termination were sent out for 60 previously issued permits. Transfers of ownership were processed for 205 wells. Corrections of location, well name, or other detail involving specific permits were made for 114 wells, and cancel and transfer of permit were made for 50 others. The surface location as well as the projected bottom-hole location is published for each permitted directionally drilled hole. After the well is drilled and the directional survey is filed, the correct bottom-hole location is determined from the survey record and then published as a correction for the initial projected bottom-hole location. Corrections of this type were published for 218 wells.

Oil and Gas Hearings

Oil and Gas Section activities included scheduling and preparation for hearings on oil and gas matters and the issuance of orders resulting from these hearings. These activities are summarized in Table 7.

TABLE 7 SUMMARY OF OIL AND GAS HEARINGS

Advisory Board Hearings held	10
Administrative Hearings held	25
Total Orders issued	36
Total Causes heard	36

Includes matters related to:

15	Spacing Orders
6	Proration Orders
7	Special Orders
1	Unitization
2	General Rules
4	Compulsory Pooling
1	Gas Storage

WELL COMPLETIONS

TABLE 8 EXPLORATORY AND DEVELOPMENT WELL COMPLETIONS

Year	Exploratory Wells			Development Wells			Totals
	Oil	Gas	Dry	Oil	Gas	Dry	
1977	35	36	230	101	34	111	547
1978	29	25	214	117	32	111	528
1979	42	28	187	131	30	103	521
1980	41	21	257	167	30	159	675
1981	51	18	330	201	25	120	745
1982	54	34	380	316	23	125	932

TABLE 9 SERVICE WELL COMPLETIONS

Year	GS	INJ	LPG	BDW	Totals
1977	43	2	1	4	50
1978	60	11	0	3	74
1979	51	13	0	4	68
1980	41	9	2	5	57
1981	12	16	0	6	34
1982	13	13	0	8	34

GS = Gas Storage; INJ = Injection well; LPG = Liquidified Petroleum Gas well; BDW = Brine Disposal Well

Major and Independent Company Well Completions

Requests are frequently made for statistics on major oil company drilling activities in Michigan. The figures cited for the major companies do not include wells drilled by independents under farmout agreements with a major company or wells drilled by independents but partially supported by dry hole money or some other significant assistance from a major oil company. Independent oil companies, who have drilled most of Michigan's wells, are too numerous to cite individually. All figures cited for majors and independents were derived from inspection of operator names appearing on completion records. In Table 10, in cases where two or more companies were joint operators in a drilling venture, the well completion was attributed to the company whose name appears first (generally the major interest holder) on the official records.

Well Casing Used in Well Completion

Periodically, inquiries are made concerning the amount of casing (pipe) used in Michigan wells during a given year. Almost all oil and gas tests drilled in this state utilize rotary drilling techniques and require the setting of surface pipe and an intermediate casing string. A conductor pipe is set on many holes, and all wells completed as producers require a string of production casing.

TABLE 10 WELL COMPLETIONS BY MAJORS AND INDEPENDENTS

MAJOR	EXPLORATORY			DEVELOPMENT			SERVICE	
COMPANY	OIL	GAS	DRY	OIL	GAS	DRY	WELLS	TOTALS
AMOCO	1	1	9	1	0	9	0	21
MARATHON	0	0	0	7	0	0	5	12
SHELL	7	5	62	21	2	22	4	123
TEXACO	0	0	1	0	0	0	0	1
OTHER	0	0	3	91	0	2	3	99
SUBTOTAL	8	6	75	120	2	33	12	256
INDEPEND.	46	28	305	196	21	92	22	710
TOTALS	54	34	380	316	23	125	34	966

TOTAL WELLS DRILLED BY MAJORS AND INDEPENDENTS

EXPLORATORY WELLS	468
DEVELOPMENT WELLS	464
SERVICE WELLS	34

EXPLORATORY WELLS DRILLED

PERCENTAGE FOR MAJORS	19%
PERCENTAGE FOR INDEPENDENTS	81%

EXPLORATORY DISCOVERIES

PERCENTAGE FOR MAJORS	16%
PERCENTAGE FOR INDEPENDENTS	84%

DEVELOPMENT WELLS DRILLED

PERCENTAGE FOR MAJORS	33%
PERCENTAGE FOR INDEPENDENTS	67%

PRODUCING DEVELOPMENT WELLS DRILLED

PERCENTAGE FOR MAJORS	36%
PERCENTAGE FOR INDEPENDENTS	64%

DISCOVERY SUCCESS RATIO (TOTAL EXPLORATORY WELLS DIVIDED BY NUMBER OF DISCOVERY WELLS)

AVERAGE FOR MAJORS	1:6
AVERAGE FOR INDEPENDENTS	1:5

TABLE 11 DRILLED FOOTAGE BY COUNTY

County	Exploratory Wells	Development Wells	Service Wells
Allegan	7,249	33,975	- - -
Antrim	28,279	- - -	- - -
Arenac	15,700	17,633	- - -
Barry	3,440	- - -	- - -
Bay	6,843	69,638	- - -
Benzie	- - -	11,596	- - -
Berrien	- - -	4,045	- - -
Calhoun	168,154	56,209	3,315
Cass	18,924	19,885	1,509
Cheboygan	12,221	6,821	- - -
Clare	37,332	51,804	- - -
Clinton	6,716	- - -	- - -
Crawford	32,861	26,450	- - -
Eaton	35,545	14,542	- - -
Gd. Traverse	457,111	191,012	2,200
Genesee	6,425	- - -	- - -
Gladwin	45,131	64,630	- - -
Hillsdale	11,313	8,238	- - -
Ingham	43,729	12,535	- - -
Isabella	33,916	162,065	6,834
Jackson	10,569	4,466	- - -
Kalamazoo	4,358	- - -	- - -
Kalkaska	209,186	125,472	35,804
Kent	3,125	- - -	- - -
Lapeer	- - -	25,463	9,460
Lenawee	8,021	- - -	- - -
Livingston	14,577	- - -	- - -
Macomb	23,297	8,115	- - -
Manistee	190,700	147,065	6,477
Mason	21,467	- - -	- - -
Mecosta	29,118	8,385	- - -
Midland	11,928	12,922	- - -
Missaukee	73,239	268,985	- - -
Monroe	5,694	- - -	- - -
Montcalm	- - -	33,459	5,181
Montmorency	22,663	- - -	- - -
Muskegon	3,850	1,672	- - -
Newaygo	15,510	7,840	- - -
Oakland	16,141	4,054	- - -
Oceana	29,908	3,360	1,662
Ogemaw	- - -	46,124	13,891
Osceola	44,430	- - -	1,212
Oscoda	28,021	8,655	- - -
Otsego	186,418	83,320	33,558
Ottawa	3,133	4,376	- - -
Presque Isle	54,372	30,596	- - -
Roscommon	10,165	141,234	- - -
Saginaw	16,882	5,145	- - -
Sanilac	7,824	- - -	- - -
Shiawassee	1,860	- - -	- - -
St. Clair	16,301	5,686	9,442
St. Joseph	1,334	- - -	- - -
Tuscola	17,831	22,173	- - -
Van Buren	4,726	8,890	- - -
Washtenaw	2,501	- - -	- - -
Wexford	28,395	- - -	- - -
State Total	2,088,433	1,758,535	130,545

OIL AND GAS PRODUCTION

Oil and gas production figures are derived from records submitted to the Production-Proration Unit, Oil and Gas Section, Geological Survey Division, Department of Natural Resources and from tax records from the Michigan Department of Treasury. Treasury Department records are primarily concerned with gross production figures needed to calculate revenues. These data are supported by reports required from producing companies and purchasers by the Geological Survey Division.

Delays in reporting and changes in methods of reporting used by producing companies and purchasers result in a continuous correction and refinement of production figures. Consequently all monthly, yearly, or other production figures are subject to correction as warranted.

In an attempt to obtain national uniformity of data as recommended by the Interstate Oil Compact Commission, all annual and cumulative gas production figures for Michigan were converted to a standard base pressure for volumetric measurement of 14.73 pounds per square inch in 1978. This conversion and subsequent adjustment of gas production figures resulted in slight changes in cumulative production volumes in those fields which had been measured at varying pressure bases in prior years.

A no-flare order, enacted as a conservation measure, prohibits the flaring of oil-well gas and requires Salina-Niagaran oil wells in specified counties to be shut-in until a market connection is achieved for the sale of the gas or an exception to the order is granted. Consequently, Special Order No. 3-71, amended, in effect since late 1971, tends to temporarily curtail production from Salina-Niagaran oil wells until gas gathering pipelines are laid and connections made.

Another order, Special Order No. 1-73, deals with spacing and proration of Salina-Niagaran wells in specific counties. This order established basic 80-acre drilling units (either stand-up or lay-down units) for Salina-Niagaran oil and/or gas wells and state-wide proration for Salina-Niagaran oil reservoirs in the specified counties or parts of counties covered by the order. These prudent and justifiable conservation measures effectively prevent waste of millions of cubic feet of valuable and much needed gas that might have been flared in past years, and these measures should ultimately result in more efficient drainage of reef reservoirs and a greater recovery of the liquid hydrocarbons.

NATURAL GAS LIQUIDS

The amount of liquids produced from gas-condensate reservoirs are included in the yearly oil production totals shown in tabulations in this publication. Wells officially determined to be gas wells are assigned to the Public Service Commission for well connection permits and determination and jurisdiction of gas production rates. There is no restriction on the amount of liquids produced along with the gas. Gas plants operated by Shell Oil Company and Amoco Production Company in Kalkaska County strip natural gas liquids from the gas. The liquids are then sold to another company through the Shell pipeline that terminates at Marysville, Michigan.

TABLE 12 1982 OIL AND GAS PRODUCTION BY COUNTY

County	Barrels Oil	MCF Gas
Allegan	114,908	11,422
Antrim	91,873	311,582
Arenac	168,754	0
Barry	7,172	0
Bay	281,312	0
Benzie	181,986	191,100
Berrien	638	0
Calhoun	943,647	2,033,437
Cass	80,673	0
Cheboygan	858	0
Clare	431,351	456,873
Crawford	1,483,947	2,696,092
Eaton	620,081	3,969,646
Gd. Traverse	3,558,310	27,869,369
Genesee	19,924	58,483
Gladwin	289,975	0
Gratiot	6,967	0
Hillsdale	1,032,759	5,413,183
Huron	1,882	0
Ingham	904,119	2,217,482
Isabella	262,112	0
Jackson	1,380	0
Kalamazoo	1,128	0
Kalkaska	3,358,642	26,463,333
Kent	99,401	0
Lake	63,389	0
Lapeer	331,385	1,883,658
Lenawee	483	0
Livingston	1,177	284,460
Macomb	6,185	4,221,680
Manistee	6,966,356	41,892,896
Mason	157,054	1,209,293
Mecosta	17,382	5,710
Midland	172,419	0
Missaukee	1,051,199	2,208,182
Monroe	5,211	0
Montcalm	95,475	0
Muskegon	9,313	0
Newaygo	32,923	0
Oakland	197,541	1,575,624
Oceana	19,119	0
Ogemaw	551,131	58,645
Osceola	68,037	4,318
Oscoda	3,696	0
Otsego	6,133,240	12,293,598
Ottawa	10,389	133,093
Presque Isle	23,789	0
Roscommon	416,684	490,190
Saginaw	40,761	0
Shiawassee	6,309	0
St. Clair	388,221	1,381,143
Tuscola	91,534	0
Van Buren	18,779	0
Washtenaw	706	0
Wayne	4,024	0
Wexford	507,731	2,856,292
Totals	31,335,441	142,190,784

An attempt has been made to maintain records of condensate production from the northern reef reservoirs discovered since 1969. Production-Proration Unit records are show in Table 13 for condensate liquids.

TABLE 13 CONDENSATE PRODUCTION

Year	Barrels	Cumulative
1969	0	0
1970	18,946	18,946
1971	98,668	117,614
1972	125,768	243,382
1973	335,041	578,423
1974	1,187,498	1,765,921
1975	1,863,338	3,629,259
1976	1,896,870	5,526,129
1977	1,991,330	7,517,459
1978	2,295,263	9,812,722
1979	1,801,928	11,614,650
1980	1,582,638	13,197,288
1981	1,433,198	14,630,486
1982	1,031,671	15,662,157

Gas plant operations are summarized in Table 25. It should be noted that the LPG recovery figures for the Amoco and Shell plants in Kalkaska County include stabilized condensate as well as LPGs.

TABLE 14 OIL AND GAS VALUATION

	Average Wellhead Price*		Gross Value*	
	Oil	Gas		
Year	per Bbls.	per MCF	Oil	Gas
1969	$ 3.07	$ .26	$ 37,494,318	$ 9,296,332
1970	3.10	.27	36,246,376	10,476,482
1971	3.27	.26	38,858,706	6,775,629
1972	3.20	.31	41,556,432	10,314,222
1973	4.07	.40	59,412,710	17,494,727
1974	8.55	.51	154,746,373	35,181,955
1975	10.74	.63	262,351,653	65,103,875
1976	10.84	.88	329,636,770	120,252,528
1977	10.95	1.10	360,994,743	145,969,976
1978	12.34	1.11	427,881,248	166,920,524
1979	14.94	1.75	524,257,112	279,121,269
1980	21.55	2.36	728,607,821	372,855,197
1981	30.38	2.86	992,435,836	436,936,911
1982	32.53	3.19	1,023,472,164	461,049,971

*Source: Production-Proration Unit records

OIL AND GAS IMPORTS AND EXPORTS

Michigan refineries import some U.S. domestic and foreign crude oil each year. Overseas foreign sources include Libya and Nigeria. Canadian crude oil brought via pipeline from western Canada oil fields constitutes another important source of imports. Imports by month were report- ed by refineries and are shown in Table 15.

TABLE 15 1982 MONTHLY CRUDE OIL IMPORTS (Bbls.)

	Domestic & Foreign	Canadian	Total
January	1,192,793	0	1,192,793
February	766,133	0	766,133
March	689,716	64,688	759,404
April	659,916	0	659,916
May	824,464	0	829,464
June	875,696	0	875,696
July	885,088	0	885,088
August	816,266	0	816,266
September	715,303	0	715,303
October	727,632	0	727,632
November	1,369,852	0	1,369,852
December	815,377	0	815,377
Totals	10,338,236	64,688	10,402,924

Most Michigan produced crude oil goes to Michigan refineries but some is exported. Records provided to the Production-Proration Unit by companies reporting exports of Michigan crude are summarized in Table 16.

TABLE 16 1982 MONTHLY CRUDE OIL EXPORTS (Bbls.)

January	688,802
February	1,127,357
March	1,051,087
April	1,217,265
May	1,185,923
June	788,967
July	962,312
August	1,153,030
September	969,526
October	1,061,545
November	1,060,047
December	1,158,980
Total	12,424,841

TABLE 17 1982 MONTHLY PIPELINE GAS IMPORTS (Mcf)*

January	77,108,810
February	63,770,916
March	43,011,621
April	62,946,407
May	50,577,614
June	56,420,659
July	52,024,025
August	54,080,464
September	42,222,912
October	36,642,679
November	39,921,503
December	38,592,641
Total	617,320,251

* Compiled by the Federal Pipeline Tariff Analysis Section, Michigan Public Service Commission

NEW FIELD AND POOL DISCOVERIES

All the new discoveries are tentatively classified as Class E pools having possible oil and gas recoveries as defined by the Committee of Statistics of Drilling, American Association of Petroleum Geologists. These classes are used to give some estimate or measure of reserves found by a discovery well.

Class A - Over 50 million barrels oil or 300 BCF gas
Class B - 25-50 million barrels oil or 150-300 BCF gas
Class C - 10-25 million barrels oil or 60-150 BCF gas
Class D - 1-10 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

Michigan wells are initially classified as near as possible according to guidelines established by AAPG and API (AAPG Bulletin, Volume 58/8, August 1974, pages 1501-1503). Classifications such as exploratory, development, and the various types of service wells, are made after inspection of appropriate oil and gas maps and noting the location of the test in reference to established fields, dry holes, etc. Gas storage facility wells, water injection wells and other types of service wells are generally designated as such by the operator. The Lahee classification system for designating exploratory or development wells is particularly adaptable to structural traps but does not adapt to all situations involving small reefs such as are found in Michigan. Because of the apparent small areal extent of most reefs as shown by seismic anomalies and the close proximity of one reef to another, especially in the northern and southern reef belts, it has become increasingly difficult to classify with certainty all new well locations as exploratory or development.

Reservoir performance may show that a well previously classified as a development well should actually be considered as being in a separate reservoir or pool. Likewise, a so-called discovery well may actually turn out to be a development well to a nearby reef reservoir. Changes in classification may be the result of action by the regulating agency after enough data has been accumulated on the well or wells, or may result from new data presented at public hearings and the decision of the Supervisor of Wells after thorough consideration of the new data.

TABLE 18 DISCOVERY WELLS BY GEOLOGIC SYSTEM

SYSTEM	FORMATION OR PAY	NO. OF DISCOVERIES 1980	1981	1982
PENNSYLVANIAN		-	-	-
MISSISSIPPIAN	"MICHIGAN STRAY SS."	1	-	1
	"BEREA SS."	2	3	5
DEVONIAN	ANTRIM SHALE	2	-	1
	"TRAVERSE LIME"	5	3	3
	DUNDEE	1	-	1
	DETROIT RIVER	-	-	1
	"SOUR ZONE"	2	3	2
	RICHFIELD	3	1	3
SILURIAN	SALINA-NIAGARAN	46	58	65
ORDOVICIAN	TRENTON-BLACK RIVER	-	-	4
	PRAIRIE DU CHIEN	-	1	2

TABLE 19 DRILLING OBJECTIVES BY GEOLOGIC SYSTEM

SYSTEM	FORMATION OR PAY	PERCENTAGE 1980	1981	1982
PENNSYLVANIAN		-	-	.2
MISSISSIPPIAN	"MICHIGAN STRAY SS."	2.9	1.1	.9
	"BEREA SS."	2.6	3.8	5
DEVONIAN	ANTRIM SHALE	1.4	1.2	1
	"TRAVERSE LIME"	4.5	6.9	8
	DUNDEE	7.7	6.4	6
	DETROIT RIVER	-	-	2
	"SOUR ZONE" & RICHFIELD	12.7	15.2	18
SILURIAN	SALINA-NIAGARAN	64.1	58.5	54
ORDOVICIAN	TRENTON-BLACK RIVER	3.6	1.5	1
	PRAIRIE DU CHIEN	0.1	3.9	3
CAMBRIAN		-	1.2	.6
PRECAMBRIAN		.4	.3	.3

WELL RECORDS & OIL AND GAS MAPS

Descriptive geological logs and driller's logs are available for over 35,000 tests, including exploratory, development, facility and other types of wells. Individual well records may be purchased at a nominal cost from the Geological Survey Division. Drillers logs are available on 16 mm reel microfilm. For details please contact the Information and Technical Services Unit, Box 30028, Lansing, Michigan 48909, telephone (1-517) 373 1256. Electric or radiation logs of any type are not available for distribution or sale.

Blueprint copies of oil and gas field maps are available for every county in the Southern Peninsula. The maps show locations of oil and gas tests but do not show geological data or structural contour lines. County map scales are 1 inch equals 1 mile. Blueprint field maps are available for many oil and gas fields. These maps show well locations, well permit numbers, operators and lease names. They do not show geological data or structural contour lines. Field map scales are mainly 4 inches equals 1 mile. All manuscript maps or tracings from which blueprint copies are made are posted on a regular basis. An oil and gas field maps list may be obtained from the Geological Survey Division upon request.

PART 2

EXPLANATION

Part 2 brings together general information on Michigan's oil and gas fields, gas storage reservoirs, LPG storage facilities, gas plant operations, refinery facilities and other items.

Table 22 list Michigan's oil and gas fields and gas storage reservoirs. The symbol on the left margin of the table indicates the official classification of fields and pools at the end of the year. Classifications may be changed as warranted. Official field names are listed alphabetically in the first column and the producing pool, or pools, are shown under the heading Producing Formation or Pool. Most fields consist of one pool with oil or gas production coming from a single reservoir within a formation. Some fields have two or more separate pools, each producing from a different formation or stratigraphic interval and at a different depth. Most multi-pool fields are associated with a common structural feature. Salina-Niagaran reef oil or gas accumulations are mostly single-pool fields. Some, however, have several separate reef reservoirs designated as Pool A, Pool B and so on. Most have been so designated by administrative action following public hearings. Also, a few of the listed fields actually consist of two or more hydrocarbon accumulations which for administrative purposes have been consolidated under one field name.

Location of fields. The geographic location of fields and pools can be found by township and range on the oil and gas field map, Illustration 5. Due to space and scale limitations, all field names are not shown on the map.

The Pay Zone part of the table generally refers to data for the discovery well for the field or pool. The indicated pay thickness relates to the amount of pay opened or perforated in the discovery well and does not necessarily indicate total net or gross pay for the reservoir.

The Deepest Formation or Pool Tested column indicates the stratigraphically oldest formation penetrated and the deepest total depth reached beneath the field area. Data in these columns are updated periodically.

The Number of Wells column indicates the number of successful field wells drilled in the field to the end of the specified year, the number completed as producing wells during the specified year, the number abandoned during the year and the number of active wells at the end of the specified year.

TABLE 20 1982 DISCOVERY WELLS

COUNTY TOWNSHIP-T,R,SEC	FIELD NAME	OPERATOR & LEASE	PERMIT NUMBER	DEPTH TO PAY	TOTAL DEPTH	INITIAL PRODUCTION OIL WELLS	 GAS WELLS	PRODUCING FORMATION	AAPG POOL CLASS
CALHOUN CLARENCE-22,01S,04W	CLARENCE 22-01S-04W	REEF PETROLEUM CORP. GENEI & HEISLER #1-22	35893	3184	3612		1500 MCF	NIAGARAN	E
CALHOUN CLARENCE-29,01S,04W	CLARENCE 29-01S-04W	REEF PETROLEUM CORP. SIMMONS #4-29A	35727	3175	3330		2010 MCF	NIAGARAN	E
CLAHOUN CLARENCE-29,01S,04W	CLARENCE 29-01S-04W, P/A	REEF PETROLEUM CORP. FREDERICK #7-29	35750	3145	3390		1500 MCF EST.	A-1 CARBONATE NIAGARAN	E
CALHOUN CLARENCE-32,01S,04W	CLARENCE 32-01S-04W	REEF PETROLEUM CORP. CHILDS #2-32	35619	3061	3525	110 BOPD +310 MCF		NIAGARAN	E
CALHOUN CONVIS-12,01S,06W	CONVIS 12-01S-06W	SMITH PET. & TENEXCO, INC. WALTERS #1-12	35994	3171	3359		3800 MCF	NIAGARAN	E
CALHOUN CONVIS-17,01S,06W	CONVIS 17-01S-06W	ROBERT KLABZUBA BASS #1-17	35198	2909	3013	100 BOPD		NIAGARAN	E
CALHOUN CONVIS-23,01S,06W	CONVIS 23-01S-06W	KULKA & SCHMIDT LINDHOLM ET AL #1-23	35204	3040	3166	192 BOPD +75 MCF		A-1 CARBONATE	E
CALHOUN CONVIS-23,01S,06W	CONVIS 23-01S-06W P/A	KULKA & SCHMIDT McCLOUD #1-23	35732	2968	3103		SHUT-IN	NIAGARAN	E
CALHOUN CONVIS-32,01S,06W	CONVIS 32-01S-06W	REEF PETROLEUM CORP. MULL ET AL #1-32	35454	2845	3354	437 BOPD		NIAGARAN	E
CALHOUN LEE-03,01S,05W	LEE 03-01S-05W P/A	DON YOHE ENT., INC. TREADWELL #1-3	35494	3404	3418		500 MCF	NIAGARAN	E
CALHOUN LEE-15,01S,05W	LEE 15-01S-05W P/D	MGU DEVELOPMENT CO. WALTERS & LAVOY #1-15	35789	3102	3252		1000 MCF	A-1 CARBONATE	E
CALHOUN LEE-16,01S,05W	LEE 16-01S-05W P/C	MGU DEVELOPMENT CO. MGU #1-16	35942	3119	3301		750 MCF +4BWPD	A-1 CARBONATE NIAGARAN	E
CALHOUN LEE-10,01S,05W	LEE 20-01S-05W P/A	COLLINS BROS. OIL CO. LAVOY #1-20	34276	3031	3236		1182 MCF EST	A-1 CARBONATE	E
CASS CALVIN-20,07S,14W	CALVIN, SEC. 20	FAYETTE DRILLING CO. SMITH, GEORGE #1-20	35811	766	768	168 BOPD EST.		TRAVERSE	E
CASS WAYNE-25,05S,15W	DOWAGIAC CREEK	POWELL PRODUCTION, INC. JAMES HUNTER #1-25	35956	972	974	96 BOPD EST.		TRAVERSE	E
CHEBOYGAN FOREST-22,33N,01E	FOREST 22-33N-01E	SHELL OIL CO. STATE-FOREST #1-22A	35016	4029	4442	285 BOPD +240 MCF		A-1 CARBONATE NIAGARAN	E
CLARE GRANT-07,17N,04W	McKAY	JEM PETROLEUM CORP. WEINGARTZ #1-7A	35191	1498	10158		350 MCF +50 BWD	MICHIGAN- STRAY	E
CLARE WINTERFIELD-30,20N,06W	WINTERFIELD	HUNT ENERGY CORP. WINTERFIELD DEEP UNIT "A" #1	33680	10276	12017		190 MCF +8 BWD	BLACK RIVER	E
CRAWFORD FREDERIC-21,28N,04W	FREDERIC 21-28N-04W	SHELL OIL CO. STATE-FREDERIC #3-21	34988	7388	7520	333 BOPD +415 MCF		NIAGARAN	E
EATON EATON-35,02N,04W	EATON 35-02N-04W	PATRICK PETROLEUM CORP. DAILY ET AL #1-35	35053	3734	3885	204 BOPD +143 MCF		NIAGARAN	E
EATON EATON RAPIDS-22,02N,03W	EATON RAPIDS 22-02N-03W	KULKA & SCHMIDT BOSWORTH #1-22A	35365	3980	4108		4 MCF	NIAGARAN	E
GLADWIN BEAVERTON-13,17N,02W	BEAVERTON	THE WISER OIL CO. CROCKETT #1-13	34805	2577	5135	1 BOPD +1 BWD		BEREA	E
GLADWIN BILLINGS-02,17N,01E	BILLINGS	MUSKEGON DEVELOPMENT CO. McCRANDALL #1B-2	34492	2142	2207	2 BOPD		BEREA	E
GLADWIN TOBACCO-30,17N,01W	BEAVERTON SOUTH	MICHIGAN PET. EXP., INC. BRUBAKER-MYERS #1-30	35523	2534	4385	6 BOPD +1/2 BWD		BEREA	E
GLADWIN TOBACCO-32,17N,01W	TOBACCO, SEC. 32	PAGE PETROLEUM, INC. STALEY #1-32	35395	2524	4358	15 BOPD +10 BWD		BEREA	E
GD TRAVERSE BLAIR-11,26N,11W	BLAIR 11-26N-11W	NORTHERN MICH. EXPL. CO. CONROY & WATSON #1-11A	36207	5470 (MD)	5388 (TVD)	157 BOPD +25 BWD	+194 MCF	NIAGARAN	E
GD TRAVERSE BLAIR-13,26N,11W	BLAIR 13-26N-11W	FINDERS OIL & GAS CO. SCHUMSKY-STATE-BLAIR #1-13	35529	5704	5860	265 BOPD +190 BWD	+297 MCF	NIAGARAN	E
GD TRAVERSE BLAIR-20,26N,11W	BLAIR 20-26N-11W	ROBERT RAFFAELE, INC. NORTON & WOODS #1-20A	35574	5632	5722	153 BOPD +120 MCF		NIAGARAN	E
GD TRAVERSE EAST BAY-09,26N,10W	EAST BAY 09-26N-10W	WEST BAY EXPL. CO. ARBUTUS LAKE #1-9	35638	6250	6500	300 BOPD +5 BWD	+220 MCF	NIAGARAN	E
GD TRAVERSE EAST BAY-12,26N,10W	EAST BAY 12-26N-10W	WEST BAY EXPL. CO. KANTZ #1-12	35751	6782 (MD)	6840 (MD)	231 BOPD +1780 MCF		NIAGARAN	E
GD TRAVERSE EAST BAY-16,26N,10W	EAST BAY 16-26N-10W	MICHIGAN PET. EXPL. INC. EDWARDS #1-16A	35865	5912	6116	281 BOPD +55 MCF		NIAGARAN	E
GD TRAVERSE GRANT-26,25N,12W	GRANT 26-25N-12W, P/A	TRAVERSE OIL CO. DIXON #1-26	35219	6076	6335	408 BOPD +480 MCF		NIAGARAN	E
GD TRAVERSE GREEN LAKE-35,26N,12W	GREEN LAKE 35-26N-12W	MACK, DELTA & GRT LKS NIAG MORRISON #1-35B	35424	5894 (MD)	6078		112 BCPD +3500 MCF	NIAGARAN	E
GD TRAVERSE MAYFIELD-08,25N,11W	MAYFIELD 08-25N-11W	GREAT LAKES NIAGARAN BERRY ET AL #1-8	34147	6001	6110	227 BOPD +370 MCF		NIAGARAN	E
GD TRAVERSE MAYFIELD-22,25N,11W	MAYFIELD 22-25N-11W	TRAVERSE OIL CO. RICHARDS #1-22B	35483	6670	6627		360 BCPD +2000 MCF	NIAGARAN	E
GD TRAVERSE MAYFIELD-28,25N,11W	MAYFIELD 28-25N-11W, P/B	SHELL OIL CO. PHOENIX PETROLEUM #6-28C	35636	6606 (MD)	6695 (MD)	45 BOPD +105 MCF		NIAGARAN	E
HILLSDALE PITTSFORD-07,07S,01W	PITTSFORD, SEC. 7	ANNEX OIL CORP. RICHARD KRAGE #1	35229	3816	3850	SMALL OIL WELL		BLACK RIVER	E
HILLSDALE PITTSFORD-29,07S,01W	PITTSFORD, SEC. 29	ANNEX OIL CORP. SEVERANCE-FRANTZ #1-A	35064	3510	3851	SMALL OIL WELL		BLACK RIVER	E
INGHAM STOCKBRIDGE-07,01N,02E	STOCKBRIDGE 07-01N-02E, P/A	MGU DEVELOPMENT CO. NIGHTINGALE #1-7	36095	3934	4016	4 BOPD + 5 MCF +100 BWD		NIAGARAN	E
INGHAM STOCKBRIDGE-07,01N,02E	STOCKBRIDGE 07-01N-02E, P/B	MGU DEVELOPMENT CO. BARTH ET AL #1-7A	35841	3940	4025		1000 MCF	NIAGARAN	E
INGHAM WHITE OAK-18,02N,02E	WHITE OAK 17-02N-02E	TRAVERSE OIL CO. NELSON #1-17	35368	4184 (MD)	4512 (MD)	197 BOPD +98 MCF		A-1 CARBONATE NIAGARAN	E
ISABELLA DENVER-19,15N,03W	LEATON	DART O & G & H E TOPE, INC. WEZENSKY #1-19	35206	4621	4820		247 MCF +46 BWPD	DETROIT RIVER RICHFIELD	E
ISABELLA ISABELLA-02,15N,04W	ROSEBUSH	H. E. TOPE, INC. HORAN #1-B	35425	4466	4850	100 BOPD +100 MCF		DETROIT RIVER SOUR ZONE	E
ISABELLA VERNON-26,16N,04W	VERNON	NEYER OIL, INC. McGUIRE #1-26	35091	4708	4906	90 BOPD +82 MCF +21 BWD(RICH + SZ)		DETROIT RIVER RICHFIELD	E
JACKSON SPRINGPORT-21,01S,03W	SPRINGPORT 20-01S-03W	REEF PETROLEUM CORP. LEONARD ET AL #1-21A	35526	3384 (MD)	3552 (TVD)		SHUT-IN GW EST 600 MCF	NIAGARAN	E

TABLE 20 1982 DISCOVERY WELLS

COUNTY TOWNSHIP-T,R,SEC	FIELD NAME	OPERATOR & LEASE	PERMIT NUMBER	DEPTH TO PAY	TOTAL DEPTH	INITIAL PRODUCTION OIL WELLS	 GAS WELLS	PRODUCING FORMATION	AAPG POOL CLASS
KALKASKA BLUE LAKE-06,28N,05W	BLUE LAKE 06-28N-05W	PENINSUL. O&G/GRT LKS NIAG SNYDER #1-6	35277	6774 (MD)	7002	225 BOPD +355 MCF		NIAGARAN	E
KALKASKA BLUE LAKE-08,28N,05W	BLUE LAKE 08-28N-05W	SCHMUDE & PANGBORN STATE-BLUE LAKE #1-8	35433	6786	7200	300 BOPD +445 MCF		NIAGARAN	E
KALKASKA BLUE LAKE-23,28N,05W	BLUE LAKE 23-28N-05W, P/A	SHELL OIL CO. STATE-BLUE LAKE #3-23A	34752	7257 (MD)	7373 (TVD)	352 BOPD +18 BWPD	+603 MCF	NIAGARAN	E
KALKASKA COLD SPRINGS-10,28N,06W	COLD SPRINGS 10-28N-06W	JENNINGS PETROLEUM CORP. STATE-CLD SPG OSBORNE #1-10B	35916	6797 (MD)	6946 (TVD)	75 BOPD +75 MCF		NIAGARAN	E
KALKASKA COLD SPRINGS-13,28N,06W	COLD SPRINGS 13-28N-06W	WEST BAY EXPL. CO. LITTLE TWIN #1-13B	36240	7146 (MD)	7325(MD) 6950(TVD)	300 BOPD +333 MCF		NIAGARAN	E
KALKASKA KALKASKA-28,27N,07W	KALKASKA 28-27N-07W, P/C	REEF PETROLEUM CORP. LEWIS-MYERS #1-28	35372	7114	7285		360 BC +4578 MCF	NIAGARAN	E
KALKASKA KALKASKA-29,27N,08W	KALKASKA 29-27N-08W	NORTHERN MICH. EXPL. CO. STATE-KALKASKA #3-29A	35404	6605	6899(MD) 6867(TVD)	252 BOPD +6 BWPD	+200 MCF	NIAGARAN	E
KALKASKA SPRINGFIELD-32,25N,08W	SPRINGFIELD SEC. 32	JEM PETROLEUM CORP. VANTOL #1-32	35669	2358	4367		2100 MCF	TRAVERSE	E
LENAWEE FRANKLIN-36,05S,03E	FRANKLIN	N.R.M. PETROLEUM CORP. SELDERS #1-36	34689	3976	4220	1 BOPD +10 MCF		PRAIRIE DU CHIEN	E
LIVINGSTON HAMBURG-07,01N,05E	HAMBURG 07-01N-05E	DART O&G/MICH. OIL CO. LAVEY-STATE-HAMBURG #2-7	35544	3880	4168	50 BOPD 25 MCF		NIAGARAN	E
MACOMB LENOX-36,04N,14E	LENOX 36-04N-14E	SCHMUDE & PANGBORN ASSOC. OAK RDG GOLF ST-LENOX #1-36	36206	2722	2815	255 BOPD 168 MCF		NIAGARAN	E
MANISTEE BROWN-07,22N,15W	BROWN 07-22N-15W, P/A	SHELL OIL CO. DIENES #3-7	35202	4613	4785	288 BOPD +250 MCF		NIAGARAN	E
MANISTEE CLEON-25,24N,13W	CLEON 25-24N-13W	FLYNN ENERGY CORP. AGAR #1-25A	35570	5906 (MD)	6103(MD) 6067(TVD)	2 BOPD		NIAGARAN	E
MANISTEE CLEON-26,24N,13W	CLEON 26-24N-13W, P/B	FLYNN ENERGY CORP. HOEKWATER #1-26A	35639	5914 (MD)	6056(MD) 6028(TVD)	30 BOPD +30 BWD	+80 MCF	NIAGARAN	E
MANISTEE MANISTEE-17,22N,16W	MANISTEE 17-22N-16W, P/B	SHELL OIL CO. COMMERCE INVEST. CO. #4-17	35211	3950	4378	321 BOPD +134 MCF		NIAGARAN	E
MANISTEE MAPLE GROVE-01,23N,14W	MAPLE GROVE 01-23N-14W, P/A	TRAVERSE OIL CO. STATE-MAPLE GROVE #3-1	35008	5818 (MD)	5870(MD) 5587(TVD)	420 BOPD 567 MCF		NIAGARAN	E
MASON AMBER-06,18N,17W	AMBER 06-18N-17W	MILLER BROTHERS WEINERT #1-6	36225	4158	4520	96 BOPD +2 MMCF		NIAGARAN	E
MASON VICTORY-26,19N,17W	VICTORY 26-19N-17W	MILLER BROTHERS HEDRICK #1-26A	35823	4922 (MD)	5119(MD) 4919(TVD)		1MMCF	NIAGARAN	E
MECOSTA CHIPPEWA-12,16N,08W	FORK	MIDWEST OIL PROD. THELMA ROUSSEAU #1-12	35426	4653	5100		40 BCPD +300 MCF	DETROIT RIVER SOUR ZONE	E
MIDLAND LINCOLN-23,15N,01E	AVERILL	THE WISER OIL CO. NIGHTLINGER #1-23	36090	2445	2550	6 BOPD +35 BWD		BEREA	E
MONROE SUMMERFIELD-19,07S,06E	SUMMERFIELD SEC. 19	BLUNT DRILLING CO. SCHADEWALD, WM ET AL #1-19	35961	1985	2182	397 BOPD +143 MCF		TRENTON	E
NEWAYGO GOODWELL-08,14N,11W	GOODWELL	CENTRAL MICH. EXPL. CO. C. R. HARRIS #1	9976 DP 2024	3404	3459	20 BOPD		"REED CITY"	E
OAKLAND ORION-36,04N,10E	ORION 36-04N-10E	GLEN L. SEGERLUND JACOB #1-36	34740	3894	4206		7 BCPD +4485 MCF	NIAGARAN	E
OCEANA BENONA-22,14N,18W	BENONA 22-14N-18W, P/A	AMOCO PRODUCTION CO. SCHULTZ UNIT #2-22	35357	3875	4102		64 BCPD +2300 MCF	NIAGARAN +4 BWD	E
OCEANA CLAYBANKS-02,13N,18W	CLAYBANKS 02-13N-18W	MILLER BROTHERS OIL CORP. FARRIS-HOPPER #1-2	34778	3800	3920	500 BOPD +1000 MCF		NIAGARAN	E
OSCEOLA EVART-31,17N,08W	HERSEY	WILLMET, INC. GRAY #1-31	35800	8137	9769		1438 MCF +24 BWD	NIAGARAN "CLINTON"	E
OSCODA BIG CREEK 14-25N-02E	WAGNER LAKE	HUNT ENERGY CORP. U..S.A. BIG CREEK UNIT #1	34070	7676	11691		10 BOPD +280 MCF	A-1 CARBONATE	E
OSCODA BIG CREEK-23,25N,02E	ECHO LAKE	HUNT ENERGY CORP. U.S.A. BIG CREEK #1-23	34748	4197	4268	10 BOPD +15 MCF +15 BWD		DETROIT RIVER "RICHFIELD"	E
OTSEGO CHARLTON-06,30N,01W	CHARLTON 06-30N-01W	NORTHERN MICH. EXPL. CO. ZIEMET-HIG.-ST-CHARLT. #1-6	35209	5957	5975	300 BOPD +350 MCF		NIAGARAN	E
OTSEGO CHARLTON-16,30N,01W	CHARLTON, SEC. 16	WAINOCO OIL & GAS CO. JOHANNESBURG MFG. #3-16	35115	7839	8710		30 BCPD +625 MCF	PRAIRIE DU CHIEN +3 BWD	E
OTSEGO CHESTER-33,30N,02W	CHESTER, SEC. 33	NORTH MICH. LAND & OIL CORP. WOLFE #1-33	35894	1456	1565		100 MCF +200 BWD	ANTRIM	E
OTSEGO CORWITH-12,32N,01W	CORWITH 12-32N-01W	SHELL OIL CO. STATE-CORWITH #1-12	35993	4526	4694		48 BCD +2575 MCF	NIAGARAN + 34 BWD	E
OTSEGO CORWITH-14,32N,01W	CORWITH 14-32N-01W	SHELL OIL CO. STATE-CORWITH #1-14	35374	4681	4825		72 BCD + 3000 MCF	NIAGARAN	E
OTSEGO CORWITH-23,32N,01W	CORWITH 23-32N-01W	SHELL OIL CO. STATE-CORWITH #1-23	35375	4490	4882		1100 MCF	NIAGARAN	E
OTSEGO CORWITH-31,32N,01W	CORWITH 31-32N-01W	SHELL OIL CO. STATE-CORWITH #2-31	35710	4792	5014	420 BOPD +365 MCF		NIAGARAN	E
OTSEGO DOVER-22,31N,02W	DOVER 22-31N-02W, P/B	DELTA OIL CO. DELTA-BLANZY #1-22	34963	5076	5226	158 BOPD 102 BWPD		NIAGARAN	E
ROSCOMMON BACKUS-27,22N,02W	DENTON CREEK	MUSKEGON DEVELOPMENT CO. STATE-BACKUS #1-27	35970	4812	5330	40 BOPD +16 MCF +	TRACE WATER	DETROIT RIVER "SOUR ZONE"	E
ST. CLAIR CASCO-07,04N,15E	CASCO 07-04N-15E	SCHMUDE & PANGBORN TESCHLER #1-7	36248	2840	3091		2607 MCF +24 BWD	NIAGARAN	E
ST. CLAIR COLUMBUS-35,05N,15E	COLUMBUS, SEC. 35	SCHMUDE & PANGBORN PLONKA #1-35	35348	2706 (MD)	2960(MD) 2889(TVD)		2000 MCF	NIAGARAN	E
WEXFORD HANOVER-05,24N,11W	HANOVER 05-24N-11W	SHELL OIL CO. GRAF ET AL #1-5A	35954	6535 (MD)	6714(TVD)		165 BCD +2300 MCF	NIAGARAN	E

TABLE 21 DRILLING PERMITS, WELL COMPLETIONS, DRILLED FOOTAGE BY COUNTY, 1982

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

COUNTY	OIL/GAS PERMITS ISSUED	OIL & GAS TESTS Completed Explor.	Devel.	RESULTS Oil Wells	Gas Wells	Dry Holes	SERVICE WELLS Completed G.S.	B.D.W.	TOTAL WELLS DRILLED	TOTAL FOOTAGE DRILLED Explor.	Devel.	Fac.	Average Well Depth
Allegan	15	2	12	10	0	4	0	0	14	7,249	33,975	0	2,945
Antrim	6	5	0	0	0	5	0	0	5	28,279	0	0	5,655
Arenac	10	2	5	4	0	3	0	0	7	15,700	17,633	0	4,762
Barry	2	1	0	0	0	1	0	0	1	3,440	0	0	3,440
Bay	36	3	28	22	0	9	0	0	31	6,843	69,638	0	2,467
Benzie	3	0	2	1	0	1	0	0	2	0	11,596	0	5,798
Berrien	5	0	5	4	0	1	0	0	5	0	4,045	0	809
Branch	1	0	0	0	0	0	0	0	0	0	0	0	0
Calhoun	78	53	18	13	13	45	0	1	72	168,154	56,209	3,315	3,162
Cass	50	13	25	16	2	20	0	1	39	18,924	19,885	1,509	1,034
Charlevoix	1	0	0	0	0	0	0	0	0	0	0	0	0
Cheboygan	4	4	3	2	0	5	0	0	7	12,221	6,821	0	2,720
Clare	14	5	11	8	2	6	0	0	16	37,332	51,804	0	5,571
Clinton	1	2	0	0	0	2	0	0	2	6,716	0	0	3,358
Crawford	15	6	6	5	0	7	0	0	12	32,861	26,450	0	4,943
Eaton	14	10	5	1	1	13	0	0	15	35,545	14,542	0	3,339
Gd. Traverse	123	88	36	23	4	97	0	1	125	457,111	191,012	2,200	5,203
Genesee	1	2	0	0	0	2	0	0	2	6,425	0	0	3,213
Gladwin	20	8	17	20	0	5	0	0	25	45,131	64,630	0	4,390
Gratiot	1	0	0	0	0	0	0	0	0	0	0	0	0
Hillsdale	10	3	2	3	0	2	0	0	5	11,313	8,238	0	3,910
Ingham	16	13	3	3	2	11	0	0	16	43,729	12,535	0	3,517
Isabella	67	7	39	36	1	9	0	2	48	33,916	162,065	6,834	4,225
Jackson	7	3	1	0	1	3	0	0	4	10,569	4,466	0	3,759
Kalamazoo	1	2	0	0	0	2	0	0	2	4,358	0	0	2,179
Kalkaska	60	35	22	14	5	38	5	0	62	209,186	125,472	35,804	5,975
Kent	3	1	0	0	0	1	0	0	1	3,125	0	0	3,125
Lapeer	7	0	8	8	0	0	0	3	11	0	25,463	9,460	3,175
Lenawee	0	2	0	1	0	1	0	0	2	8,021	0	0	4,011
Livingston	10	5	0	1	0	4	0	0	5	14,577	0	0	2,915
Macomb	17	7	3	3	0	7	0	0	10	23,297	8,115	0	3,141
Manistee	81	41	34	25	0	50	0	2	77	190,700	147,065	6,477	4,471
Mason	9	6	0	1	1	4	0	0	6	21,467	0	0	3,578
Mecosta	8	5	1	0	1	5	0	0	6	29,118	8,385	0	6,251
Midland	15	3	5	6	0	2	0	0	8	11,928	12,922	0	3,106
Missaukee	62	7	57	53	2	9	0	0	64	73,239	268,985	0	5,347
Monroe	2	2	0	1	0	1	0	0	2	5,694	0	0	2,847
Montcalm	10	0	10	6	0	4	1	1	12	0	33,459	5,181	3,220
Montmorency	2	4	0	0	0	4	0	0	4	22,663	0	0	5,666
Muskegon	4	1	1	1	0	1	0	0	2	3,850	1,672	0	2,761
Newaygo	6	6	3	3	0	6	0	0	9	15,510	7,840	0	2,594
Oakland	6	4	1	0	2	3	0	0	5	16,141	4,054	0	4,039
Oceana	10	11	2	3	1	9	0	1	14	29,908	3,360	1,662	2,495
Ogemaw	27	0	13	13	0	0	0	5	18	0	46,124	13,891	3,334
Osceola	19	6	0	0	1	5	1	0	7	44,430	0	1,212	6,520
Oscoda	9	5	2	3	1	3	0	0	7	28,021	8,655	0	5,239
Otsego	71	39	21	9	14	37	4	4	68	186,418	83,320	33,558	4,460
Ottawa	2	1	2	2	0	1	0	0	3	3,133	4,376	0	2,503
Presque Isle	29	15	11	3	0	23	0	0	26	54,372	30,596	0	3,268
Roscommon	27	2	32	31	0	3	0	0	34	10,165	141,234	0	4,453
Saginaw	11	5	2	2	0	5	0	0	7	16,882	5,145	0	3,147
St. Clair	9	6	2	0	2	6	2	0	10	16,301	5,686	9,442	3,143
St. Joseph	1	1	0	0	0	1	0	0	1	1,334	0	0	1,334
Sanilac	2	1	0	0	0	1	0	0	1	7,824	0	0	7,824
Shiawassee	2	1	0	0	0	1	0	0	1	1,860	0	0	1,860
Tuscola	13	5	6	4	0	7	0	0	11	17,831	22,173	0	3,637
Van Buren	8	3	8	6	0	5	0	0	11	4,726	8,890	0	1,238
Washtenaw	3	1	0	0	0	1	0	0	1	2,501	0	0	2,501
Wayne	1	0	0	0	0	0	0	0	0	0	0	0	0
Wexford	6	5	0	0	1	4	0	0	5	28,395	0	0	5,679
Total	1,052	468	464	370	57	505	13	21	966	2,088,433	1,758,535	130,545	

The Drilled Acres column indicates the total number of acres assigned to the field or pool according to individual well drilling units assigned to each producing well completed in the field or pool. Except as provided by special orders covering drilling units, rules promulgated under Act No. 61, P.A. of 1939, as amended, call for a minumum 40-acre unit consisting of a governmental quarter-quarter section of land. Special Order No. 1-73 calls for basic 80-acre drilling units for Salina--Niagaran or deeper tests in specified areas of the state. These 80-acre units are formed by two governmental quarter-quarter sections of land having a common boundary of approximately 1320 feet. In past years drilling units have been 10, 20 or 40 acres for oil wells. A field may have had a 10 or 20-acre drilling unit for one pool and a 40-acre unit for a deeper formation pool. During the development of a field or pool the drilling unit size may change. Subsequent wells are assigned acreage values in accordance with the new unit size. Gas well units, especially for Michigan Stray Sandstone reservoirs, have generally been 160-acre units. Other sizes currently in use for gas wells are 40, 80, 320 and 640-acre units, or a unit size based on seismic and reservoir data. Reef reservoirs, especially in the northern reef trend, have been assigned 80, 160, 640, or a unit based on seismic data. Changes in drilling units, off-pattern wells, etc., complicate the maintenance of accurate figures during the lifetime of a given field or pool.

Recovery Per Acre Drilled figures for oil pools are derived by dividing the cumulative production figure by the drilled acres figure.

Gas Fields, Gas-Condensate Fields. Some fields are listed as "shut-in" and show no production figures. In the case of Niagaran reef fields classified as gas-condensate reservoirs, virtually all those listed as shut-in at the end of the year were waiting pipeline construction or gas-handling facilities. Others, mainly small dry-gas reservoirs in shallower formations, are listed as shut-in because of slow field development, small reserves or lack of marketing facilities. Other fields, not considered to have commercial-size gas accumulations, produce small quantities of unmetered gas which is used for domestic purposes and in some cases, lease fuel.

GAS STORAGE RESERVOIRS

Most gas storage reservoirs were originally classified as gas fields or pools. Upon depletion or near depletion of native gas they were converted to storage reservoirs.

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.

NATURAL GAS LIQUIDS (CONDENSATE)

Natural gas liquids are those portions of reservoir gas which are liquified at the surface in lease separators, field facilities, or gas processing plants. These liquids include but are not limited to: ethane, propane, butanes, pentanes, natural gasoline and condensate. On Table 24 of this report, condensates from Michigan gas-condensate fields are shown under the oil production column.

WELL SAMPLE SETS

Well cuttings for over 9,000 wells are available for inspection at the Geological Survey Division, Michigan Department of Natural Resources, Lansing. Samples are contained in either glass vials or in envelopes and are arranged in open trays. In addition, several thousand shallow geological test samples are also available for inspection. The Division does not maintain a core collection. Other sample and core repositories, not connected with the Division, are located at:

[1] Subsurface Laboratory, Department of Geology, The University of Michigan, Ann Arbor, Michigan.
[2] Department of Geology, Wayne State University, Detroit, Michigan.
[3] Department of Geology, Western Michigan University, Kalamazoo, Michigan.
[4] Department of Geology, Michigan State University, East Lansing, Michigan.
[5] Department of Geology, Central Michigan University, Mt. Pleasant, Michigan.

PART 3
CUMULATIVE RECORDS
EXPLANATION

Part 3 contains cumulative statistics principally of oil and gas production, well completions, and oil field brine production and disposal from 1925 through the most recent year-end compilations.

OIL AND GAS PRODUCTION TABLES

Oil and gas production figures for individual years prior to 1960 can be found in issues of "Summary of Operations, Oil and Gas Fields" for 1962 and prior years, and in "Michigan's Oil and Gas Fields" 1963 to present. The tables show the year of the first recorded production from a particular formation, and the yearly and cumulative production totals from 1925 through the most recent year-end compilations. Cumulative oil and gas production by county is shown on a separate table. Refer to Part 1 for county production figures for the past year, and prior issues for previous years.

CUMULATIVE WELL COMPLETIONS

These tables show the cumulative number of yearly completions in a county. Well density figures include field development wells, exploratory wells, and service wells of all types.

DRILLING PERMITS, WELL COMPLETIONS, FIELDS DISCOVERED

These tables show the number of drilling permits issued by year from 1927 through the most recent year-end compilations. Initial classification of well completions by year, the number of new fields or pools discovered, and the number of producible oil or gas wells on a yearly basis are all shown on the same table.

BRINE PRODUCTION AND DISPOSAL

Oil field brine production records other than for individual fields were discontinued in 1968. These tables listed the reported amount of produced brine and the method of disposal from 1937 up to 1967. Most of field brine is still returned to subsurface formations. Small quantities are used for dust control or ice and snow removal on county roads in local areas.

SERVICE WELLS

Service wells as listed in this publication are those wells which were drilled to serve some purpose other than the initial production of oil or gas. Oil or gas wells are sometimes converted to salt water disposal, observation, or facility wells in gas storage or pressure maintenance projects. There are several types of service wells:

LPG Wells. These are wells drilled for underground storage of liquified petroleum gas. In Michigan, these storage reservoirs are in manmade cavities in salt beds. The cavities have been made by dissolving the salt with water and then pumping out the brine.

Gas Storage Wells. These are wells drilled in gas storage reservoirs. They are frequently referred to as facility wells, and are generally used to inject gas into or extract gas from the reservoir. Certain facility wells may sometime in the history of the field be used as salt water disposal wells or observation wells.

Observation Wells. Most observation wells are related to gas storage projects. They are used to observe underground movement of gas, brines and other fluids, or to observe pressures.

Brine Disposal Wells. These wells are used in the disposal of oil and gas field brines back into some suitable subsurface formation.

Injection and Pressure Maintenance Wells. These are wells used in secondary recovery, or pressure maintenance projects. They may be new wells drilled specifically for injection or pressure maintenance, or they may be converted oil or gas wells; their status can change from time to time.

Oil or gas wells are sometimes converted to salt water disposal, observation, facility wells in gas storage reservoirs, or water injection wells used in secondary recovery or pressure maintenance projects. The types of service wells listed under "Classification of Well Completions" do not include oil or gas wells converted to service wells.

CROSS-REFERENCE LIST by COUNTY

ALLEGAN
Allegan; Casco; Cheshire; Crooked Lake; Diamond Springs; Dorr; Dunningville; Hawkhead; Heath; Hilliards; Hopkins; Hopkins, South; Hopkins, West; Lee; Lee, South; Martin; Monterey; New Richmond; Otsego; Overisel; Pullman; Pullman, East; Pullman, East; Rabbit River; Salem; Trowbridge; Wayland; Wayland, North

ALPENA
Alpena

ANTRIM
Mancelona

ARENAC
Adams; Adams, North; Au Gres; Clayton; Deep River; Lincoln; Moffatt; Standish; Sterling

BARRY
Freeport; Hope; Johnstown; Thornapple

BAY
Beaver; Crump; Essexville; Gibson; Kawkawlin; Lucht; Mt. Forest; Pinconning; Williams

BENZIE
Colfax

BERRIEN
Niles; Pipestone

CALHOUN
Albion; Cal-lee; Clarence; Convis; Lee; Pennfield; Tekonsha

CASS
Adamsville; Calvin; Jefferson; Juno Lake; North Porter

CHEBOYGAN
Forest

CLARE
Clare City; Cranberry Lake; Cranberry Lake, East; Freeman; Freeman-Lincoln; Freeman-Redding; Garfield; Greenwood; Hamilton; Harrison; Hatton; Lake George; McKay; Redding; Skeels; Surrey; Winterfield

CLINTON
Dallas; Lebanon

CRAWFORD
Beaver Creek Unit; Frederic; Hickeys Creek; Maple Forest; South Branch

EATON
Eaton; Eaton Rapids; Hamlin; Olivet

GENESEE
Otisville; Otter Lake

GLADWIN
Bard; Beaverton; Beaverton, South; Beaverton, West; Bentley; Billings; Billings, South; Buckeye, North; Buckeye, South; Butman; Grout; Hay; Sage; Secord; Skeels

GRAND TRAVERSE
Blair; East Bay; Grant; Mayfield; Paradise; Paradise; Union; Whitewater

GRATIOT
Elba; Ithaca; Newark; North Star; Pine River; Sumner

HILLSDALE
Adams; Albion-Pulawski-Scipio Trend; Lime Lake; Reading

HURON
Dwight; Grant

INGHAM
Aurelius; Ingham; Leslie; Onondaga; Stockbridge; Vevay; White Oak

IONIA
Hubbardston

ISABELLA
Brinton; Broomfield; Chippewa; Clare City; Coldwater; Coldwater, South; Currie; Fremont; Gilmore; Isabella; Leaton; Lincoln; Rolland; Rosebush; Sherman; Union; Vernon; Wise

JACKSON
Concord; Hanover; Henrietta; Springport

KALAMZOO
Alamo; Comstock; Cooper

KALKASKA
Blue Lake; Boardman; Cold Springs; Excelsior; Kalkaska; Rapid River

KENT
Rockford; Tyrone; Walker; Wyoming Park

LAKE
Chase; Luther; Luther, North; Peacock; Sauble

LAPEER
Marathon; Rich

LENAWEE
Blissfield; Demings Lake; Franklin; Macon Creek; Medina; Newburg; North Morenci; Ridgeway; Woodstock

LIVINGSTON
Fowlerville; Green Oak; Hamburg; Iosco

MACOMB
Armada; Bruce; Chesterfield; Coon Creek; Lenox; Mt. Clemens; Richmond; Washington

MANISTEE
Bear Lake; Brown; Cleon; Filer; Manistee; Maple Grove; Marilla; Onekama; Pleasanton; Springdale

MASON
Eden; Fountain; Grant; Hamlin; Logan; Oxbow; Riverton; Riverton; Scottville; St. Mary's Lake; Victory; Wiley

MECOSTA
Bevens Lake; Big Rapids; Colfax; Fork, East; Fork; Fork, West; Green; Hardy Dam; Martiny; Mecosta; Mecosta Lake; Morton; Paris; Sheridan; Wheatland

MIDLAND
Edenville; Geneva; Jerome; Larkin; Mills; Mt. Haley; Mt. Pleasant; Porter; Sanford

MISSAUKEE
Cannon Creek; East Norwich; Enterprise; Falmouth; Forward; McBain; Pioneer; Prosper; Prosper, South; Reeder; Riverside; Vogel Center

MONROE
Deerfield; Summerfield

MONTCALM
Belly Achers; Bloomer; Bushnell; Cato; Crystal; Day; Douglass; Edmore; Edmore-Richland; Entrican; Home; Maple Valley; Pine; Reynolds; Richland; Stanton; Turk Lake; Winfield

MONTMORENCY
Atlanta; Montmorency

MUSKEGON
Blue Lake; Cedar Creek; Dalton; Egelston; Holton; Laketon; Montague; Muskegon; Ravenna; Trent; White River; Wolf Lake

NEWAGO
Ashland; Barton; Big Prairie; Bishop; Cole Lake; Croton; Ensley; Goodwell; Goodwell, East; Huber; Kimball Lake; Reeman; Sheridan; Thompson Corners; White Cloud; Woodville

OAKLAND
Addison; Avon; Leonard; Lyon; Northville; Pontiac

OCEANA
Benona; Claybanks; Crystal Valley; Crystal Valley, South; Elbridge; Ferry; Forest River; Gilbert Lake; Hart; Mears; Otto; Otto; Pentwater; Pentwater Lake; Rothbury; Shelby; Stony Lake; Weare

OGEMAW
Edwards; Logan; Rose City; West Branch

OSCEOLA
Ashton; Ashton, East; Burdell; Cat Creek; Cedar; Evart; Fork, North; Hartwich; Hersey; Leroy; Middle Branch; Mineral Springs; Pecks Lake; Reed City; Reed City, East; Rose Lake; Sears; Sylvan

OSCODA
Mio

OSTEGO
Bagley; Charlton; Chester; Dover; Hayes; Otsego; Otsego Lake

OTTAWA
Coopersville; Dennison; Fillmore; Marne; Polkton; Robinson; Wright; Zeeland

PRESQUE ISLE
Allis; Belknap; Bismarck; Case; North Allis; Pulawski

ROSCOMMON
Headquarters; Nellsville; St. Helen

SAGINAW
Birch Run; Birch-Bela; Chesaning; Fremont; Lakefield; New Lothrop; Richland; Saginaw; St. Charles; Taymouth

ST. CLAIR
Adair; Algonac; Alpine; Berlin; Big Hand; Boyd; China; China Belle; China, South; Columbus; Columbus, North; Cottrellville; Diamond Crystal Salt; East China; Kimball; Marine City; Marine City, South; Peters; Peters, East; Port Huron; St. Clair; Starrville; Wales; Yankee

TUSCOLA
Akron; Akron, East; Arbela; Elkland; Elmwood; Fostoria; Vassar

VAN BUREN
Bangor; Bloomingdale; Breedsville; Clear Lake; Coffee Lake; Geneva; Lacota; Lawton; Paw Paw

WASTENAW
Clinton; Freedom; Lyndon; Northville

WAYNE
New Boston; Northville; Romulus

WEXFORD
Cherry Grove; Henderson; Wexford

CROSS-REFERENCE FIELDS by PRODUCING FORMATION

A 2 CARBONATE - Silurian
Akron; Fillmore; Pentwater; Pullman, East

A 2 CARBONATE-NIAGARIAN - Silurian
Charlton

A 1 CARBONATE - Silurian
Akron; Alpena; Charlton; Chester; Dover; Fillmore; Lee; Olivet; Romulus; Stockbridge; Washington; Lee

A 1 CARBONATE-NIAGARIAN - Silurian
Bagley; Lee

ANTRIM - Devonian
Algonac; Charlton; Chester; Dover; Mayfield; Otsego; Otsego Lake

BEREA - Mississippian
Adams, North; Beaver; Birch Run; Blue Lake; Buckeye, South; Cedar Creek; Chase; Clayton; Coopersville; Deep River; Dorr; Edenville; Egelston; Ferry; Fostoria; Fremont; Hay; Huber; Kawkawlin; Larkin; Logan; Marathon; Marne; New Lothrop; Otisville; Otter Lake; Otto; Porter; Ravenna; Ravenna; Rich; Rothbury; Saginaw; Stony Lake; Walker; Williams; Wolf Lake; Wright; Zeeland

BEREA-TRAVERSE-DETROIT RIVER - Mississippian/Devonian
Walker

DETROIT RIVER - Devonian
Atlanta; Billings; Dorr; Dwight; Edenville; Essexville; Excelsior; Fostoria; Garfield; Grant; Kawkawlin; Lyndon; Otter Lake; Salem; Walker; Wise

DETROIT RIVER SOUR ZONE - Devonian
Adams; Akron; Au Gres; Buckeye, South; Cannon Creek; Clayton; Cranberry Lake; Grout; Headquarters; Marathon; Reed City; Rich; Skeels; Sterling; Vassar; Vernon; West Branch

DUNDEE - Devonian
Adams; Adams, North; Akron; Arbela; Ashton; Bard; Beaverton; Beaverton, South; Beaverton, West; Belly Achers; Bentley; Bevens Lake; Big Prairie; Big Rapids; Billings; Billings, South; Birch Run; Birch-Bela; Brinton; Broomfield; Buckeye, North; Buckeye, South; Burdell; Bushnell; Butman; Cat Creek; Cedar; Clayton; Coldwater; Coldwater, South; Colfax; Cranberry Lake; Cranberry Lake, East; Crump; Crystal; Crystal Valley; Currie; Day; Deep River; Douglass; East Norwich; Eden; Edenville; Edwards; Elkland; Elmwood; Entrican; Essexville; Evart; Falmouth; Fork; Fork, North; Freedom; Freeman; Freeman-Lincoln; Freeman-Redding; Fremont; Geneva; Gibson; Gibson; Gilmore; Goodwell, East; Greenwood; Grout; Hamilton; Harrison; Hatton; Headquarters; Home; Hubbardston; Isabella; Jerome; Kawkawlin; Lake George; Lakefield; Laketon; Leaton; Lincoln; Marathon; McBain; Mears; Mills; Mineral Springs; Moffatt; Mt. Forest; Mt. Haley; Mt. Pleasant; Nellsville; Northville; Otisville; Paris; Pecks Lake; Pentwater; Pinconning; Pine River; Port Huron; Porter; Prosper; Prosper, South; Reed City; Riverside; Robinson; Rolland; Rosebush; Sage; Sanford; Secord; Sherman; Skeels; Sterling; Sylvan; Vernon; Vogel Center; West Branch; Wheatland; White River; Winterfield; Wise

DUNDEE-REED CITY - Devonian
Colfax; Winfield

E UNIT - Silurian
Lee

GLACIAL DRIFT - "Pleistocene"
Grant

LOWER NIAGARAN - Silurian
Blue Lake; Chester

MARSHALL - Mississippian
Barton; Ensley

MICHIGAN STRAY - Mississippian
Ashton; Ashton, East; Bevens Lake; Big Prairie; Big Rapids; Broomfield; Cedar; Cherry Grove; Clare City; Colfax; Day; Douglass; Edmore-Richland; Elba; Enterprise; Evart; Falmouth; Fork, East; Fork, North; Fork, West; Forward; Fremont; Gilmore; Goodwell, East; Green; Hamilton; Harrison; Hartwich; Headquarters; Hersey; Isabella; Ithaca; Leaton; Maple Valley; Martiny; McKay; Mecosta; Mecosta Lake; Middle Branch; Mineral Springs; Morton; Newark; North Star; Paris; Pine; Prosper; Redding; Reeder; Richland; Rolland; Sears; Sheridan; Surrey; Sylvan; Turk Lake; Union; Vernon; Wheatland; Wise

NIAGARAN - Silurian
Addison; Allis; Alpine; Armada; Aurelius; Avon; Bagley; Bear Lake; Belknap; Benona; Berlin; Big Hand; Bismarck; Blair; Blue Lake; Boardman; Brown; Bruce; Cal-lee; Case; Charlton; Chester; Chesterfield; China; China Belle; Clarence; Claybanks; Cleon; Cold Springs; Colfax; Columbus; Columbus, North; Convis; Coon Creek; Cottrellville; Diamond Crystal Salt; Dover; East Bay; East China; Eaton; Eaton Rapids; Excelsior; Filer; Forest; Frederic; Grant; Green Oak; Hamburg; Hamlin; Hayes; Ingham; Iosco; Kalkaska; Kimball; Lee; Lee Twp.; Lenox; Leonard; Lyon; Mancelona; Manistee; Maple Forest; Maple Grove; Marilla; Mayfield; Montmorency; North Allis; Northville; Onekama; Onondaga; Otsego Lake; Paradise; Pennfield; Pleasanton; Pontiac; Port Huron; Rapid River; Richmond; Springdale; Starrville; Union; Vevay; Victory; Washington; Wexford; White Oak; Whitewater; Yankee

PRAIRIE DU CHIEN - Ordovician
Falmouth; Franklin; Lime Lake

REED CITY - Devonian
Burdell; Cato; Eden; Fountain; Goodwell, East; Hardy Dam; Kimball Lake; Leroy; Luther, North; Peacock; Reed City; Reynolds; Scottville

RICHFIELD - Devonian
Adams; Akron; Akron, East; Au Gres; Beaver Creek Unit; Bentley; Butman; Cedar; Clayton; Cranberry Lake; Cranberry Lake, East; East Norwich; Enterprise; Evart; Falmouth; Fork; Freeman-Lincoln; Grout; Hamilton; Headquarters; Henderson; Hickeys Creek; Logan; Marathon; Mio; Nellsville; Prosper; Prosper, South; Reed City; Rose City; Rosebush; Skeels; South Branch; St. Helen; Standish; Sterling; West Branch; Winterfield

SALINA - Silurian
China; Crystal Valley; Dorr; Hopkins, West; Kawkawlin; Manistee; Mt. Clemens; Salem; Wayland; Zeeland

SALINA A 1 CARBONATE - Silurian
Clarence; Hilliards

SALINA B UNIT - Silurian
Cooper

SALINA E UNIT - Silurian
Diamond Springs; Lee

SALINA-NIAGARANN - Silurian
Adair; Bear Lake; Blue Lake; Boyd; Brown; Charlton; China, South; Clarence; Cold Springs; Convis; Cottrellville; Dover; East Bay; Eaton Rapids; Fowlerville; Grant; Hamlin; Hayes; Ingham; Kalkaska; Lee; Leslie; Manistee; Maple Grove; Marine City; Marine City, South; Mayfield; Montague; Northville; Onondaga; Otsego Lake; Paradise; Pennfield; Peters; Peters, East; Pulawski; Springdale; St. Clair; Union; Wales; Washington; White Oak

SAGINAW - Pennsylvanian
Edenville

SLYVANIA - Silurian
Jefferson

TRAVERSE-DUNDEE - Devonian
Muskegon

TRAVERSE-DUNDEE-DETRIOT RIVER - Devonian
Muskegon

TRAVERSE - Devonian
Adams; Adamsville; Alamo; Albion; Allegan; Ashland; Ashton; Bangor; Barton; Beaverton, South; Benona; Bentley; Bevens Lake; Bishop; Bloomer; Bloomingdale; Breedsville; Broomfield; Buckeye, South; Butman; Calvin; Cannon Creek; Casco; Cedar Creek; Cherry Grove; Chesaning; Cheshire; Chester; Chippewa; Clear Lake; Clinton; Coffee Lake; Coldwater; Cole Lake; Comstock; Concord; Cranberry Lake; Cranberry Lake, East; Crooked Lake; Croton; Crystal; Crystal Valley; Crystal Valley, South; Dallas; Dalton; Day; Demings Lake; Dennison; Diamond Springs; Dorr; Douglass; Dunningville; East Norwich; Eden; Edmore; Elba; Elbridge; Ensley; Entrican; Excelsior; Falmouth; Ferry; Fillmore; Forest River; Freedom; Freeport; Fremont; Geneva; Gibson; Gilbert Lake; Goodwell; Greenwood; Hart; Hawkhead; Headquarters; Heath; Hilliards; Holton; Home; Hope; Hopkins; Hopkins, South; Hopkins, West; Huber; Jefferson; Johnstown; Juno Lake; Kimball Lake; Lacota; Laketon; Lawton; Lebanon; Lee; Lee, South; Lincoln; Lucht; Luther; Lyndon; Martin; Mears; Moffatt; Monterey; Mt. Forest; Nellsville; New Richmond; Niles; North Morenci; North Porter; Otisville; Otsego; Otto; Overisel; Oxbow; Paradise; Paris; Paw Paw; Peacock; Pentwater; Pentwater Lake; Pinconning; Pine; Pine River; Pioneer; Pipestone; Polkton; Prosper; Pullman; Pullman, East; Rabbit River; Rapid River; Ravenna; Reed City; Reed City, East; Reeman; Reynolds; Richland; Riverside; Riverton; Rockford; Rose Lake; Salem; Sanford; Sauble; Scottville; Shelby; Sheridan; Sherman; Skeels; St. Charles; St. Mary's Lake; Stanton; Sterling; Stony Lake; Sumner; Taymouth; Thompson Corners; Thornapple; Trent; Trowbridge; Tyrone; Vevay; Victory; Walker; Wayland; Wayland, North; Weare; West Branch; White Cloud; Wiley; Winterfield; Wise; Wolf Lake; Woodstock; Woodville; Wright; Wyoming Park; Zeeland

TRENTON - Ordovician

Deerfield; Freedom; Henrietta; New Boston; Newburg; Reading; Ridgeway; Tekonsha

TRENTON-BLACK RIVER - Ordovician

Albion-Pulawski-Scipio Trend; Blissfield; Green Oak; Hanover; Macon Creek; Medina; Northville; Olivet; Springport; Summerfield

WEIR - Mississippian
Logan

ILLUSTRATION 2

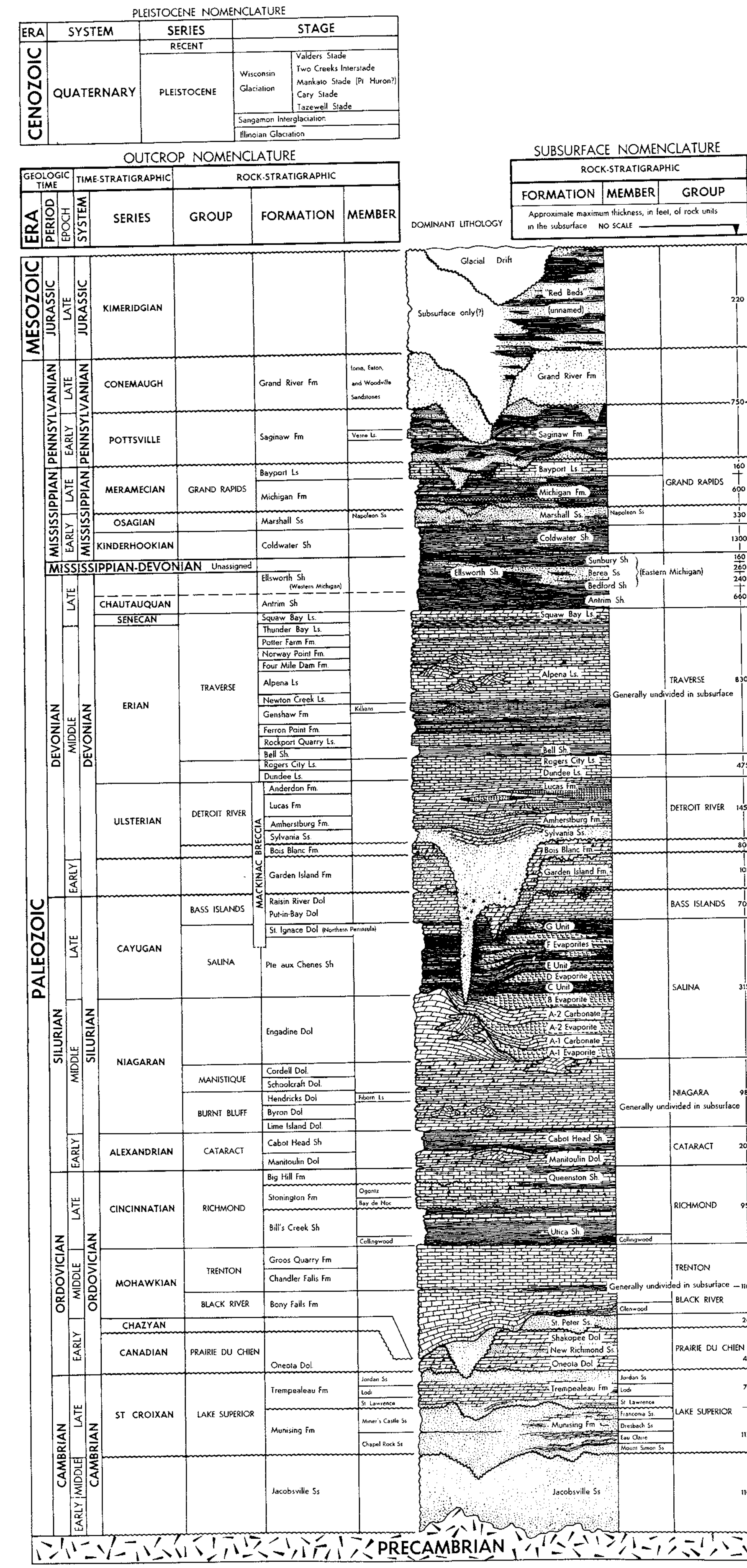
STRATIGRAPHIC SUCCESSION IN MICHIGAN

PALEOZOIC THROUGH RECENT

MICHIGAN DEPARTMENT OF CONSERVATION
Ralph A. MacMullan, Director
GEOLOGICAL SURVEY
Gerald E. Eddy, State Geologist

ACKNOWLEDGEMENT: Compiled with the counsel of colleagues in this department, the U. S. Geological Survey, Michigan's universities, other state Geological Surveys, and geologists within Michigan's oil and gas industry. Dr. Aureal T. Cross, Department of Geology, Michigan State University, identified rocks of Mesozoic age and suggested provisional age assignments.

GEOLOGIC NAMES COMMITTEE
Garland D. Ells, Chairman; Robert W. Kelley, Secretary;
Harry J. Hardenberg, L. David Johnson, Harry O. Sorensen

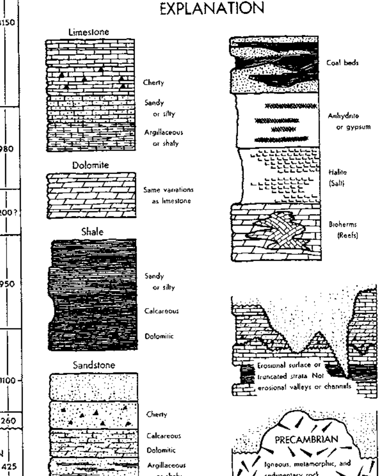


INFORMAL TERMS

Principal oil and gas pays, and informal terms used in petroleum exploration and applied to parts of formations or groups in the subsurface

STRATIGRAPHIC POSITION	INFORMAL TERMS	PAYS
Basal sandstones of Saginaw Fm	Parma sandstone	
In lower part of Michigan	triple gyp; brown lime; stray-stray ss; stray dol; stray ss	Gas (stray-stray ss); Gas & Oil (stray ss)
Marshall Ss		Gas & Oil
Coldwater Sh	Coldwater lime; Weir sand; Coldwater red-rock	Gas (Weir sand)
In upper part of Ellsworth Sh	"Berea" (Western Michigan)	Oil & Gas
Berea Ss	Berea sand (Eastern Michigan)	Oil & Gas
Squaw Bay Ls	Squaw Bay	Oil & Gas
Upper part of Traverse Group in Western Michigan	Traverse formation; Traverse lime; Stoney Lake zone	Oil & Gas (Traverse lime); Oil & Gas (Stoney Lake zone)
Rogers City Ls		Oil & Gas
Dundee Ls		Oil & Gas
Dundee Ls (?), Upper part of Lucas Fm (?)	Reed City zone	Oil & Gas
In Lucas Fm	massive salt; big salt; sour zone; massive anhydrite; big anhydrite; Richfield zone	Oil & Gas (sour zone); Oil & Gas (Richfield zone)
Amherstburg Fm	black lime	
Part of Salina Group E Unit	E zone (or Kintigh zone)	Oil
Divisions of A-2 Carbonate in Western Michigan	A-2 dolomite; A-2 lime	Gas
A-1 Carbonate	A-1 dolomite	Oil & Gas
Upper part of Niagaran Series	brown Niagaran; gray Niagaran; white Niagaran	Oil & Gas
Part of Niagaran Series	Clinton shale (Eastern Michigan)	
Trenton Group		Oil & Gas
Black River Group	Black River formation; Black River shale; Van Wert zone	Oil & Gas
Oneota Dol		Oil

EXPLANATION



GEOLOGIC NAMES COMPILATIONS: Harry O. Sorensen, Cambrian and Ordovician; Robert W. Kelley, Early and Middle Silurian; Garland D. Ells, Late Silurian through Detroit River Group of Devonian age; Harry J. Hardenberg, Dundee Limestone through Traverse Group of Devonian age; L. David Johnson, Antrim Shale through the Pennsylvanian System; F. Wells Terwilliger, glacial geology of the Cenozoic.

CHART 1
1964

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	ADAIR	SALINA-NIAGARAN	1961	ST. CLAIR, CASCO-4N,15E,12 & 13	3737	2,719	10 D	41.4	NIAGARAN	2,755	13	0	0	9	560	1,845	348,617	0	466,727	622	63
OF	ADAMS	DETROIT RIVER SZ	1956	ARENAC-BAY, ADAMS-19N,3E,21	3693	3,943	5 L	39.6	BOIS BLANC	0	0	0	0			SEE	ADAMS	RICHFIELD			
OF	ADAMS	DUNDEE	1937	ARENAC-BAY, ADAMS-19N,3E,26	3558	2,958	15 L	34.7	BOIS BLANC		31	0	0	17	310	9,092	9,092	0	0	29	
OF	ADAMS	RICHFIELD	1941	ARENAC-BAY, ADAMS-19N,3E,21	3558	4,278	5 L	35.5	BOIS BLANC		31	0	0	6*	1,080	3,818	1,641,872	0	0	1,509	5
OF	ADAMS	TRAVERSE	1937	ARENAC-BAY, ADAMS-19N,3E,26	3558	2,032	15 L	37.0	BOIS BLANC	5,079	24	0	0	7	240	2,729	SEE	ADAMS	RICHFIELD		263
AGF	ADAMS, NORTH	BEREA	1942	ARENAC, ADAMS-19N,3E,4	3558	1,605	1 S	--	DUNDEE	3,101	1		1948		40	0	0	0	1,306	0	0
OF	ADAMS, NORTH	DUNDEE	1940	ARENAC, ADAMS-19N,3E,22	3558	2,905	15 D	32.0	DETROIT RIVER	4,489	49	0	0	18	470	16,596	9,500,398	0	0	20,213	4,590
AGF	ADAMS, SEC. 08	TRAVERSE	1962	HILLSDALE, ADAMS-6S,2W,8	3884	1,420	4 L	--	PRAIRIE DU CHIEN	4,169	1		1965		20	0	0	0	19,297	0	0
OF	ADAMSVILLE	TRAVERSE	1976	CASS, ONTWA-8S,15W,13	3871	675	5 L	28	TRAVERSE	680	4	0	1	3	160	725	17,476	0	0	109	400
OF	ADDISON 12-05N-11E	NIAGARAN	1979	OAKLAND, ADDISON-5N,11E,12	3849	4,268	10 D	41.3	NIAGARAN	4,339	5	0	0	5	160	27,033	27,659	0	0	172	1
GF	ADDISON 14-05N-11E	NIAGARAN	1976	OAKLAND, ADDISON-5N,11E,14	3849	4,261	21 D	--	NIAGARAN	4,470	2	0	0	2	80	0	0	121,860	1,655,104	0	0
GF	AKRON	A-1 CARBONATE	1973	TUSCOLA, AKRON-14N,8E,32	3699	7,452	60 D	--	NIAGARAN		3	0	0	3	480		SEE	AKRON	A-2	CARBONATE	
OF	AKRON	A-2 CARBONATE	1973	TUSCOLA, AKRON-14N,8E,33	3699	6,868	107 D	46.9	NIAGARAN		2	0	0	2	320	4,596	14,994	0	103,517	46	1
OF	AKRON	DETROIT RIVER SZ	1938	TUSCOLA, AKRON-14N,8E,30	3699	3,422	11 D	35.9	NIAGARAN		44	5	0	33	1,360	67,959	2,338,896	0	0	1,712	19
OF	AKRON	DUNDEE	1936	TUSCOLA, WISNER-14N,7E,26	3699	2,678	17 L	37.3	NIAGARAN	7,941	52	2	0	28	1,160	9,309	SEE	AKRON	SOUR ZONE		93
OF	AKRON	RICHFIELD	1954	TUSCOLA, WISNER-14N,7E,23	3699	3,774	6 D	39.2	NIAGARAN						SEE	AKRON	SOUR ZONE				
OF	AKRON, EAST	RICHFIELD	1979	TUSCOLA, AKRON-14N,8E,25	3699	3,840	6 L	--	NIAGARAN	4,025	1	0	0	1	40	403	5,961	0	0	149	1
AOF	ALAMO	TRAVERSE	1949	KALAMAZOO, ALAMO-1S,12W,30	3691	1,310	2 L	--	TRAVERSE	1,420	16		1962		160	0	27,545	0	0	172	0
AGF	ALBION	TRAVERSE	1941	CALHOUN, ALBION-3S,4W,15	3899	1,610	7 L	--	PRAIRIE DU CHIEN	4,623	4		1948		120	0	0	0	6,238	0	0
OF	ALBION-PULASKI-SCIPIO TREND	TRENTON-BLK. RIVER	1957	HILLSDALE, SCIPIO-5S,3W,10	3886	3,576	50 D	41.4	PRAIRIE DU CHIEN	4,926	700	4	1	589	13,260	1,032,759	121,098,982	5,413,183	204,748,804	9,132	15,006
AGF	ALGONAC	ANTRIM	1947	ST. CLAIR, CLAY-3N,16E,29	3738	302	6 SH	--	CABOT HEAD	2,504	2		1951		80	0	0	0	7,987	0	0
OF	ALLEGAN	TRAVERSE	1937	ALLEGAN, ALLEGAN-2N,13W,35	3502	1,563	2 L	38.0	CINCINNATIAN	2,987	19	0	0	1	190	0	19,088	0	0	100	9
OF	ALLIS 17-33N-02E	NIAGARAN	1979	PRESQUE ISLE, ALLIS-33N,2E,17	3823	3,640	--	--	NIAGARAN	3,885	1	0	0	1	80	0	0	0	0	0	0
OF	ALLIS 19-33N-02E	NIAGARAN	1978	PRESQUE ISLE, ALLIS-33N,2E,19	3823	3,765	9 D	44.2	NIAGARAN	4,002	3	1	0	3	240	776	1,858	0	0	7	0
OF	ALLIS 29-33N-02E	NIAGARAN	1979	PRESQUE ISLE, ALLIS-33N,2E,29	3823	3,771	--	--	NIAGARAN	3,968	3	2	0	3	240	0	0	0	0	0	0
AGF	ALPENA 12-31N-08E	A-1CARBONATE	1973	ALPENA, ALPENA-31N,8E,12	3745	3,685	22 L	--	NIAGARAN	3,875	1		1978		160	0	0	0	0	0	0
GF	ALPINE	NIAGARAN	1963	ST. CLAIR, WALES-6N,15E,32	3774	3,151	25 D	--	CLINTON	3,470	3	0	0	2	120	0	0	55,822	2,184,276	0	0
OF	AMBER 06-18N-17W	NIAGARAN	1982	MASON, AMBER-18N,17W,06	3969	4,158	14 D?	47.2	NIAGARAN	4,520	1	1	0	1	80	0	0	0	0	0	0
OF	ARBELA	DUNDEE	1946	TUSCOLA, ARBELA-10N,7E,33	3608	2,557	7 L	35.3	DETROIT RIVER	3,375	39	0	0	6	450	4,655	369,711	0	0	821	6
GF	ARMADA 07-05N-13E	NIAGARAN	1981	MACOMB, ARMADA-5N,13E,7	3839	3,700	20 D	57.5	NIAGARAN	3,899	1	0	0	1	40	0	0	0	0	0	0
AOF	ASHLAND, SEC. 08	TRAVERSE	1959	NEWAYGO, ASHLAND-11N,13W,8	3581	2,238	1 L	--	TRAVERSE	2,239	1		1962		10	0	267	0	0	26	0
OF	ASHTON	DUNDEE	1945	OSCEOLA, LINCOLN-18N,10W,5	3568	3,645	5 L	40.0	DETROIT RIVER		4	0	0	4	200	1,248	515,346	0	0	2,561	0
GF	ASHTON	MICHIGAN STRAY	1946	OSCEOLA, LINCOLN-18N,10W,5	3568	1,215	2 S	--	DETROIT RIVER	3,779	3	0	0	1	400	0	0	0	209,794	0	0
OF	ASHTON	TRAVERSE	1945	OSCEOLA, LINCOLN-18N,10W,5	3568	2,950	4 L	42.0	DETROIT RIVER		4	0	0	3	80	3,051	SEE	ASHTON	DUNDEE		260
AGF	ASHTON, EAST	MICHIGAN STRAY	1962	OSCEOLA, LINCOLN-18N,10W,3	3568	1,297	5 S	--	REED CITY	3,750	1		1970		160	0	0	0	0	0	0
OF	ATLANTA	DETROIT RIVER	1945	MONTMORENCY, AVERY-30N,3E,10	3747	2,183	5 D	36.2	DETROIT RIVER	2,550	3	0	0	1	30	0	7,688	0	0	256	0
OF	AU GRES	DETROIT RIVER SZ	1956	ARENAC, AU GRES-19N,6E,2	3495	3,822	14 L	31.4	RICHFIELD	4,315	0					SEE	AU	GRES	RICHFIELD		
OF	AU GRES	RICHFIELD	1953	ARENAC, AU GRES-19N,6E,11	3495	4,152	11 L	36.5	RICHFIELD		4	0	0	3	160	2,844	72,607	0	0	453	0
OF	AURELIUS 24-02N-02W	NIAGARAN	1979	INGHAM, AURELIUS-2N,2W,24	3780	3,966	10 D	40	NIAGARAN	4,080	1	0	0	1	80	454	8,732	17,698	117,975	109	0
GF	AURELIUS 24-02N-02W P/A	NIAGARAN	1979	INGHAM, AURELIUS-2N,2W,24	3780	3,978	64 D	--	NIAGARAN	4,166	1	0	0	1	80	101	101	328,244	331,258	1	0
GF	AURELIUS 26-02N-02W	NIAGARAN	1974	INGHAM, AURELIUS-2N,2W,26	3780	3,954	100 D	--	NIAGARAN	4,445	2	0	0	2	160	80	14,978	108,329	3,125,539	93	0
OF	AURELIUS 35-02N-02W	NIAGARAN	1971	INGHAM, AURELIUS-2N,2W,35	3780	3,942	60 D	37.3	NIAGARAN	4,445	5	0	0	5	320	74,048	1,911,204	44,294	1,036,602	5,972	3,932
OF	AVERILL	BEREA	1982	MIDLAND, LINCOLN-15N,01E,23	3494	2,445	32 S	--	BEREA	2,550	1	1	0	1	40	0	0	0	0	0	9
GF	AVON 01-03N-11E	NIAGARAN	1977	OAKLAND, AVON-3N,11E,1	3874	3,195	101 D	--	NIAGARAN	3,460	4	0	0	3	200	567	1,512	1,065,816	2,032,946	7	1
OF	BAGLEY 21-30N-03W	NIAGARAN	1975	OTSEGO, BAGLEY-30N,3W,21	3792	5,962	28 D	38.6	NIAGARAN	6,219	2	1	0	2	120	4,281	22,601	0	3,415	188	0
OF	BAGLEY 21-30N-03W P/A	NIAGARAN	1981	OTSEGO, BAGLEY-30N,3W,21	3792	5,929	8 D	41.5	NIAGARAN	6,136	1	0	0	1	80	7,576	16,499	1,512	1,512	206	17
OF	BAGLEY 23-30N-03W	NIAGARAN	1973	OTSEGO, BAGLEY-30N,3W,23	3792	5,868	13 D	43.3	NIAGARAN	6,194	2	0	0	2	120	11,133	244,009	0	291,083	2,033	317
OF	BAGLEY 25-30N-03W	NIAGARAN	1972	OTSEGO, BAGLEY-30N,3W,25	3792	6,090	55 D	44.9	NIAGARAN	6,372	1	0	0	1	62	20,483	521,541	151,138	1,399,387	8,411	53
OF	BAGLEY 25-30N-03W P/A	A-1 C/NIAGARAN	1972	OTSEGO, BAGLEY-30N,3W,25	3792	6,070	30 D	41.8	NIAGARAN	6,451	3	0	0	3	240	89,330	1,166,938	341,145	2,762,294	4,862	0
OF	BAGLEY 31-30N-03W	NIAGARAN	1977	OTSEGO, BAGLEY-30N,3W,31	3792	6,121	7 D	46.3	NIAGARAN	6,385	2	0	0	2	320	115,220	652,570	166,960	617,126	2,039	9
OF	BAGLEY 35-30N-03W	NIAGARAN	1974	OTSEGO, BAGLEY-30N,3W,35	3792	6,110	50 D	43.0	NIAGARAN	6,365	4	0	0	4	320	286,635	1,986,308	456,135	2,187,992	6,207	85
OF	BANGOR	TRAVERSE	1939	VAN BUREN, BANGOR-2S,16W,29	3582	1,002	2 L	29.5	TRENTON	2,552	66	1	1	1	200	141	934,267	0	0	4,671	200
OF	BARD	DUNDEE	1949	GLADWIN, BEAVERTON-17N,2W,6	3444A	3,933	6 L	42.8	DUNDEE	4,017	17	0	0	2	170	1,520	595,572	0	0	3,503	30
AOF	BARTON	TRAVERSE	1947	NEWAYGO, BARTON-16N,11W,16	3581	3,097	1 L	30.0	DETROIT RIVER	3,745	3		1963		50	0	20,227	0	0	404	0
GF	BARTON, SEC. 33	MARSHALL	1980	NEWAYGO, BARTON-16N,11W,33	3581	1,206	169 S	--	TRAVERSE	3,100	1	0	0	1	40	0	0	0	0	0	0
OF	BARTON, SEC. 33	TRAVERSE	1981	NEWAYGO, BARTON-16N,11W,27	3581	2,954	1 L	--	TRAVERSE	3,000	1	0	0	1	40	0	0	0	0	0	0
G-C	BEAR LAKE 02-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,2	3805	4,646	23 D	74.0	NIAGARAN	4,874	1	0	0	1	80	3,962	47,036	333,866	1,697,569	587	5
OF	BEAR LAKE 02-23N-15W P/A	NIAGARAN	1979	MANISTEE, BEAR LAKE-23N,15W,2	3805	4,420	16 D	44	NIAGARAN	4,715	4	1	0	3	240	66,741	165,160	37,985	76,135	688	113
G-C	BEAR LAKE 08-23N-15W	NIAGARAN	1979	MANISTEE, BEAR LAKE-23N,15W,8	3805	4,354	6 D	56.4	NIAGARAN	4,575	1	0	0	1	80	889	1,835	126,040	273,176	22	26
G-C	BEAR LAKE 10-23N-15W	SALINA-NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,10	3805	4,457	120 D	64.0	NIAGARAN	4,758	2	0	1	1	160	4,007	69,353	162,714	2,454,548	433	4
OF	BEAR LAKE 11-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,11	3805	4,688	36 D	43.3	NIAGARAN	4,922	4	0	0	4	320	212,829	2,132,712	514,686	2,914,079	6,664	86
OF	BEAR LAKE 11-23N-15W P/A	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,11	3805	4,668	11 D	40.8	NIAGARAN	4,740	2	0	0	2	160	36,707	621,421	136,656	913,719	3,883	104
OF	BEAR LAKE 13-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,13	3805	4,591	16 D	--	NIAGARAN	5,030	6	0	0	6	480	460,176	3,177,819	475,561	2,605,428	6,620	0
G-C	BEAR LAKE 15-23N-15W	NIAGARAN	1976	MANISTEE, BEAR LAKE-23N,15W,15	3805	4,410	137 D	67.5	NIAGARAN	4,740	1	0	0	1	80	11,497	61,479	235,106	2,458,038	768	0
AOF	BEAR LAKE 16-23N-15W	NIAGARAN	1980	MANISTEE, BEAR LAKE-23N,15W,16	3805	4,316	408 D	--	NIAGARAN	4,790	1		1980		80	0	753	0	0	9	0
OF	BEAR LAKE 17-23N-15W	NIAGARAN	1977	MANISTEE, BEAR LAKE-23N,15W,17	3805	4,429	13 D	41.9	NIAGARAN	4,528	1	0	0	1	120	108,547	508,176	134,876	459,312	4,234	1
G-C	BEAR LAKE 18-23N-15W	NIAGARAN	1977	MANISTEE, BEAR LAKE-23N,15W,18	3805	4,361	44 D	52.6	NIAGARAN	4,547	3	0	0	2	240	83	12,033	3,671	365,306	50	0
OF	BEAR LAKE 19-23N-15W	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,19	3805	4,262	11 D	36.7	NIAGARAN	4,556	2	0	0	2	240	20,003	164,428	32,823	189,903	685	391
G-C	BEAR LAKE 19-23N-15W P/A	NIAGARAN	1979	MANISTEE, BEAR LAKE-23N,15W,19	3805	4,274	84 D	57.8	NIAGARAN	4,430	1	0	0	1	80	0	4,418	69,750	438,195	55	0
OF	BEAR LAKE 20-23N-15W	SALINA-NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,20	3805	4,338	32 D	38.4	NIAGARAN	4,722	2	0	0	2	160	27,665	310,553	1,506	32,057	1,940	185
OF	BEAR LAKE 22-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,22	3805	4,541	10 D	44.5	NIAGARAN	4,885	10	1	0	10	760	288,326	2,894,687	731,998	5,733,251	3,808	197
OF	BEAR LAKE 23-23N-15W	NIAGARAN	1973	MANISTEE, BEAR LAKE-23N,15W,23	3805	4,786	7 D	49.6	NIAGARAN	5,035	4	0	0	4	320	50,231	539,630	623,885	4,491,235	1,686	2
AGF	BEAR LAKE 24-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,24	3805	4,808	58 D	69.0	NIAGARAN	5,070	2	0	0	2	160	23,182	312,569	2,373,922	12,899,056	1,953	1
G-C	BEAR LAKE 25-23N-15W	NIAGARAN	1976	MANISTEE, BEAR LAKE-23N,15W,25	3805	4,714	118 D	63.3	NIAGARAN	5,061	1		1982		80	25	1,656	2,384	198,719	20	0
OF	BEAR LAKE 25-23N-15W P/A	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,25	3805	4,934	7 D	49.3	NIAGARAN	4,970	3	0	0	3	240	190,216	513,065	353,903	1,121,453	2,137	62

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	BEAR LAKE 26-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,26	3805	4,828	34 D	45.0	NIAGARAN	4,933	4	0	0	4	320	34,765	328,419	579,861	3,834,899	1,026	9
OF	BEAR LAKE 26-23N-15W P/A	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,26	3805	4,861	10 D	43.5	NIAGARAN	5,036	4	0	0	4	160	438,093	2,030,995	344,622	1,767,586	12,693	0
OF	BEAR LAKE 27-23N-15W	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,27	3805	4,673	64 D	44.2	NIAGARAN	4,870	4	1	0	4	320	102,625	580,902	371,175	2,205,049	1,815	2
OF	BEAR LAKE 27-23N-15W P/A	NIAGARAN	1976	MANISTEE, BEAR LAKE-23N,15W,27	3805	4,592	9 D	44	NIAGARAN	4,801	2	0	0	1	120	23,762	443,062	53,330	529,999	3,692	12
OF	BEAR LAKE 28-23N-15W	NIAGARAN	1976	MANISTEE, BEAR LAKE-23N,15W,28	3805	4,557	37 D	44.4	NIAGARAN	4,801	1	0	0	1	80	76,670	509,865	156,277	748,454	6,373	2
OF	BEAR LAKE 31-23N-15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,31	3805	4,168	59 D	40.0	NIAGARAN	4,580	1	0	0	1	80	7,262	258,816	3,809	165,497	3,235	50
OF	BEAR LAKE 32-23N,15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,32	3805	4,592	62 D	45.3	NIAGARAN	4,860	4	1	0	4	240	238,354	1,811,870	239,636	1,745,444	7,549	59
OF	BEAR LAKE 33-23N,15W	NIAGARAN	1974	MANISTEE, BEAR LAKE-23N,15W,33	3805	4,621	21 D	42.6	NIAGARAN	4,806	5	0	0	4	400	249,856	2,631,594	609,595	3,533,257	6,578	73
OF	BEAR LAKE 34-23N-15W	NIAGARAN	1975	MANISTEE, BEAR LAKE-23N,15W,34	3805	4,783	18 D	44.6	NIAGARAN	4,957	3	0	0	3	240	150,704	1,426,936	506,584	2,862,130	5,945	19
G-C	BEAR LAKE 35-23N-15W	NIAGARAN	1977	MANISTEE, BEAR LAKE-23N,15W,35	3805	4,839	10 D	--	NIAGARAN	4,985	1	0	0	1	160	1,296	20,396	859,321	3,131,150	127	0
OF	BEAVER CREEK UNIT	RICHFIELD	1947	CRAWFORD, BEAVER CREEK-25N,4W,17	3624	4,160	20 D	44.7	ST. PETER	10,142	122	1	0	68	4,840	529,692	14,591,224	169,506	20,553,301	3,014	2,243
OF	BEAVERTON	BEREA	1982	GLADWIN, BEAVERTON-17N,02W,13	3444A	2,577	30 S	--	DETROIT RIVER	5,135	1	1	0	1	40	0	0	0	0	0	0
OF	BEAVERTON	DUNDEE	1934	GLADWIN, BEAVERTON-17N,2W,11	3444A	3,929	12 L	41.3	RICHFIELD	5,225	26	0	0	1	330	1,536	900,160	0	0	2,727	80
OF	BEAVERTON, SOUTH	BEREA	1982	GLADWIN, TOBACCO-17N,01W,30	3444A	2,534	7 S	--	DETROIT RIVER	4,385	1	1	0	1	40	0	0	0	0	0	0
OF	BEAVERTON, SOUTH	DUNDEE	1936	GLADWIN, BEAVERTON-17N,2W,36	3444A	3,845	12 L	34.5	DETROIT RIVER		33	0	0	20	700	13,277	1,834,122	0	0	2,620	27
OF	BEAVERTON, SOUTH	TRAVERSE	1956	GLADWIN, BEAVERTON-17N,2W,36	3444A	3,231	6 L	41.0	DETROIT RIVER	4,977	0					SEE	BEAVERTON	DUNDEE			
OF	BEAVERTON, WEST	DUNDEE	1943	GLADWIN, BEAVERTON-17N,2W,19	3444A	3,876	2 L	41.2	DETROIT RIVER	5,094	7	0	0	5	260	4,761	245,313	0	0	943	50
GF	BELKNAP 07-34N-05E	NIAGARAN	1979	PRESQUE ISLE, BELKNAP-34N,5E,7	3866	2,784	234 L	--	NIAGARAN	3,400	1	0	0	1	160	0	0	SHUT-IN	0	0	0
GF	BELKNAP 10-34N-05E	NIAGARAN	1977	PRESQUE ISLE, BELKNAP-34N,5E,10	3866	2,960	20 D	--	NIAGARAN	3,087	1	0	0	1	80	0	0	SHUT-IN	0	0	0
OF	BELKNAP 17-34N-05E	NIAGARAN	1980	PRESQUE ISLE, BELKNAP-34N,5E,17	3886	3,003	85 D	41.9	NIAGARAN	3,387	1	0	0	1	160	1,898	4,614	0	0	28	0
OF	BELKNAP 21-34N-05E	NIAGARAN	1977	PRESQUE ISLE, BELKNAP-34N,5E,21	3866	2,978	24 D	39.8	NIAGARAN	3,340	1	0	0	1	160	0	3,544	SHUT-IN	0	22	0
OF	BELKNAP 34-34N-05E	NIAGARAN	1977	PRESQUE ISLE, BELKNAP-34N,5E,34	3866	3,153	10 D	51.9	NIAGARAN	3,410	1	0	0	1	80	0	418	SHUT-IN	0	5	0
OF	BELLY ACHERS	DUNDEE	1944	MONTCALM, HOME-12N,6W,14	3700	3,470	1 D	48.2	DUNDEE	3,615	7	0	0	3	220	83	355,785	0	0	1,617	300
OF	BENONA 22-14N-18W	NIAGARAN	1980	OCEANA, BENONA-14N,18W,15	3931	3,936	8 D	50.7	PRAIRIE DU CHIEN	5,065	1	0	0	1	80	0	0	0	0	0	0
G-C	BENONA 22-14N-18W P/A	NIAGARAN	1982	OCEANA, BENONA-14N,18W,22	3931	3,875	33 D	57	NIAGARAN	4,102	1	1	0	1	80	0	0	0	0	0	0
AOF	BENONA, SEC. 13	TRAVERSE	1949	OCEANA, BENONA-14N,18W,13	3931	1,640	3 L	--	DETROIT RIVER	2,276	2		1956		20	0	4,951	0	0	247	0
OF	BENTLEY	DUNDEE	1937	GLADWIN, BENTLEY-17N,2E,29	3518	3,510	13 L	42.1	SYLVANIA		87	0	0	36		25,216	SEE	BENTLEY	RICHFIELD		191
OF	BENTLEY	RICHFIELD	1952	GLADWIN, BENTLEY-17N,2E,29	3518	4,440	14 L	40.0	SYLVANIA		1	0	0	1	1,920	1,138	3,200,912	0	0	1,654	1
OF	BENTLEY	TRAVERSE	1952	GLADWIN, BENTLEY-17N,2E,29	3518	2,855	6 L	34.1	SYLVANIA	5,114						SEE	BENTLEY	DUNDEE	& RICHFIELD		0
OF	BERLIN	NIAGARAN	1960	ST. CLAIR, BERLIN-6N,13E,33	3739	3,800	25 D	42.8	CINCINNATIAN	4,310	4	0	1	1	140	240	378,370	0	0	2 702	75
GF	BEVENS LAKE	DUNDEE	1951	MECOSTA, GREEN-16N,10W,13	3653	3,536	11 L	--	REED CITY		3	0	0	1	320	0	0	0	1,076,763	0	2
AGF	BEVENS LAKE	MICHIGAN STRAY	1952	MECOSTA, GREEN-16N,10W,13	3653	1,244	6 S	--	REED CITY	3,731	3		1969			0	0	0	525,713	0	0
OF	BEVENS LAKE	TRAVERSE	1951	MECOSTA, GREEN-16N,10W,13	3653	2,997	1 L	44.2	REED CITY		4	0	0	1	40	896	103,101	0	0	2,577	60
OF	BIG HAND	NIAGARAN	1961	ST. CLAIR, COLUMBUS-5N,15E,24	3755	2,898	5 D	39.5	NIAGARAN	3,097	10	0	0	10	200	17,195	1,014,148	41,671	1,274,704	5,070	25
AGF	BIG PRAIRIE	MICHIGAN STRAY	1944	NEWAYGO, BIG PRAIRIE-13N,11W,16	3581	1,030	5 S	--	REED CITY	3,322	1		1961		160	0	0	0	155,922	0	0
AGF	BIG PRAIRIE, SEC 33	DUNDEE	1947	NEWAYGO, BIG PRAIRIE-13N,11W,33	3581	2,896	2 L	--	DUNDEE	2,900	1		1952		40	0	0	0	61,986	0	0
AGF	BIG RAPIDS	DUNDEE	1965	MECOSTA, BIG RAPIDS-15N,10W,10	3453	3,420	6 L	--	REED CITY		1		1964		160	0	0	0	44,498	0	0
AGF	BIG RAPIDS	MICHIGAN STRAY	1943	MECOSTA, BIG RAPIDS-15N,10W,13	3453	1,145	7 S	--	REED CITY	3,595	9		1969		1,440	0	0	0	2,393,033	0	0
OF	BILLINGS	BEREA	1982	GLADWIN, BILLINGS-17N,01E,02	3630	2,142	4 S	--	BEREA	2,207	1	1	0	1	40	284	284	0	0	7	1
OF	BILLINGS	DETROIT RIVER	1950	GLADWIN, BILLINGS-17N,1E,2	3631	4,070	7 D	43.5	RICHFIELD		10	0	0	8	200	5,688	898,067	0	0	4,460	1
OF	BILLINGS	DUNDEE	1949	GLADWIN, BILLINGS-17N,1E,2	3631	3,549	6 L	39.7	RICHFIELD	4,995	20	0	0	16	400	5,981	SEE	BILLINGS	DETROIT	RIVER	2
OF	BILLINGS, SOUTH	DUNDEE	1957	GLADWIN, BILLINGS-17N,1E,12	3631	3,540	5 ?	39.5	DETROIT RIVER	4,152	8	0	0	8	70	5,103	236,344	0	0	3,376	3
OF	BIRCH - BELA	DUNDEE	1951	SAGINAW, ARBELA-10N,6E,25	3468	2,504	7 L	36.0	DETROIT RIVER	3,263	31	0	0	31	350	9,152	431,248	0	0	1,232	1
AOF	BIRCH RUN	BEREA	1934	SAGINAW, BIRCH RUN-10N,6E,20	3468	1,530	5 S	43.3	DUNDEE	2,646	26		1951		250	0	215,876	0	0	863	0
OF	BIRCH RUN	DUNDEE	1954	SAGINAW, TAYMOUTH-10N,5E,20	3722	2,536	10 L	36.2	DUNDEE	2,716	34	0	0	32	480	7,155	628,465	0	0	1,309	1
OF	BIRCH RUN, SEC. 26	DUNDEE	1979	SAGINAW, BIRCH RUN-10N,6E,26	3468	2,486	33 L	36	DUNDEE	2,543	8	2	0	8	320	8,947	24,174	0	0	75	1
AOF	BISHOP	TRAVERSE	1950	NEWAYGO, GARFIELD-12N,13W,19	3581	2,226	3 L	--	TRAVERSE	2,238	7		1952		110	0	33,327	0	0	302	0
OF	BISMARCK 12-34N-04E	NIAGARAN	1977	PRESQUE ISLE, BISMARCK-34N,4E,12	3859	3,017	23 D	38.9	NIAGARAN	3,237	1	0	0	1	80	0	121	SHUT-IN	0	1	0
OF	BISMARCK 14-34N-04E	NIAGARAN	1981	PRESQUE ISLE, BISMARCK-34N,04E,14	3859	3,109	4 D	36	NIAGARAN	3,284	1	0	0	1	80	239	239	0	0	2	0
G-C	BISMARCK 26-34N-04E	NIAGARAN	1976	PRESQUE ISLE, BISMARCK-34N,4E,26	3859	3,302	65 D	--	NIAGARAN	3,589	2	0	0	2	160	0	0	SHUT-IN	0	0	0
GF	BISMARCK 34-34N-04E	NIAGARAN	1981	PRESQUE ISLE, BISMARCK-34N,4E,34	3859	3,303	43 D	--	NIAGARAN	3,675	1	0	0	1	80	0	0	0	0	0	0
OF	BLAIR 11-26N-11W	NIAGARAN	1982	GD. TRAVERSE, BLAIR-26N,11W,11	3796	5,359	22 D	46.9	NIAGARAN	5,388	1	1	0	1	160	1,261	1,261	0	0	8	0
OF	BLAIR 13-26N-11W	NIAGARAN	1982	GD. TRAVERSE, BLAIR-26N,11W,13	3796	5,704	16 D	43.2	NIAGARAN	5,860	1	1	0	1	160	2,024	2,024	0	0	13	100
OF	BLAIR 14-26N-11W	NIAGARAN	1978	GD. TRAVERSE, BLAIR-26N,11W,14	3796	5,767	39 D	47.0	NIAGARAN	5,930	4	0	0	4	320	21,943	92,512	629,306	2,181,726	289	73
AOF	BLAIR 16-26N-11W	NIAGARAN	1980	GD. TRAVERSE, BLAIR-26N,11W,16	3796	5,443	33 D	44.5	NIAGARAN	5,810	1		1981		80	0	1,533	0	0	19	0
OF	BLAIR 20-26N-11W	NIAGARAN	1982	GD. TRAVERSE, BLAIR-26N,11W,20	3796	5,632	25 D	44	NIAGARAN	5,722	2	2	0	2	80	7,693	7,693	1,593	1,593	96	38
AG-C	BLAIR 21-26N-11W	NIAGARAN	1976	GD. TRAVERSE, BLAIR-26N,11W,21	3796	5,567	42 D	67.3	NIAGARAN	5,795	2		1981		160	0	18,391	0	607,143	114	0
OF	BLAIR 21-26N-11W P/A	NIAGARAN	1981	GD. TRAVERSE, BLAIR-26N,11W,21	3796	5,441	5 D	--	NIAGARAN	5,636	1	0	0	1	80	0	0	0	0	0	0
AG-C	BLAIR 22-26N-11W	NIAGARAN	1977	GD. TRAVERSE, BLAIR-26N,11W,22	3796	5,592	100 D	68.3	NIAGARAN	5,862	1		1982		80	265	30,001	10,050	992,058	375	0
OF	BLAIR 25-26N-11W	NIAGARAN	1974	GD. TRAVERSE, BLAIR-26N,11W,25	3796	5,863	41 D	47.2	NIAGARAN	6,120	2	0	0	2	160	40,378	350,591	249,146	1,790,165	2,191	9
G-C	BLAIR 25-26N-11W P/A	NIAGARAN	1974	GD. TRAVERSE, BLAIR-26N,11W,25	3796	6,225	6 D	46.2	NIAGARAN	6,423	2	0	0	2	160	403	109,290	70,937	3,180,955	683	0
G-C	BLAIR 26-26N-11W	NIAGARAN	1975	GD. TRAVERSE, BLAIR-26N,11W,26	3796	5,804	76 D	53.0	NIAGARAN	6,035	1	0	0	1	80	1,254	12,168	119,773	941,476	152	5
G-C	BLAIR 26-26N-11W P/A	NIAGARAN	1977	GD. TRAVERSE, BLAIR-26N,11W,26	3796	5,930	10 D	55.0	NIAGARAN	6,110	1	0	0	1	80	46	17,740	33,026	1,573,599	221	0
G-C	BLAIR 27-26N-11W	NIAGARAN	1975	GD. TRAVERSE, BLAIR-26N,11W,27	3796	5,563	125 D	61.5	NIAGARAN	5,820	1	0	0	1	80	1,254	34,514	119,773	1,243,871	431	33
OF	BLAIR 28-26N-11W	NIAGARAN	1979	GD. TRAVERSE, BLAIR-26N,11W,28	3796	5,550	56 D	43.4	NIAGARAN	5,845	1	0	0	1	80	36,185	104,816	19,552	52,335	1,310	332
OF	BLAIR 29-26N-11W	NIAGARAN	1981	GD. TRAVERSE, BLAIR-26N,11W,29	3796	5,587	7 D	41.4	NIAGARAN	5,830	1	0	0	1	80	8,921	8,921	0	0	111	19
OF	BLAIR 33-26N-11W	NIAGARAN	1973	GD. TRAVERSE, BLAIR-26N,11W,33	3796	5,844	11 D	45.8	NIAGARAN	6,123	3	0	0	3	240	43,303	986,293	277,074	2,783,381	4,109	88
G-C	BLAIR 34-26N-11W	NIAGARAN	1970	GD. TRAVERSE, BLAIR-26N,11W,34	3796	5,826	124 D	60.0	NIAGARAN	6,316	1	0	0	1	160	3,028	67,589	108,744	2,748,919	422	0
GF	BLAIR 34-26N-11W P/A	NIAGARAN	1972	GD. TRAVERSE, BLAIR-26N,11W,34	3796	5,960	13 D	49.6	NIAGARAN	6,140	2	0	0	2	240	2,856	30,506	279,474	1,221,853	127	0
OF	BLAIR 35-26N-11W	NIAGARAN	1975	GD. TRAVERSE, BLAIR-26N,11W,35	3796	6,126	58 D	45.0	NIAGARAN	6,320	3	0	0	2	280	8,117	104,751	271,442	1,711,174	374	7
G-C	BLAIR 36-26N-11W	NIAGARAN	1972	GD. TRAVERSE, BLAIR-26N,11W,36	3796	6,205	14 D	52.0	NIAGARAN	6,405	3	0	0	2	480	259	298,933	235,967	14,685,993	622	0
GF	BLISSFIELD	TRENTON-BLK. RIVER	1963	LENAWEE, BLISSFIELD-7S,5E,5	3698	2,686	9 D	--	GLENWOOD	3,251	1	0	0	1	40	0	718	0	53,963	17	0
OF	BLOOMER	TRAVERSE	1944	MONTCALM, BLOOMER-9N,5W,32	3598	2,640	3 L	42.3	DETROIT RIVER	3,271	29	0	0	3	530	1,406	1,975,353	0	0	3,727	425
AOF	BLOOMER, SEC. 18	TRAVERSE	1936	MONTCALM, BLOOMER-9N,5W,18	3459	2,717	6 L	--	DUNDEE	3,138	1		1936		10	0	814	0	0	81	0
OF	BLOOMINGDALE	TRAVERSE	1938	VAN BUREN, BLOOMINGDALE-1S,14W,9	3534	1,244	4 L	42.0	ST. PETER SS.	3,422	437	1	0	18	4,130	5,950	10,053,178	0	0	2,434	521

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	BLUE LAKE 01-28N-05W	NIAGARAN	1971	KALKASKA, BLUE LAKE-28N,5W,1	3783	6,481	43 D	43.0	NIAGARAN	6,980	3	0	0	2	160	57,905	1,109,378	5,762	408,447	6,933	1,100
OF	BLUE LAKE 05-28N-05W	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,5	3783	6,630	8 D	--	NIAGARAN	6,793	1	0	0	1	80	33,252	130,221	94,695	251,142	1,627	36
OF	BLUE LAKE 05-28N-05W P/A	NIAGARAN	1981	KALKASKA, BLUE LAKE-28N,5W,5	3783	6,538	18 D	--	NIAGARAN	6,877	2	1	0	2	160	49,341	49,341	121,850	121,850	308	18
OF	BLUE LAKE 06-28N-05W	NIAGARAN	1982	KALKASKA, BLUE LAKE-28N,05W,06	3783	6,774	12 D	--	NIAGARAN	7,002	1	1	0	1	80	15,613	15,613	30,390	30,390	195	147
AG-C	BLUE LAKE 07-28N-05W	NIAGARAN	1976	KALKASKA, BLUE LAKE-28N,5W,7	3783	6,615	16 D	51.6	NIAGARAN	6,704	1		1978		80	0	3,830	0	27,739	0	0
OF	BLUE LAKE 08-28N-05W	NIAGARAN	1982	KALKASKA, BLUE LAKE-28N,05W,08	3783	6,786	300 D	47	NIAGARAN	7,200	2	2	0	2	160	40,716	40,716	26,357	26,357	255	163
OF	BLUE LAKE 12-28N-05W	NIAGARAN	1971	KALKASKA, BLUE LAKE-28N,5W,12	3783	6,852	20 D	45.0	NIAGARAN	7,079	1	0	0	1	80	6,138	53,584	29,947	336,845	669	0
OF	BLUE LAKE 12-28N-05W P/A	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,12	3783	6,912	80 D	44.4	NIAGARAN	7,175	1	0	0	1	80	267	9,389	4,923	38,501	117	0
G-C	BLUE LAKE 13-28N-05W	SALINA-NIAGARAN	1973	KALKASKA, BLUE LAKE-28N,5W,13	3783	6,600	206 D	43	NIAGARAN	7,325	1	0	0	1	80	2,358	70,978	49,944	2,239,791	887	0
OF	BLUE LAKE 13-28N-05W P/A	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,13	3783	7,014	6 L	46	NIAGARAN	7,193	1	0	0	1	80	3,746	28,808	8,645	53,237	360	0
OF	BLUE LAKE 16-28N-05W	NIAGARAN	1977	KALKASKA, BLUE LAKE-28N,5W,16	3783	7,097	23 D	47.0	NIAGARAN	7,254	3	0	0	3	240	256,276	705,766	195,629	668,247	2,940	1
OF	BLUE LAKE 16-28N-05W P/A	NIAGARAN	1978	KALKASKA, BLUE LAKE-28N,5W,16	3783	7,062	8 D	50.5	NIAGARAN	7,213	2	0	0	2	160	32,065	145,868	329,379	1,031,499	911	1
OF	BLUE LAKE 17-28N-05W	NIAGARAN	1976	KALKASKA, BLUE LAKE-28N,5W,17	3783	7,015	62 D	46.7	NIAGARAN	7,255	3	0	0	3	200	139,619	1,401,781	378,439	1,871,798	7,008	44
G-C	BLUE LAKE 17-28N-05W P/A	NIAGARAN	1977	KALKASKA, BLUE LAKE-28N,5W,17	3783	6,850	30 D	64	NIAGARAN	7,070	1	0	0	1	160	10,518	133,586	1,288,610	6,581,610	834	0
OF	BLUE LAKE 18-28N-05W	NIAGARAN	1975	KALKASKA, BLUE LAKE-28N,5W,18	3783	6,960	24 D	44.8	NIAGARAN	7,186	3	0	0	3	240	322,502	1,763,879	312,855	1,763,952	7,349	0
G-C	BLUE LAKE 18-28N-05W P/A	NIAGARAN	1977	KALKASKA, BLUE LAKE-28N,5W,18	3783	6,885	20 D	60	NIAGARAN	7,089	4	0	0	4	320	36,648	561,308	4,928,838	24,877,432	1,754	36
OF	BLUE LAKE 19-28N-05W	NIAGARAN	1974	KALKASKA, BLUE LAKE-28N,5W,19	3783	6,920	20 D	45.3	NIAGARAN	7,115	2	0	0	2	160	186,269	1,384,827	295,039	1,540,061	8,655	0
OF	BLUE LAKE 19-28N-05W P/A	NIAGARAN	1976	KALKASKA, BLUE LAKE-28N,5W,19	3783	6,960	14 D	45.4	NIAGARAN	7,265	2	0	0	1	80	4,825	98,376	12,522	363,009	1,229	20
OF	BLUE LAKE 19-28N-05W P/B	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,19	3783	6,970	120 L	43.4	NIAGARAN	7,280	1	0	0	1	80	9,162	42,138	1,244	43,780	526	30
OF	BLUE LAKE 20-28N-05W	NIAGARAN	1978	KALKASKA, BLUE LAKE-28N,5W,20	3783	6,956	14 D	45.4	NIAGARAN	7,207	1	0	0	1	80	40,039	333,173	103,968	553,463	4,164	72
G-C	BLUE LAKE 21-28N-05W	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,21	3783	7,200	12 L	--	NIAGARAN	7,295	2	0	0	2	160	14,215	74,940	1,061,537	2,747,212	468	0
G-C	BLUE LAKE 23-28N-05W	SALINA-NIAGARAN	1977	KALKASKA, BLUE LAKE-28N,5W,23	3783	6,785	397 D	--	NIAGARAN	7,440	2	0	0	2	160	3,152	130,057	635,588	4,677,802	812	0
OF	BLUE LAKE 23-28N-05W P/A	NIAGARAN	1982	KALKASKA, BLUE LAKE-28N,05W,23	3783	7,257	31 D	48.6	NIAGARAN	7,464	1	1	0	1	80	14,624	14,624	31,259	31,259	183	0
G-C	BLUE LAKE 27-28N-05W	NIAGARAN	1972	KALKASKA, BLUE LAKE-28N,5W,27	3783	7,131	37 D	64.4	NIAGARAN	7,350	1	0	0	1	160	392	77,066	135,862	5,278,792	481	0
G-C	BLUE LAKE 28-28N-05W	NIAGARAN	1970	KALKASKA, BLUE LAKE-28N,5W,28	3783	7,105	30 D	60	NIAGARAN	7,450	1	0	0	1	160	0	59,976	40,323	3,674,126	374	0
G-C	BLUE LAKE 28-28N-05W P/A	NIAGARAN	1978	KALKASKA, BLUE LAKE-28N,5W,28	3783	7,303	18 D	66.1	NIAGARAN	7,505	1	0	0	1	160	556	29,015	300,994	2,632,641	181	0
G-C	BLUE LAKE 29-28N-05W	NIAGARAN	1974	KALKASKA, BLUE LAKE-28N,5W,29	3783	6,950	56 D	59.1	NIAGARAN	7,320	2	0	0	2	355	804	101,718	112,573	1,957,595	286	0
G-C	BLUE LAKE 32-28N-05W	NIAGARAN	1977	KALKASKA, BLUE LAKE-28N,5W,32	3783	7,120	40 D	--	NIAGARAN	7,573	1	0	0	1	80	0	0	SHUT-IN	0	0	0
G-C	BLUE LAKE 33-28N-05W	LOWER NIAGARAN	1971	KALKASKA, BLUE LAKE-28N,5W,33	3783	7,350	25 D	--	NIAGARAN	7,610	1	0	0	1	80	703	41,106	58,508	1,183,724	513	0
G-C	BLUE LAKE 34-28N-05W	NIAGARAN	1979	KALKASKA, BLUE LAKE-28N,5W,34	3783	7,036	348 L	66	NIAGARAN	7,558	1	0	0	1	80	0	238	0	0	2	0
OF	BLUE LAKE, SEC. 05	"BEREA"	1981	MUSKEGON, BLUE LAKE-12N,16W,6	3557	1,430	5 SH	--	TRAVERSE	1,828	1	0	0	1	40	0	0	0	0	0	5
AG-C	BOARDMAN 03-26N-08W	NIAGARAN	1973	KALKASKA, BOARDMAN-26N,8W,3	3788	6,570	60 D	53.4	NIAGARAN	6,980	3		1976		80	0	178	0	0	2	0
G-C	BOARDMAN 04-26N-08W	NAGARAN	1971	KALKASKA, BOARDMAN-26N,8W,4	3788	6,778	38 D	65.7	NIAGARAN	6,925	1	0	0	1	160	950	20,206	73,218	872,659	126	0
G-C	BOARDMAN 04-26N-08W P/A	NIAGARAN	1972	KALKASKA, BOARDMAN-26N,8W,4	3788	6,450	290 D	--	NIAGARAN	6,893	1	0	0	1	160	0	90,010	50,005	2,069,931	562	0
G-C	BOARDMAN 04-26N-08W P/B	NIAGARAN	1981	KALKASKA, BOARDMAN-26N,08W,4	3788	6,779	62 D	65.5	NIAGARAN	6,990	1	0	0	1	80	0	75	0	0	0	0
G-C	BOARDMAN 05-26N-08W	NIAGARAN	1971	KALKASKA, BOARDMAN-26N,8W,5	3788	6,616	110 D	--	NIAGARAN	6,990	1	0	0	1	80	0	43,010	114,649	2,846,834	537	0
G-C	BOARDMAN 05-26N-08W P/A	NIAGARAN	1980	KALKASKA, BOARDMAN-26N,8W,5(BHL)	3788	6,755	134 D	65.3	NIAGARAN	6,841	1	0	0	1	80	1,017	25,215	186,738	1,023,103	315	0
OF	BOARDMAN 06-26N-08W	NIAGARAN	1973	KALKASKA, BOARDMAN-26N,8W,6	3788	6,477	180 D	46.1	NIAGARAN	6,975	2	1	0	2	80	6,324	87,209	0	14,067	1,090	0
AG-C	BOARDMAN 06-26N-08W P/A	NIAGARAN	1978	KALKASKA, BOARDMAN-26N,8W,5	3788	6,710	7 D	63.5	NIAGARAN	6,842	1		1982		80	140	2,767	11,253	87,916	34	0
OF	BOYD	SALINA-NIAGARAN	1958	ST. CLAIR, CASCO-4N,15E,31	3737	2,457	292 D	37.7	PRECAMBRIAN	4,634	49	0	1	35	1,840	17,883	2,167,379	169,999	19,506,126	1,177	74
AOF	BREEDSVILLE	TRAVERSE	1943	VAN BUREN, GENEVA-1S,16W,24	3586	1,061	2 L	33.0	DETROIT RIVER	1,445	32		1961		300	0	285,584	0	0	951	0
OF	BRINTON	DUNDEE	1967	ISABELLA, COLDWATER-16N,6W,5	3599	4,082	3 D	--	DUNDEE	4,085	1	0	0	1	40	1,015	24,323	SHUT-IN	0	525	120
OF	BROOKFIELD 02-01N-04W	NIAGARAN	1979	EATON, BROOKFIELD-1N,4W,2	3915	3,740	26 D	37.4	NIAGARAN	4,123	2	0	0	2	160	75,126	195,187	52,321	52,321	1,219	3
OF	BROOMFIELD	DUNDEE	1979	ISABELLA, BROOMFIELD-14N,6W,9	3314	3,752	3 D	--	DUNDEE	3,756	21	11	0	21	440	120,060	181,426	0	0	412	843
GF	BROOMFIELD	MICHIGAN STRAY	1930	ISABELLA, BROOMFIELD-14N,6W,10	3314	1,355	5 S	--	SYLVANIA	4,994	91	0	0	8	8,240	0	0	0	13,330,450	0	0
OF	BROOMFIELD	TRAVERSE	1979	ISABELLA, BROOMFIELD-14N,6W,14	3314	3,173	12 L	--	TRAVERSE	3,190	2	1	0	2	80	99	482	0	0	6	0
G-C	BROWN 04-22N-15W	NIAGARAN	1974	MANISTEE, BROWN-22N,15W,4	3806	4,397	331 D	69.5	NIAGARAN	4,907	2	0	0	2	320	16,631	322,113	2,104,936	17,916,810	1,006	0
G-C	BROWN 04-22N-15W P/A	NIAGARAN	1975	MANISTEE, BROWN-22N,15W,4	3806	4,419	306 D	64.2	NIAGARAN	4,926	1	0	0	1	120	8,084	66,506	485,192	2,910,913	554	25
OF	BROWN 05-22N-15W	NIAGARAN	1976	MANISTEE, BROWN-22N,15W,5	3806	4,649	12 D	45.3	NIAGARAN	4,762	2	0	0	2	160	40,710	398,563	231,497	1,226,803	2,491	847
G-C	BROWN 06-22N-15W	SALINA-NIAGARAN	1974	MANISTEE, BROWN-22N,15W,6	3806	4,207	415 D	57.3	NIAGARAN	4,809	1	0	0	1	120	10,267	63,099	925,936	5,051,413	525	19
G-C	BROWN 07-22N-15W	NIAGARAN	1974	MANISTEE, BROWN-22N,15W,7	3806	4,378	292 D	65.0	NIAGARAN	4,780	1	0	0	1	160	8	17,874	232,532	3,408,855	111	0
OF	BROWN 07-22N-15W P/A	NIAGARAN	1982	MANISTEE, BROWN-22N,15W,07	3806	4,613	17 D	47.5	NIAGARAN	4,785	1	1	0	1	80	73,169	73,169	60,296	60,296	915	3
G-C	BROWN 08-22N-15W	NIAGARAN	1974	MANISTEE, BROWN-22N,15W,8	3806	4,692	27 D	66.0	NIAGARAN	4,888	1	0	0	1	80	1,139	23,079	187,757	2,296,997	288	2
GF	BROWN 19-22N-15W	SALINA-NIAGARAN	1977	MANISTEE, BROWN-22N,15W,19	3806	4,456	8 D	--	NIAGARAN	4,575	1	0	0	1	80	691	1,535	209,944	409,506	19	1
GF	BRUCE	NIAGARAN	1974	MACOMB, BRUCE-5N,12E,30	3833	3,696	36 D	--	NIAGARAN	4,029	2	0	0	2	320	4,297	29,495	700,078	5,584,015	92	0
OF	BUCKEYE, NORTH	DUNDEE	1936	GLADWIN, BUCKEYE-18N,1W,11	3498	3,615	14 L	39.0	SYLVANIA	5,351	300	5	0	60	3,090	128,953	20,470,048	0	9,781	6,624	15,788
OF	BUCKEYE, SOUTH	BEREA	1979	GLADWIN, BUCKEYE-18N,1W,36	3498	2,196	12 SS	--	DETROIT RIVER	2,305	33	8	0	33	1,080	31,022	121,307	0	0	112	219
OF	BUCKEYE, SOUTH	DETROIT RIVER SZ	1964	GLADWIN, BUCKEYE-18N,1W,36	3498	4,481	14 D	46.0	DETROIT RIVER		1	0	0	1	40	4,236	128,363	0	0	3,209	0
OF	BUCKEYE, SOUTH	DUNDEE	1936	GLADWIN, BUCKEYE-18N,1W,25	3498	3,570	11 L	39.0	DETROIT RIVER		205	0	0	33	2,510	33,000	5,261,547	0	0	2,096	588
AOF	BUCKEYE, SOUTH	TRAVERSE	1956	GLADWIN, BUCKEYE-18N,1W,25	3498	2,891	3 D	42.0	DETROIT RIVER	4,802	7		1960			SEE	BUCKEYE,	SOUTH	DUNDEE		
OF	BURDELL	DUNDEE	1959	OSCEOLA, BURDELL-20N,10W,19	3561	3,678	4 L	--	REED CITY	3,804	6	0	0	1	120	613	159,694	0	0	1,330	45
AOF	BURDELL	REED CITY	1960	OSCEOLA, BURDELL-20N,10W,19	3561	3,802	2 D	--	REED CITY		1		1969		40	0	0	0	0	0	0
AOF	BUSHNELL	DUNDEE	1935	MONTCALM, BUSHNELL-9N,6W,1	3454	3,105	2 L	33.9	DUNDEE	3,125	1		1939		10	0	4,035	0	0	403	0
AOF	BUTMAN	DUNDEE	1949	GLADWIN, BUTMAN-20N,1W,13	3672	3,596	6 L	41.4	SYLVANIA		1		1963			SEE	BUTMAN	RICHFIELD			
OF	BUTMAN	RICHFIELD	1949	GLADWIN, BUTMAN-20N,1W,12	3672	4,921	10 D	41.6	SYLVANIA		7	2	0	7	320	3,697	354,186	0	0	1,106	50
AOF	BUTMAN	TRAVERSE	1950	GLADWIN, BUTMAN-20N,1W,12	3672	2,789	2 L	--	SYLVANIA	5,027	1		1953			SEE	BUTMAN	RICHFIELD			
AGF	CAL-LEE	NIAGARAN	1962	CALHOUN, LEE-1S,5W,22	3842	3,036	8 D	--	PRAIRIE DU CHIEN	4,975			1981		620	0	980	0	0	1	0
OF	CALVIN, SEC. 20	TRAVERSE	1982	CASS, CALVIN-07S,14W,20	3924	768	1 L	26	TRAVERSE	769	1	1	0	1	40	1,167	1,167	0	0	29	3
OF	CALVIN, SEC. 28	TRAVERSE	1980	CASS, CALVIN-7S,14W,28	3924	763	7 L	21.3	TRAVERSE	770	24	14	0	24	960	66,970	83,684	0	0	87	74
OF	CANNON CREEK	DETROIT RIVER SZ	1979	MISSAUKEE, NORWICH-24N,6W,6	3649	4,283	95 L	46.6	AMHERSTBURG	4,848	3	0	0	3	120	3,656	19,486	0	0	162	3
AGF	CANNON CREEK	TRAVERSE	1950	MISSAUKEE, PIONEER-24N,7W,1	3649	2,695	11 L	--	RICHFIELD	4,810	21		1956		3,360	0	0	0	868,396	0	0
AOF	CASCO	TRAVERSE	1940	ALLEGAN, CASCO-1N,16W,34	3604	1,095	2 L	38.6	TRAVERSE	1,115	9		1959		50	0	17,382	0	0	347	0
G-F	CASCO 07-04N-15E	NIAGARAN	1982	ST. CLAIR, CASCO-04N,15E,07	3737	2,840	96 D	--	NIAGARAN	3,091	1	1	0	1	80	0	0	0	0	0	0
OF	CASCO, SEC. 07	TRAVERSE	1981	ALLEGAN, CASCO-1N,16W,7	3604	1,163	3 L	36	TRAVERSE	1,168	1	0	0	1	40	2,249	3,729	0	0	93	10
G-C	CASE 01-33N-03E	NIAGARAN	1978	PRESQUE ISLE, CASE-33N,3E,1	3878	3,608	23 D	50.9	NIAGARAN	3,846	1	0	0	1	80	0	35	SHUT-IN	0	0	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	CASE 03-33N-03E	NIAGARAN	1981	PRESQUE ISLE, CASE-33N,3E,3	3878	3,659	7 D	45.4	NIAGARAN	3,790	2	0	0	2	160	20,876	30,548	0	0	190	0
OF	CAT CREEK	DUNDEE	1968	OSCEOLA, HERSEY-17N,9W,4	3561	3,696	4 L	--	DUNDEE	3,890	8	0	0	6	300	6,340	497,092	0	0	1,656	1,500
OF	CATO	REED CITY	1944	MONTCALM, CATO-12N,8W,6	3605	3,542	3 D	44.7	DETROIT RIVER	3,731	22	0	0	9	670	9,975	1,199,173	0	0	1,789	1,630
OF	CEDAR	DUNDEE	1943	OSCEOLA, CEDAR-18N,9W,28	3589	3,810	2 L	46.0	SYLVANIA		10	0	0	5	420	2,678	SEE	CEDAR	RICHFIELD		950
GF	CEDAR	MICHIGAN STRAY	1945	OSCEOLA, CEDAR-18N,9W,28	3589	1,490	7 S	--	SYLVANIA	5,165	5	0	0	4	800	0	0	0	1,430,876	0	0
OF	CEDAR	RICHFIELD	1945	OSCEOLA, CEDAR-18N,9W,28	3589	5,060	6 L	44.7	SYLVANIA		4	0	0	4	140	1,636	1,209,692	0	0	8,621	10
AGF	CEDAR CREEK	"BEREA"	1940	MUSKEGON, CEDAR CREEK-11N,15W,32	3557	1,125	7 L	--	DUNDEE	2,252	7		1960		1,120	0	0	0	637,019	0	0
AOF	CEDAR CREEK, SEC. 23	TRAVERSE	1949	MUSKEGON, CEDAR CREEK-11N,15W,23	3577	1,951	2 L	--	DUNDEE	2,453	2		1968		50	0	2,652	0	0	53	0
OF	CHARLTON 09-30N-01W	NIAGARAN	1972	OTSEGO, CHARLTON-30N,1W,9	3790	5,832	226 D	46.4	NIAGARAN	6,216	1	0	0	1	160	33,376	527,001	44,947	781,286	3,293	325
OF	CHARLTON 10-30N-01W	NIAGARAN	1974	OTSEGO, CHARLTON-30N,1W,10	3790	6,093	96 D	45.8	NIAGARAN	6,265	1	0	0	1	160	36,332	597,738	121,775	665,791	3,735	700
OF	CHARLTON 12-30N-01W	NIAGARAN	1973	OTSEGO, CHARLTON-30N,1W,12	3790	5,936	129 D	50.3	NIAGARAN	6,330	2	0	0	2	160	23,729	212,194	69,780	5,696,813	1,326	5
OF	CHARLTON 13-30N-01W	NIAGARAN	1974	OTSEGO, CHARLTON-30N,1W,13	3790	5,958	95 D	48.6	NIAGARAN	6,185	2	0	0	2	80	18,118	276,613	94,605	1,013,521	3,457	0
AGF	CHARLTON 16-30N-01W	NIAGARAN	1980	OTSEGO, CHARLTON-30N,1W,16	3790	5,984	122 D	--	NIAGARAN	6,184	1		1981		80	0	0	0	0	0	0
OF	CHARLTON 24-30N-01W	NIAGARAN	1973	OTSEGO, CHARLTON-30N,1W,24	3790	6,234	26 D	--	NIAGARAN	6,390	1	0	0	1	80	5,232	169,008	108,282	1,225,997	2,112	0
G-C	CHARLTON 31-30N-01W	A-2 C/NIAGARAN	1972	OTSEGO, CHARLTON-30N,1W,31	3790	5,676	13 D	51.8	NIAGARAN	6,400	3	0	0	3	430	31,774	415,646	950,662	8,051,676	966	0
OF	CHARLTON 04-31N-01W	NIAGARAN	1970	OTSEGO, CHARLTON-31N,1W,4	3791	4,766	116 D	55	NIAGARAN	5,270	5	0	0	4	520	218,009	1,892,299	81,927	2,095,322	3,639	86
OF	CHARLTON 05-31N-01W	NIAGARAN	1972	OTSEGO, CHARLTON-31N,1W,5	3791	6,770	15 D	44.3	NIAGARAN	6,910	2	1	0	2	320	117,969	943,517	4,749	1,188,580	2,948	0
OF	CHARLTON 06-30N-01W	NIAGARAN	1982	OTSEGO, CHARLTON-30N,01W,06	3790	5,857	18 D	48	NIAGARAN	5,975	1	1	0	1	80	61,638	61,638	55,704	55,704	771	0
OF	CHARLTON 07-31N-01W	NIAGARAN	1974	OTSEGO, CHARLTON-31N,1W,7	3791	4,897	16 D	46.1	NIAGARAN	5,184	4	0	0	4	320	176,280	1,156,509	517,186	3,112,506	3,614	26
OF	CHARLTON 09-31N-01W	SALINA-NIAGARAN	1972	OTSEGO, CHARLTON-31N,1W,9	3791	4,843	3 D	44.2	NIAGARAN	5,045	2	0	0	2	160	211,462	2,045,476	139,483	1,704,748	12,784	0
OF	CHARLTON 10-31N-01W	NIAGARAN	1981	OTSEGO, CHARLTON-31N,1W,10	3791	5,176	21 D	--	NIAGARAN	5,366	1	0	0	1	Unitized	19,959	2,677	167,867	6,105	0	10
G-C	CHARLTON 11-31N-01W	NIAGARAN	1981	OTSEGO, CHARLTON-31N,1W,11	3791	5,082	26 D	71	NIAGARAN	5,419	1	0	0	1	Unitized	19,178	1,143	1,023,535	47,067	0	0
G-C	CHARLTON 11-31N-01W P/A	SALINA-NIAGARAN	1981	OTSEGO, CHARLTON-31N,1W,11	3791	5,041	276 D	72	NIAGARAN	5,470	1	0	0	1	Unitized	6,174	800	306,669	36,393	0	0
OF	CHARLTON 27-31N-01W	NIAGARAN	1972	OTSEGO, CHARLTON-31N,1W,27	3791	5,202	26 D	45.4	NIAGARAN	5,228	4	0	0	4	360	81,715	1,650,623	413,441	3,531,237	4,585	0
G-C	CHARLTON 28-31N-01W	A-1 CARBONATE	1974	OTSEGO, CHARLTON-31N,1W,28	3791	4,926	45 D	64.8	NIAGARAN	5,421	2	0	0	2*	80	473	110,308	124,664	1,976,207	1,378	0
OF	CHARLTON 28-31N-01W P/A	NIAGARAN	1974	OTSEGO, CHARLTON-31N,1W,28	3791	5,628	28 D	44.4	NIAGARAN	5,796	3	0	0	3*	320	205,353	1,225,923	259,424	1,271,604	3,831	11
OF	CHARLTON 30-31N-01W	NIAGARAN	1975	OTSEGO, CHARLTON-31N,1W,30	3791	5,435	11 D	43.4	NIAGARAN	5,650	2	0	0	2	160	67,384	1,094,175	221,350	1,315,620	6,838	2
OF	CHARLTON 31-31N-01W	NIAGARAN	1973	OTSEGO, CHARLTON-31N,1W,31	3791	5,391	54 D	41.9	NIAGARAN	5,770	4	0	0	3	240	38,609	1,101,531	80,169	1,246,695	4,589	105
OF	CHARLTON 33-31N-01W	NIAGARAN	1976	OTSEGO, CHARLTON-31N,1W,33	3791	5,318	20 D	42	NIAGARAN	5,649	1	0	0	1	120	41,781	461,622	153,699	677,787	3,846	0
OF	CHARLTON 34-31N-01W	NIAGARAN	1974	OTSEGO, CHARLTON-31N,1W,34	3791	5,492	10 D	44.5	NIAGARAN	5,830	3	0	0	3	320	104,823	1,005,927	175,529	965,844	3,143	10
GF	CHARLTON, SEC. 08	ANTRIM	1980	OTSEGO, CHARLTON-30N,1W,8	3790	1,315	173 SH	--	ANTRIM	1,488	5	0	0	5	200	0	0	0	0	0	75
GF	CHARLTON, SEC. 16	ANTRIM	1980	OTSEGO, CHARLTON-30N,1W,16	3790	1,389	134 SH	--	ANTRIM	1,523	6	1	0	6	240	0	0	0	0	0	225
G-C	CHARLTON, SEC. 16	PRAIRIE DU CHIEN	1982	OTSEGO, CHARLTON-30N,01W,16	3790	7,839	7 S	60	PRAIRIE DU CHIEN	8,710	1	1	0	1	80	0	0	0	0	0	13
OF	CHASE	"BEREA"	1943	LAKE, CHASE-17N,11W,29	3570	2,460	4 SL	--	DETROIT RIVER	3,734	2	0	0	1	20	198	10,311	0	0	515	0
AOF	CHERRY GROVE	TRAVERSE	1952	WEXFORD, CHERRY GROVE-21N,10W,27	3714	3,145	4 D	--	DUNDEE	3,998	1		1953		10	0	4,814	0	0	481	0
AGF	CHERRY GROVE, SEC. 13	MICHIGAN STRAY	1957	WEXFORD, CHERRY GROVE-21N,10W,13	3714	1,326	35 S	--	DUNDEE	4,080	5		1973		640	0	0	0	943,213	0	0
OF	CHESANING	TRAVERSE	1979	SAGINAW, CHESANING-9N,3E,20	3578	2,343	7 L	40-45	DUNDEE	2,914	2	0	0	2	80	8,970	45,463	0	0	568	0
OF	CHESANING, SEC. 24	TRAVERSE	1980	SAGINAW, CHESANING-9N,3E,24	3578	2,223	18 L	50	DUNDEE	2,961	1	0	0	1	80	1,158	2,186	0	0	27	0
AOF	CHESHIRE	TRAVERSE	1947	ALLEGAN, CHESHIRE-1N,14W,27	3502	1,289	2 L	35	TRAVERSE	1,348	3		1958		30	0	9,290	0	0	309	0
GF	CHESTER	ANTRIM	1965	OTSEGO, CHESTER-29N,2W,14	3777	1,360	?.SH	--	NIAGARAN	6,870	18	1	0	18	720	0	0	0	1,363,822	0	500
GF	CHESTER	TRAVERSE	1980	OTSEGO, CHESTER-29N,2W,13	3777	1,767	1 L	--	TRAVERSE	1,768	1	0	0	1	40	0	0	0	0	0	0
OF	CHESTER 05-29N-02W	NIAGARAN	1978	OTSEGO, CHESTER-29N,2W,5	3777	6,340	20 D	46.2	NIAGARAN	6,580	1	0	0	1	80	43,984	337,400	122,970	511,035	4,217	0
OF	CHESTER 10-29N-02W	NIAGARAN	1975	OTSEGO, CHESTER-29N,2W,10	3777	6,145	47 D	68.5	NIAGARAN	6,644	3	0	0	3	320	51,425	527,393	231,837	3,790,552	1,648	0
OF	CHESTER 13-29N-02W	NIAGARAN	1979	OTSEGO, CHESTER-29N,2W,13	3777	6,180	---	--	NIAGARAN	6,195	2	0	0	1	80	104	18,744	0	0	234	0
G-C	CHESTER 21-29N-02W	NIAGARAN	1973	OTSEGO, CHESTER-29N,2W,21	3777	6,273	29 D	--	NIAGARAN	6,770	1	0	0	1	160	1,044	141,030	494,296	7,575,559	881	0
OF	CHESTER 22-29N-02W	NIAGARAN	1971	OTSEGO, CHESTER-22-29N-02W	3777	6,570	18 D	45	NIAGARAN	6,685	1	0	0	1	40	0	41,062	0	529,169	1,026	0
OF	CHESTER 02-30N-02W	NIAGARAN	1971	OTSEGO, CHESTER-30N,2W,2	3782	5,653	247 D	43.2	NIAGARAN	6,051	5	0	0	4	320	43,539	801,238	19,683	349,452	2,503	66
AOF	CHESTER 05-30N-02W	NIAGARAN	1972	OTSEGO, CHESTER-30N,2W,5	3782	5,538	10 D	--	NIAGARAN	5,750	1		1978		40	0	3,985	0	0	99	0
OF	CHESTER 05-30N-02W P/A	A-1 CARBONATE	1975	OTSEGO, CHESTER-30N,2W,5	3782	5,634	10 D	44.8	NIAGARAN	5,938	1	0	0	1	80	1,569	66,824	0	7,725	835	248
OF	CHESTER 06-30N-02W	A-1 CARBONATE	1973	OTSEGO, CHESTER-30N,2W,6	3782	5,659	21 D	43.0	NIAGARAN	6,022	3	0	1	2	240	91,565	1,133,116	79,666	1,173,978	4,721	33
OF	CHESTER 10-30N-02W	NIAGARAN	1972	OTSEGO, CHESTER-30N,2W,10	3782	5,986	28 D	--	NIAGARAN	6,200	1	0	0	1	80	2,677	477,628	0	331,932	5,970	0
OF	CHESTER 10-30N-02W P/A	NIAGARAN	1973	OTSEGO, CHESTER-30N,2W,10	3782	5,898	66 D	42.6	NIAGARAN	6,240	3	0	0	2	160	93,107	1,096,915	109,473	690,618	6,855	375
OF	CHESTER 16-30N-02W	NIAGARAN	1971	OTSEGO, CHESTER-30N,2W,16	3782	5,760	300 D	--	NIAGARAN	6,350	5	0	0	5	360	70,804	2,103,703	211,725	2,090,710	5,843	59
OF	CHESTER 18-30N-02W	NIAGARAN	1971	OTSEGO, CHESTER-30N,2W,18	3782	5,930	20 D	45	NIAGARAN	6,330	12	0	0	11	840	1,219,386	10,229,891	792,858	7,118,147	12,178	18,671
OF	CHESTER 19-30N-02W	NIAGARAN	1971	OTSEGO, CHESTER-30N,2W,19	3782	6,054	30 D	44.4	NIAGARAN	6,512	2	0	0	2	120	151,978	1,584,973	81,323	932,046	13,208	0
OF	CHESTER 21-30N-02W	NIAGARAN	1970	OTSEGO, CHESTER-30N,2W,21	3782	5,772	283 D	43.0	NIAGARAN	6,483	5	1	0	5	320	294,153	2,691,440	174,973	2,622,811	8,410	173
OF	CHESTER 30-30N-02W	NIAGARAN	1973	OTSEGO, CHESTER-30N,2W,30	3782	6,232	39 D	37.7	NIAGARAN	6,350	1	0	0	1	80	5,329	453,163	18,442	466,123	5,664	0
OF	CHESTER 34-30N-02W	NIAGARAN	1978	OTSEGO, CHESTER-30N,2W,34	3782	6,364	26 D	46.8	NIAGARAN	6,523	2	0	0	2	160	59,091	362,373	218,700	871,338	2,264	0
AOF	CHESTER, SEC. 15	A-2 C/LOWER NIAGARAN	1951	OTSEGO, CHESTER-29N,2W,15	3777	6,610	5 D	41.0	NIAGARAN	6,870	1		1956		40	0	2,752	0	0	68	0
GF	CHESTER, SEC. 25	ANTRIM	1979	OTSEGO, CHESTER-30N,2W,25	3782	1,434	63 S	--	NIAGARAN	6,358	5	4	0	5	240	0	0	10,896	50,234	0	575
GF	CHESTER, SEC. 33	ANTRIM	1982	OTSEGO, CHESTER-30N,02W,33	3782	1,456	109 SH	--	ANTRIM	1,565	1	1	0	1	40	0	0	0	0	0	0
OF	CHESTERFIELD	NIAGARAN	1962	MACOMB, CHESTERFIELD-3N,14E,28	3732	2,508	7 D	40.3	NIAGARAN	2,707	7	0	0	1	280	1,276	63,660	0	124,021	227	1
AGF	CHINA BELLE	NIAGARAN	1963	ST. CLAIR, CHINA-4N,16E,35	3741	2,365	15 D	--	NIAGARAN	2,451	3		1971		120	0	2,227	0	459,002	18	0
AOF	CHINA, SEC. 12	NIAGARAN	1962	ST. CLAIR, CHINA-4N,16E,12	3741	2,509	11 D	39.1	NIAGARAN	2,631	2		1970		80	0	11,895	0	27,570	148	0
AOF	CHINA, SEC. 31	SALINA	1959	ST. CLAIR, CHINA-4N,16E,31	3741	2,378	13 D	--	NIAGARAN	2,641	1		1964		SEE		COTTRELLVILLE				
GF	CHINA, SOUTH	SALINA-NIAGARAN	1961	ST. CLAIR, CHINA-4N,16E,33	3741	2,324	14 D	--	NIAGARAN	2,743	11	0	0	5	440	0	0	0	533,912	0	DOMESTIC
AOF	CHIPPEWA, SEC. 10	TRAVERSE	1961	ISABELLA, CHIPPEWA-14N,3W,10	3095A	3,193	1 L	--	TRAVERSE	3,220	1		1964		10	0	1,250	SEE	MT PLEASANT	125	0
GF	CLARE CITY	MICHIGAN STRAY	1937	ISABELLA, WISE-16N,3W,6	3542	1,290	5 S	--	DUNDEE	3,865	9	0	0	2	760	0	0	0	2,340,890	0	0
GF	CLARE CITY	MICHIGAN STRAY	1938	CLARE, GRANT-17N,4W,35	3496	1,303	2 S	30.2	DUNDEE	3,853	7	0	0	3	120	1,418	87,615	0	0	730	0
GF	CLARENCE 19-01S-04W P/A	SALINA-NIAGARAN	1977	CALHOUN CLARENCE-1S,4W,19	3865	3,090	20 D	--	NIAGARAN	3,355	5	0	0	4	240	0	281	19,367	875,796	1	0
GF	CLARENCE 19-01S-04W P/B	SALINA-A-1 CARBONATE	1978	CALHOUN, CLARENCE-1S,4W,19	3865	3,196	10 D	--	NIAGARAN	3,307	2	0	0	1	120	0	0	26,706	402,037	0	0
GF	CLARENCE 22-01S-04W	NIAGARAN	1982	CALHOUN, CLARENCE-01S,04W,22	3865	3,184	93 D	--	CLINTON	3,612	1	1	0	1	80	0	0	17,025	17,025	0	0
OF	CLARENCE 27-01S-04W	NIAGARAN	1979	CALHOUN, CLARENCE-1S,4W,27	3865	3,193	115 D	34.4	NIAGARAN	3,297	1	0	0	1	40	13,257	42,206	27,866	27,866	1,055	30
OF	CLARENCE 27-01S-04W P/A	NIAGARAN	1981	CALHOUN, CLARENCE-1S,4W,27	3865	3,169	20 D	39.8	NIAGARAN	3,302	2	1	0	2	80	6,414	6,549	68,887	68,887	81	95
GF	CLARENCE 29-01S-04W	NIAGARAN	1982	CALHOUN, CLARENCE-01S,04W,29	3865	3,175	102 D	--	NIAGARAN	3,330	1	1	0	1	40	0	0	28,996	28,996	0	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICKNESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
GF	CLARENCE 29-01S-04W P/A	SALINA-NIAGARAN	1982	CALHOUN, CLARENCE-01S,04W,29	3865	3,145	43 D	--	NIAGARAN	3,390	1	1	0	1	80	0	0	0	0	0	0
OF	CLARENCE 32-01S-04W	NIAGARAN	1982	CALHOUN, CLARENCE-01S,04W,32	3865	3,061	279 D	25.5	CLINTON	3,525	1	1	0	1	40	3,737	3,737	673	673	93	0
GF	CLARENCE 33-01S-04W	NIAGARAN	1981	CALHOUN, CLARENCE-1S,4W,33	3865	3,152	6 D	--	NIAGARAN	3,312	1	0	0	1	40	33	33	10,764	10,764	0	0
OF	CLARENCE 34-01S-04W	NIAGARAN	1981	CALHOUN, CLARENCE-1S,4W,34	3865	3,183	7 D	39.8	NIAGARAN	3,328	2	1	0	2	80	30,495	30,617	64,514	64,514	382	136
OF	CLARENCE 35-01S-04W	NIAGARAN	1981	CALHOUN, CLARENCE-1S,4W,35	3865	3,089	108 D	20.5	NIAGARAN	3,335	2	1	0	2	80	25,453	25,551	18,230	18,230	319	226
OF	CLAYBANKS 02-13N-18W	NIAGARAN	1982	OCEANA, CLAYBANKS-13N,18W,02	3932	3,800	30 D	49	NIAGARAN	3,920	1	1	0	1	80	0	0	0	0	0	0
G-C	CLAYBANKS 11-13N-18W	NIAGARAN	1980	OCEANA, CLAYBANKS-13N,18W,11	3932	3,658	15 D	57	NIAGARAN	3,737	1	0	0	1	80	0	0	0	0	0	0
GF	CLAYTON	BEREA	1936	ARENAC, CLAYTON-20N,4E,10	3500	1,180	10 S	--	SYLVANIA	4,163	31	0	0	17	1,560	0	0	0	5,213,269	0	0
OF	CLAYTON	DETROIT RIVER-SZ	1953	ARENAC, CLAYTON-20N,4E,9	3500	3,507	9 D	45.9	SYLVANIA								SEE	CLAYTON	RICHFIELD		
OF	CLAYTON	DUNDEE	1935	OGEMAW, RICHLAND-21N,4E,31	3452	2,465	12 DL	34.2	SYLVANIA	4,163	80	0	0	47	1,290	30,108	SEE	CLAYTON	RICHFIELD		1,531
OF	CLAYTON	RICHFIELD	1947	ARENAC, CLAYTON-20N,4E,9	3500	3,790	9 D	36.2	SYLVANIA		5	0	0	5	200	2,874	6,828,353	0	0	33,991	1
AOF	CLEAR LAKE	TRAVERSE	1950	VAN BUREN, PINE GROVE-1S,13W,10	3538	1,380	1 L	--	TRAVERSE	1,399	14		1953		140	0	17,490	0	0	124	0
OF	CLEON 11-24N-13W	NIAGARAN	1973	MANISTEE, CLEON-24N,13W,11	3803	5,624	121 D	43.5	NIAGARAN	6,167	4	0	0	4	320	81,711	734,560	130,343	743,436	2,295	2
OF	CLEON 12-24N-13W	NIAGARAN	1974	MANISTEE, CLEON-24N,13W,12	3803	5,851	35 D	39.3	NIAGARAN	6,119	1	0	0	1	80	12,116	312,903	12,677	262,930	3,911	28
OF	CLEON 12-24N-13W P/A	NIAGARAN	1975	MANISTEE, CLEON-24N,13W,12	3803	5,702	238 D	41.1	NIAGARAN	6,043	2	1	0	2	160	111,052	729,546	138,458	514,174	4,559	0
OF	CLEON 13-24N-13W	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,13	3803	5,858	121 D	42.9	NIAGARAN	5,980	1	0	0	1	160	26,431	325,440	78,208	629,468	2,034	1
OF	CLEON 14-24N-13W	NIAGARAN	1973	MANISTEE, CLEON-24N,13W,14	3803	5,655	69 D	44.3	NIAGARAN	5,928	5	1	0	4	320	60,990	469,525	341,696	1,307,707	1,467	1
OF	CLEON 14-24N-13W P/A	NIAGARAN	1976	MANISTEE, CLEON-24N,13W,14	3803	5,728	59 D	--	NIAGARAN	5,897	4	0	0	3	160	47,098	417,447	185,849	742,188	2,609	6
G-C	CLEON 15-24N-13W	NIAGARAN	1974	MANISTEE, CLEON-24N,13W,15	3803	5,464	20 D	--	NIAGARAN	5,770	1	0	0	1	80	74	36,875	449,952	5,251,429	460	0
G-C	CLEON 16-24N-13W	NIAGARAN	1980	MANISTEE, CLEON-24N,13W,16	3803	5,369	87 D	66.5	NIAGARAN	5,575	2	0	0	2	160	569	23,789	882,639	3,453,361	148	4
G-C	CLEON 17-24N-13W	NIAGARAN	1978	MANISTEE, CLEON-24N,13W,17	3803	5,408	54 D	59	NIAGARAN	5,523	2	0	0	2	160	656	54,398	357,080	4,449,116	339	0
G-C	CLEON 19-24N-13W	NIAGARAN	1976	MANISTEE, CLEON-24N,13W,19	3803	5,073	129 D	72.25	NIAGARAN	5,453	1	0	0	1	80	6,053	85,196	16,552	666,730	1,064	0
OF	CLEON 19-24N-13W P/A	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,19	3803	5,007	133 D	38.9	NIAGARAN	5,450	2	0	0	1	80	7,911	49,040	22,587	89,146	613	0
OF	CLEON 19-24N-13W P/B	NIAGARAN	1980	MANISTEE, CLEON-24N,13W,19	3803	5,268	12 D	42.3	NIAGARAN	5,460	1	0	0	1	80	6,396	20,383	8,950	19,435	254	0
G-C	CLEON 20-24N-13W	NIAGARAN	1974	MANISTEE, CLEON-24N,13W,20	3803	5,145	202 D	--	NIAGARAN	5,534	2	0	0	2	80	2,692	10,738	1,021,179	1,814,313	134	4
G-C	CLEON 20-24N-13W P/A	NIAGARAN	1979	MANISTEE, CLEON-24N,13W,20	3803	5,407	38 D	--	NIAGARAN	5545	2	0	0	2	80	2,039	31,548	656,949	1,925,567		5
G-C	CLEON 22-24N-13W	NIAGARAN	1975	MANISTEE, CLEON-24N,13W,22	3803	5,436	73.5 D	65.5	NIAGARAN	5,701	3	0	0	3	200	571	118,107	305,753	8,114,372	590	0
OF	CLEON 23-24N-13W	NIAGARAN	1980	MANISTEE, CLEON-24N,13W,23	3803	5,755	23 D	44	NIAGARAN	5,899	1	0	0	1	80	23,000	62,402	164,520	372,844	780	0
G-C	CLEON 24-24N-13W	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,24	3803	5,857	76 D	--	NIAGARAN	6,052	1	0	0	1	80	2,055	11,367	76,905	342,695	147	0
OF	CLEON 25-24N-13W	NIAGARAN	1982	MANISTEE, CLEON-24N,13W,25	3803	5,876	126 D	--	NIAGARAN	6,067	1	1	0	1	80	223	223	0	0	3	0
G-C	CLEON 26-24N-13W	NIAGARAN	1976	MANISTEE, CLEON-24N,13W,26	3803	5,616	154 D	74.8	NIAGARAN	5,901	2	0	0	1	160	875	17,587	259,074	1,535,814	109	0
GF	CLEON 26-24N-13W P/A	NIAGARAN	1979	MANISTEE, CLEON-24N,13W,26	3803	5,762	20 L	--	NIAGARAN	5,904	2	0	0	2	160	27,878	27,878	886,645	909,836	174	20
OF	CLEON 26-24N-13W P/B	NIAGARAN	1982	MANISTEE, CLEON-24N,13W,26	3803	5,914	78 D	--	NIAGARAN	6,056	1	1	0	1	80	358	358	0	0	5	45
G-C	CLEON 27-24N-13W	NIAGARAN	1976	MANISTEE, CLEON-24N,13W,27	3803	5,659	36 D	--	NIAGARAN	5,937	3	0	0	2	160	2,806	21,462	201,073	889,222	134	0
G-C	CLEON 27-24N-13W P/A	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,27	3803	5,724	10 D	--	NIAGARAN	5,860	2	0	0	1	320	1,382	17,744	99,610	1,859,322	55	0
G-C	CLEON 29-24N-13W	NIAGARAN	1978	MANISTEE, CLEON-24N,13W,29	3803	5,664	10 D	--	NIAGARAN	5,770	2	0	0	2	240	1,141	32,391	721,345	3,822,831	134	0
G-C	CLEON 29-24N-13W P/A	NIAGARAN	1979	MANISTEE, CLEON-24N,13W,29	3803	5,568	13 D	65.4	NIAGARAN	5,698	3	0	0	3	240	12,387	34,573	721,626	1,468,387	144	1
OF	CLEON 31-24N-13W	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,31	3803	5,220	119 D	--	NIAGARAN	5,543	3	1	0	3	240	7,233	74,868	323,969	2,042,143	311	11
G-C	CLEON 32-24N-13W	NIAGARAN	1977	MANISTEE, CLEON-24N,13W,32	3803	5,418	44 D	51.5	NIAGARAN	5,683	1	0	0	1	160	44,028	138,133	172,761	599,844	863	1
OF	CLEON 32-24N-13W P/A	NIAGARAN	1978	MANISTEE, CLEON-24N,13W,32	3803	5,363	90 D	46.6	NIAGARAN	5,773	4	2	0	4	240	175,512	442,702	156,376	742,173	1,844	0
OF	CLEON 32-24N-13W P/B	NIAGARAN	1980	MANISTEE, CLEON-24N,13W,32	3803	5,422	240 D	43	NIAGARAN	5,740	3	1	0	3	240	156,668	295,127	295,237	458,873	1,229	0
AOF	CLINTON	TRAVERSE	1953	WASHTENAW, BRIDGEWATER-4S,4E,28	3662	986	2 D	--	TRENTON	3,606	2		1962		20	0	2,093	0	0	104	0
OF	COFFEE LAKE	TRAVERSE	1946	VAN BUREN, COLUMBIA-1S,15W,17	3541	1,128	1 L	--	TRAVERSE	1,130	26	2	0	13	230	12,058	105,196	0	0	457	415
G-C	COLD SPRINGS 01-28N-06W P/A	SALINA-NIAGARAN	1973	KALKASKA, COLD SPRINGS-28N,6W,1	3784	6,578	194 D	61.0	NIAGARAN	6,950	2	0	0	2	160	5,592	326,178	711,141	12,830,772	2,038	36
G-C	COLD SPRINGS 01-28N-06W	NIAGARAN	1976	KALKASKA, COLD SPRINGS-28N,6W,1	3784	6,595	15 D	56.4	NIAGARAN	6,887	2	0	0	1	80	1,435	2,181	16,744	33,374	27	0
OF	COLD SPRINGS 10-28N-06W	NIAGARAN	1982	KALKASKA, COLD SPRINGS-28N,06W,10	3784	6,797	6 D	42	NIAGARAN	7,125	1	1	0	1	80	3,974	3,974	0	0	50	0
OF	COLD SPRINGS 14-28N-06W	NIAGARAN	1976	KALKASKA, COLD SPRINGS-28N,6W,14	3784	6,780	10.5D	--	NIAGARAN	7,095	1	0	0	1	80	21,383	211,640	0	17,673	2,645	28
OF	COLD SPRINGS 18-28N-06W	SALINA-NIAGARAN	1974	KALKASKA, COLD SPRINGS-28N,6W,18	3784	6,364	38 D	--	NIAGARAN	6,675	3	0	1	1	240	4,673	105,115	0	60,419	437	67
OF	COLD SPRINGS 19-28N-06W	NIAGARAN	1971	KALKASKA, COLD SPRINGS-28N,6W,19	3784	6,596	8 D	44.9	NIAGARAN	7,036	4	0	0	4	320	46,052	727,262	416,201	4,260,008	2,272	111
OF	COLD SPRINGS 20-28N-06W	NIAGARAN	1971	KALKASKA, COLD SPRINGS-28N,6W,20	3784	6,737	35 D	41.0	NIAGARAN	6,970	2	0	0	2	160	77,988	1,243,613	264,064	2,700,273	7,772	112
G-C	COLD SPRINGS 20-28N-06W P/A	NIAGARAN	1981	KALKASKA, COLD SPRINGS-28N,6W,20	3784	6,836	8 D	--	NIAGARAN	7,074	1	0	0	1	80	1,404	2,781	195,968	211,857	34	0
OF	COLD SPRINGS 21-28N-06W	NIAGARAN	1970	KALKASKA, COLD SPRINGS-28N,6W,21	3784	6,764	45 D	45.6	NIAGARAN	7,315	3	0	0	1	160	7,951	108,799	19,180	138,204	679	3
AOF	COLD SPRINGS 21-28N-06W P/A	NIAGARAN	1978	KALKASKA, COLD SPRINGS-28N,6W,21	3784	6,730	12 D	44.9	NIAGARAN	7,143	1		1981		80	0	8,215	0	1,153	102	0
OF	COLD SPRINGS 22-28N-06W	NIAGARAN	1976	KALKASKA, COLD SPRINGS-28N,6W,22	3784	6,810	15 D	43.6	NIAGARAN	7,138	2	0	0	1	160	10,739	65,623	0	15,932	410	0
OF	COLD SPRINGS 22-28N-06W P/A	NIAGARAN	1978	KALKASKA, COLD SPRINGS-28N,6W,22	3784	6,714	102 D	42	NIAGARAN	7,102	1	0	0	1	80	10,856	49,420	38,654	121,900	617	115
OF	COLD SPRINGS 23-28N-06W	NIAGARAN	1974	KALKASKA, COLD SPRINGS-28N,6W,23	3784	6,970	20 D	44.4	NIAGARAN	7,218	1	0	0	1	80	39,842	219,443	96,961	262,979	2,743	55
G-C	COLD SPRINGS 24-28N-06W	SALINA-NIAGARAN	1974	KALKASKA, COLD SPRINGS-28N,6W,24	3784	6,760	70 D	55.4	NIAGARAN	7,212	3	1	0	2	200	12,973	220,062	0	407,377	1,100	620
OF	COLD SPRINGS 24-28N-06W P/A	NIAGARAN	1979	KALKASKA, COLD SPRINGS-28N,6W,24	3784	6,988	10 L	46.9	NIAGARAN	7,305	1	0	0	1	80	0	17,257	0	75,567	215	0
G-C	COLD SPRINGS 25-28N-06W	NIAGARAN	1971	KALKASKA, COLD SPRINGS-28N,6W,25	3784	6,734	544 D	62.3	NIAGARAN	7,383	2	0	0	1	200	12,144	35,142	222,133	1,070,286	175	1
AOF	COLD SPRINGS 25-28N-06W P/A	NIAGARAN	1972	KALKASKA, COLD SPRINGS-28N,6W,25	3784	6,950	10 D	--	NIAGARAN	7,365	1		1982		160	0	168,510	0	226,094	1,053	0
OF	COLD SPRINGS 28-28N-06W	NIAGARAN	1975	KALKASKA, COLD SPRINGS-28N,6W,28	3784	6,790	10 D	43.6	NIAGARAN	7,150	1	0	0	1	80	11,497	98,906	62,638	189,257	1,236	95
OF	COLD SPRINGS 29-28N-06W	NIAGARAN	1976	KALKASKA, COLD SPRINGS-28N,6W,29	3784	6,865	8 D	43.5	NIAGARAN	7,040	3	0	0	3	240	103,185	946,459	451,485	2,182,934	3,943	91
OF	COLD SPRINGS 30-28N-06W	NIAGARAN	1974	KALKASKA, COLD SPRINGS-28N,6W,30	3784	6,719	39 D	44.4	NIAGARAN	6,858	2	0	0	2	120	65,437	681,866	232,525	2,110,219	5,682	17
OF	COLD SPRINGS 32-28N-06W	NIAGARAN	1977	KALKASKA, COLD SPRINGS-28N,6W,32	3784	6,870	10 D	45.4	NIAGARAN	7,025	2	0	0	2	160	89,586	603,682	294,996	1,306,976	3,773	56
AOF	COLD SPRINGS 33-28N-06W	NIAGARAN	1977	KALKASKA, COLD SPRINGS-28N,6W,28	3784	6,882	26 D	41	NIAGARAN	7,156	2		1982		160	1,354	27,255	0	0	170	0
G-C	COLD SPRINGS 35-28N-06W	NIAGARAN	1979	KALKASKA, COLD SPRINGS-28N,6W,35	3784	7,160	6 L	64.4	NIAGARAN	7,350	1	0	0	1	80	84	7,181	94,034	685,834	89	0
G-C	COLD SPRINGS 36-28N-06W	NIAGARAN	1978	KALKASKA, COLD SPRINGS-28N,6W,36	3784	6,988	162 D	75.4	NIAGARAN	7,425	1	0	0	1	80	0	4,950	56,884	750,174	61	0
OF	COLDWATER	DUNDEE	1944	ISABELLA, COLDWATER-16N,6W,33	3599	3,692	25 L	48.0	DETROIT RIVER		81	0	0	17	3,200	23,008	22,219,732	0	6,277,030	6,942	11,196
OF	COLDWATER	TRAVERSE	1944	ISABELLA, COLDWATER-16N,6W,33	3599	3,110	21 D	--	DETROIT RIVER	5,090				3		2,712	SEE	COLDWATER	DUNDEE		32
AOF	COLDWATER, SOUTH	DUNDEE	1951	ISABELLA, SHERMAN-15N,6W,8	3477	3,739	4 D	--	DUNDEE	3,743	1		1959		20	0	10,941	0	0	547	0
AOF	COLE LAKE	TRAVERSE	1968	NEWAYGO, BARTON-16N,11W,30	3581	2,928	8 L	--	TRAVERSE	2,938	2		1977		40	0	30,729	0	0	768	0
AOF	COLFAX	DUNDEE	1964	MECOSTA, COLFAX-15N,9W,5	3453	3,503	25 L	43.0	DETROIT RIVER		1	0	0	1	160	0	0	0	5,223	0	DOMESTIC
GF	COLFAX	DUNDEE-REED CITY	1957	MECOSTA, COLFAX-15N,9W,5	3453	3,474	9 D	--	DETROIT RIVER		2		1967		40	0	2,188	0	0	54	0
AGF	COLFAX	MICHIGAN STRAY	1945	MECOSTA, COLFAX-15N,9W,4	3453	1,240	8 S	--	DETROIT RIVER	4,043	4		1979		640	0	0	0	495,561	0	DOMESTIC
OF	COLFAX 25-25N-13W	NIAGARAN	1981	BENZIE, COLFAX-25N,13W,25	3861	5,688	19 D	43.6	NIAGARAN	5,851	2	1	0	2	80	114,221	204,597	106,979	192,220	2,557	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICKNESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	COLFAX 36-25N-13W	NIAGARAN	1976	BENZIE, COLFAX-25N,13W,36	3861	5,842	10 D	39.5	NIAGARAN	6,015	2	0	0	2	80	67,765	433,719	84,121	447,301	5,421	0
OF	COLUMBUS, NORTH	NIAGARAN	1968	ST. CLAIR, COLUMBUS-5N,15E,5	3755	3,266	8 D	--	NIAGARAN	3,374	11	0	0	11	260	27,328	1,269,882	57,778	543,931	4,884	56
OF	COLUMBUS, SEC. 02	NIAGARAN	1971	ST. CLAIR, COLUMBUS-5N,15E,2	3755	2,798	8 D	29	NIAGARAN	3,210	2	0	0	1	80	0	7,054	0	26,492	88	0
OF	COLUMBUS, SEC. 03	NIAGARAN	1968	ST. CLAIR, COLUMBUS-5N,15E,3	3755	3,105	15 D	--	NIAGARAN	3,340	23	0	0	20	460	235,740	5,678,144	344,362	5,323,688	12,343	102
AGF	COLUMBUS, SEC. 04	NIAGARAN	1979	ST. CLAIR, COLUMBUS-5N,15E,4	3755	3,202	5 D	--	NIAGARAN	3,284	1		1982		40	0	0	0	0	0	0
AGF	COLUMBUS, SEC. 20	NIAGARAN	1972	ST. CLAIR, COLUMBUS-5N,15E,20	3755	3,128	5 D	--	NIAGARAN	3,155	1		1975		160	0	0	0	425	0	0
GF	COLUMBUS, SEC. 23	NIAGARAN	1965	ST. CLAIR, COLUMBUS-5N,15E,23	3755	2,900	46 D	--	NIAGARAN	3,122	6	0	0	5	240	1,569	33,546	0	1,046,647	139	28
AGF	COLUMBUS, SEC. 32	NIAGARAN	1970	ST. CLAIR, COLUMBUS-5N,15E,32	3755	2,983	16 D	--	NIAGARAN	3,050	2		1978		80	0	0	0	25,230	0	0
GF	COLUMBUS, SEC. 35	NIAGARAN	1982	ST. CLAIR, COLUMBUS-05N,15E,35	3755	2,651	196 D	--	NIAGARAN	2,889	1	1	0	1	40	0	0	0	0	0	0
AOF	COMSTOCK, SEC. 05	TRAVERSE	1949	KALAMAZOO, COMSTOCK-2S,10W,5	3554	1,430	3 L	--	TRAVERSE	1,480	2		1952		20	0	974	0	0	48	0
AOF	CONCORD	TRAVERSE	1953	JACKSON, CONCORD-3S,3W,36	3685	1,627	1 L	--	SALINA	2,417	5		1958		50	0	6,437	0	0	128	0
OF	CONVIS 08-01S-06W	SALINA-NIAGARAN	1975	CALHOUN, CONVIS-1S,6W,8	3841	2,978	10 D	--	NIAGARAN	3,555	3	0	1	2	160	4,158	20,675	0	894	129	0
OF	CONVIS 08-01S-06W P/A	NIAGARAN	1975	CALHOUN, CONVIS-1S,6W,8	3841	3,060	10 D	--	NIAGARAN	3,202	2	0	0	2	160	129,349	799,299	33,490	224,256	4,995	133
OF	CONVIS 09-01S-06W	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,9	3841	3,026	4 D	29	NIAGARAN	3,150	1	0	0	1	80	11,516	25,429	0	0	317	130
GF	CONVIS 12-01S-06W	NIAGARAN	1982	CALHOUN, CONVIS-01S,06W,12	3841	3,171	86 D	--	NIAGARAN	3,359	1	1	0	1	160	0	0	0	0	0	0
OF	CONVIS 16-01S-06W	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,16	3841	3,025	5 D	33	NIAGARAN	3,111	1	0	0	1	80	30,253	48,240	0	0	603	0
OF	CONVIS 16-01S-06W P/A	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,16	3841	3,108	10 D	29.3	NIAGARAN	3,226	1	0	0	1	80	15,894	23,856	0	0	298	2
OF	CONVIS 17-01S-06W	NIAGARAN	1982	CALHOUN, CONVIS-01S,06W,17	3841	2,909	15 D	--	NIAGARAN	3,013	1	1	0	1	80	3,790	3,790	0	0	47	0
OF	CONVIS 18-01S-06W	SALINA-NIAGARAN	1975	CALHOUN, CONVIS-1S,6W,18	3841	2,909	62 D	33.5	NIAGARAN	3,427	9	2	0	9	680	211,891	1,718,020	58,026	568,872	2,526	1,427
OF	CONVIS 19-01S-06W	SALINA-NIAGARAN	1976	CALHOUN, CONVIS-1S,6W,19	3841	2,820	50 D	23	NIAGARAN	2,960	2	0	0	2	160	3,312	54,327	1,297	10,704	339	905
OF	CONVIS 20-01S-06W	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,20	3841	2,853	2 D	--	NIAGARAN	3,038	1	0	0	1	80	3,993	8,274	0	0	103	0
OF	CONVIS 20-01S-06W P/A	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,20	3841	2,874	8 D	--	NIAGARAN	3,000	1	0	0	1	160	10,781	16,847	0	0	105	30
OF	CONVIS 21-01S-06W	NIAGARAN	1980	CALHOUN, CONVIS-1S,6W,21	3841	2,882	14 D	23	NIAGARAN	3,450	1	0	0	1	80	17,796	38,402	0	0	480	4
OF	CONVIS 21-01S-06W P/A	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,21	3841	2,924	11 D	25	NIAGARAN	3,010	1	0	0	1	40	3,230	4,805	0	0	120	60
OF	CONVIS 22-01S-06W	SALINA-NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,22	3841	2,926	10 D	--	NIAGARAN	3,024	1	0	0	1	80	2,630	8,136	0	0	101	1
OF	CONVIS 23-01S-06W	NIAGARAN	1982	CALHOUN, CONVIS-01S,06W,23	3841	3,040	4 D	--	NIAGARAN	3,166	3	3	0	3	160	384	384	0	0	2	0
GF	CONVIS 23-01S-06W P/A	NIAGARAN	1982	CALHOUN, CONVIS-01S,06W,23	3841	2,968	4 D	--	NIAGARAN	3,103	2	2	0	2	160	0	0	0	0	0	0
OF	CONVIS 25-01S-06W	SALINA-NIAGARAN	1975	CALHOUN, CONVIS-1S,6W,25	3841	2,876	20 D	--	NIAGARAN	3,430	2	0	0	1	160	940	12,621	0	0	78	250
AOF	CONVIS 26-01S-06W	SALINA-NIAGARAN	1978	CALHOUN, CONVIS-1S,6W,26	3841	2,926	2 D	--	NIAGARAN	3,007	1		1980		80	0	0	0	0	0	0
OF	CONVIS 29-01S-06W	NIAGARAN	1980	CALHOUN, CONVIS-1S,6W,29	3841	2,906	17 D	25	NIAGARAN	3,438	1	0	0	1	160	14,699	35,167	0	0	219	14
OF	CONVIS 30-01S-06W	SALINA-NIAGARAN	1975	CALHOUN, CONVIS-1S,6W,30	3841	2,819	35 D	27.5	NIAGARAN	3,346	5	0	0	4	400	20,815	376,553	7,787	80,466	941	3,197
OF	CONVIS 30-01S-06W P/A	NIAGARAN	1981	CALHOUN, CONVIS-1S,6W,30	3841	2,839	5 D	--	NIAGARN	3,115	1	0	0	1	80	1,906	5,890	0	0	73	0
OF	CONVIS 32-01S-06W	NIAGARAN	1982	CALHOUN, CONVIS-01S,06W,32	3841	2,845	20 D	22	NIAGARAN	3,354	1	1	0	1	80	5,231	5,231	0	0	65	0
AGF	COON CREEK	NIAGARAN	1963	MACOMB, LENOX-4N,14E,18	3740	3,034	20 D	--	NIAGARAN	3,093	2		1968		80	0	0	0	136,798	0	0
OF	COOPER	SALINA B UNIT	1979	KALAMAZOO, COOPER-1S,11W,23	3554	2,308	12 D	32	NIAGARAN	2,870	1	0	0	1	160	1,128	4,749	0	0	29	10
AGF	COOPERSVILLE	"BEREA"	1939	OTTAWA, WRIGHT-8N,13W,19	3548	1,240	5 D	--	TRAVERSE	1,900	3		1959		240	0	0	0	111,016	0	0
G-C	CORWITH 12-32N-01W	NIAGARAN	1982	OTSEGO, CORWITH-32N,01W,12	3835	4,526	10 D	76.5	NIAGARAN	4,694	2	2	0	2	Unit.	18	18	0	0	NA	0
G-C	CORWITH 14-32N-01W	NIAGARAN	1982	OTSEGO, CORWITH-32N,01W,14	3835	4,681	31 D	71	NIAGARAN	4,835	2	2	0	2	Unit.	0	0	0	0	NA	0
GF	CORWITH 23-32N-01W	NIAGARAN	1982	OTSEGO, CORWITH-32N,01W,23	3835	4,490	252 D	73.4	NIAGARAN	4,882	1	1	0	1	Unit.	0	0	0	0	NA	0
OF	CORWITH 31-32N-01W	NIAGARAN	1982	OTSEGO, CORWITH-32N,01W,31	3835	4,792	10 D	44.8	NIAGARAN	5,014	2	2	0	2	Unit.	23,331	23,331	19,602	19,602	NA	0
OF	COTTRELLVILLE	SALINA-NIAGARAN	1961	ST. CLAIR, COTTRELLVILLE-3N,16E,8	3738	2,262	6 D	38.7	NIAGARAN	2,511	14	0	0	7	520	2,123	173,323	2,945	3,162,898	333	4
GF	COTTRELLVILLE 05-03N-16E	NIAGARAN	1981	ST. CLAIR, COTTRELLVILLE-3N,16E,5	3738	2,266	77 D	--	NIAGARAN	2,455	1	0	0	1	40	0	0	0	0	0	0
AOF	CRANBERRY LAKE	DETROIT RIVER SZ	1953	CLARE, WINTERFIELD-20N,6W,12	3655	4,801	16 D	48.8	RICHFIELD		1		1962			SEE	CRANBERRY	LAKE	DUNDEE &	RICHFIELD	0
OF	CRANBERRY LAKE	DUNDEE	1943	CLARE, WINTERFIELD-20N,6W,1	3655	3,835	2 L	42.8	RICHFIELD		8	0	0	1	70	3,632	SEE	CRANBERRY LAKE		RICHFIELD	440
OF	CRANBERRY LAKE	RICHFIELD	1951	CLARE, WINTERFIELD-20N,6W,2	3655	5,048	15 D	51.0	RICHFIELD		19	0	0	8	680	57,552	2,119,728	0	0	3,111	509
AOF	CRANBERRY LAKE	TRAVERSE	1952	CLARE, WINTERFIELD-20N,6W,1	3655	3,120	7 L	39.0	RICHFIELD	5,223	7		1965			SEE	CRANBERRY	LAKE	DUNDEE &	RICHFIELD	0
OF	CRANBERRY LAKE, EAST	DUNDEE	1963	CLARE, SUMMERFIELD-20N,5W,8	3655	3,760	6 L	43.5	DETROIT RIVER		4	1	0	4	160	11,377	SEE	CRANBERRY	LAKE EAST	RICHFIELD	900
OF	CRANBERRY LAKE, EAST	RICHFIELD	1964	CLARE, SUMMERFIELD-20N,5W,8	3655	5,087	12 D	44.0	DETROIT RIVER		4	2	0	4	120	2,385	812,329	0	0	6,527	20
OF	CRANBERRY LAKE, EAST	TRAVERSE	1963	CLARE, SUMMERFIELD-20N,5W,17	3655	3,057	6 L	39.2	DETROIT RIVER	5,139	4	2	0	4	160	17,664	SEE	CRANBERRY	LAKE EAST	RICHFIELD	910
AOF	CROOKED LAKE	TRAVERSE	1949	ALLEGAN, CLYDE-2N,15W,25	3502	1,278	1 L	--	TRAVERSE	1,312	2		1956		40	0	115,452	0	0	2,886	0
AOF	CROTON	TRAVERSE	1951	NEWAYGO, CROTON-12N,11W,29	3668	2,543	2 L	--	SALINA	3,993	10		1958		200	0	91,678	0	0	458	0
AOF	CRUMP	DUNDEE	1950	BAY, GARFIELD-16N,3E,23	3560	3,294	7 L	--	DUNDEE	3,354	1		1951		10	0	1,043	0	0	104	0
OF	CRYSTAL	DUNDEE	1935	MONTCALM, CRYSTAL-10N,5W,2	3438A	3,187	4 D	43.5	DETROIT RIVER		193	0	0	7	2,000	6,580	7,900,285	0	0	3,949	1,340
OF	CRYSTAL	TRAVERSE	1954	MONTCALM, CRYSTAL-10N,5W,3	3438A	2,769	4 L	41.8	DETROIT RIVER	3,391	2	0	0	1	20	765	SEE	CRYSTAL	DUNDEE		150
AOF	CRYSTAL VALLEY	DUNDEE	1946	OCEANA, CRYSTAL-16N,16W,15	3712	2,575	12 D	42.5	ST. PETER SS.		23		1974		580	0	204,365	0	165,321	351	0
AGF	CRYSTAL VALLEY	SALINA	1961	OCEANA, CRYSTAL-16N,16W,15	3712	4,102	10 D	--	ST. PETER SS.		1		1966		40	SEE	CRYSTAL	VALLEY	DUNDEE		0
OF	CRYSTAL VALLEY	TRAVERSE	1945	OCEANA, CRYSTAL-16N,16W,16	3712	1,809	3 L	37.0	ST. PETER SS.	6,062	5	0	0	1	50	618	SEE	CRYSTAL	VALLEY	DUNDEE	300
OF	CRYSTAL VALLEY, SEC. 19	DUNDEE	1971	OCEANA, CRYSTAL-16N,16W,19	3712	2,222	11 L	--	DUNDEE		2	0	0	2	180	0	4,002	0	0	22	0
OF	CRYSTAL VALLEY, SEC. 19	TRAVERSE	1971	OCEANA, CRYSTAL-16N,16W,19	3712	1,689	2 L	--	DUNDEE	2,233	2	0	0	2	40	0	25,100	0	0	627	0
AOF	CRYSTAL VALLEY, SOUTH	TRAVERSE	1969	OCEANA, CRYSTAL-16N,16W,20	3712	1,739	1 L	--	TRAVERSE	1,740	1		1977		40	0	9,613	0	0	240	0
OF	CURRIE	DUNDEE	1936	ISABELLA, VERNON-16N,4W,5	3272	3,918	2 D	45.9	DUNDEE	4,042	2	0	0	2	40	564	211,448	0	0	5,286	0
AOF	DALLAS	TRAVERSE	1942	CLINTON, DALLAS-7N,4W,21	3713	2,482	2 L	--	DETROIT RIVER	2,934	3		1948		40	0	3,085	0	0	77	0
OF	DALTON	TRAVERSE	1940	MUSKEGON, DALTON-11N,16W,15	3557	1,851	5 L	40.0	DUNDEE	2,515	16	0	0	2	300	443	109,894	0	0	366	8
AOF	DAY	DUNDEE	1946	MONTCALM, DAY-11N,6W,36	3446A	3,337	2 L	--	DUNDEE		2		1954		20	0	16,239	0	0	811	0
AGF	DAY	MICHIGAN STRAY	1934	MONTCALM, DAY-11N,6W,1	3446A	1,352	4 S	--	MARSHALL	1,395	2		1944		80	0	0	0	8,664	0	0
AOF	DAY	TRAVERSE	1946	MONTCALM, DAY-11N,6W,25	3446A	2,900	2 L	43.0	DUNDEE	3,387	1		1967		10	0	3,095	0	0	309	0
OF	DAY, SEC. 13	DUNDEE	1971	MONTCALM, DAY-11N,6W,13	3446A	3,414	15 L	--	DUNDEE	3,475	1	0	0	1	20	949	27,966	0	0	1,398	13
GF	DEEP RIVER	BEREA	1936	ARENAC, DEEP RIVER-19N,4E,17	3580	1,490	10 S	--	SYLVANIA	4,311	12	0	0	3	1,520	0	0	0	1,642,008	0	DOMESTIC
OF	DEEP RIVER	DUNDEE	1944	ARENAC, DEEP RIVER-19N,4E,8	3580	2,795	145 D	35.8	RICHFIELD	4,258	106	0	0	31	1,060	41,549	27,090,709	0	0	25,557	8,678
OF	DEERFIELD	TRENTON	1920	MONROE, DUNDEE-6S,6E,19	3729	2,115	10 L	42.7	CAMBRIAN	3,250	47	0	0	20	450	2,738	753,848	0	0	1,675	7
AGF	DEMINGS LAKE	TRAVERSE	1968	LENAWEE, DOVER-7S,2E,27	3698	734	2 L	--	TRAVERSE	741	1		1979		40	0	0	0	0	0	0
AOF	DENNISON	TRAVERSE	1963	OTTAWA, POLKTON-8N,14W,21	3756	1,874	4 L	38.0	SALINA	3,202	15		1971		300	0	312,956	0	0	1,043	0
OF	DENTON CREEK	DET. RIV. SOUR ZONE	1982	ROSCOMMON, BACKUS-22N,02W,27	3963	4,812	239 D	--	DETROIT RIVER	5,330	1	1	0	1	40	628	628	0	0	16	3
AGF	DIAMOND CRYSTAL SALT	NIAGARAN	1927	ST. CLAIR, ST. CLAIR-5N,17E,31	3750	2,483	17 D	--	NIAGARAN	2,500	1		1931		40	0	0	0	139,174	0	0
OF	DIAMOND SPRINGS	SALINA-E ZONE	1958	ALLEGAN, HEATH-3N,14W,1	3556	2,389	21 D	25.5	SALINA		3	0	0	3	30	2,451	99,608	0	0	3,320	90

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICKNESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION TESTED: FORMATION OR POOL NAME	DEEPEST FORMATION TESTED: DEPTH IN FEET	NUMBER OF WELLS: TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	DIAMOND SPRINGS	TRAVERSE	1938	ALLEGAN, OVERISEL-4N,14W,36	3531	1,461	3 L	41.0	SALINA	2,651	56	0	0	6	420	335	1,016,529	0	0	2,420	100
OF	DORR	DETROIT RIVER	1955	ALLEGAN, SALEM-4N,13W,25	3501	2,082	6 D	38.0	NIAGARAN		14	0	0	3	240	621	76,329	0	0	318	12
GF	DORR	DETROIT RIVER	1957	ALLEGAN, DORR-4N,12W,33	3525	1,918	1 D	--	NIAGARAN	3,319	1	0	0	1	160	0	0	0	4,804	0	NO MARKET
OF	DORR	SALINA	1956	ALLEGAN, DORR-4N,12W,29	3707	2,922	7 D	17.0	NIAGARAN		20	2	0	10	620	3,528	341,613	11,422	1,517,255	550	94
OF	DORR	TRAVERSE	1938	ALLEGAN, DORR-4N,12W,29	3525	1,617	4 L	41.0	NIAGARAN	3,319	41	0	2	1	400	60	423,982	0	0	1,059	11
AGF	DORR, SEC. 17	"BEREA"	1951	ALLEGAN, DORR-4N,12W,17	3525	953	8 D	--	TRAVERSE	1,642	1		1967		40	0	0	0	0	0	0
GF	DORR, SEC. 21	"BEREA"	1940	ALLEGAN, DORR-4N,12W,21	3525	957	1 D	--	TRAVERSE	1,687	1	0	0	1	40	0	0	0	0	0	DOMESTIC
OF	DOUGLASS	DUNDEE	1945	MONTCALM, DOUGLASS-11N,7W,1	3667	3,400	2 L	47.1	DUNDEE	3,458	6	0	0	2	120	152	258,544	0	0	2,154	200
AGF	DOUGLASS	MICHIGAN STRAY	1943	MONTCALM, DOUGLASS-11N,7W,28	3667	1,190	5 S	--	DUNDEE	3,423	4		1951		640	0	0	0	188,507	0	0
AUF	DOUGLASS, SEC. 03	TRAVERSE	1954	MONTCALM, DOUGLASS-11N,7W,3	3667	3,025	8 L	--	DUNDEE	3,666	1		1956		20	0	3,155	0	0	157	0
OF	DOVER 12-31N-02W	SALINA-NIAGARAN	1974	OTSEGO, DOVER-31N,2W,12	3810	4,932	5 D	43.4	NIAGARAN	5,044	1	0	0	1	80	45,876	370,254	111,715	798,586	4,628	1
OF	DOVER 21-31N-02W	SALINA-NIAGARAN	1975	OTSEGO, DOVER-31N,2W,21	3810	5,210	10 D	41.2	NIAGARAN	5,527	2	1	0	1	80	4,219	43,566	405	2,467	544	0
OF	DOVER 22-31N-02W	SALINA-NIAGARAN	1975	OTSEGO, DOVER-31N,2W,22	3810	5,223	10 D	41.1	NIAGARAN	5,531	2	1	0	1	80	11,691	64,962	655	3,124	812	30
OF	DOVER 22-31N-02W P/A	NIAGARAN	1977	OTSEGO, DOVER-31N,2W,23	3810	5,119	9 D	--	NIAGARAN	5,334	2	0	1	1	160	9,853	50,185	0	9,806	313	20
OF	DOVER 22-31N-02W P/B	NIAGARAN	1982	OTSEGO, DOVER-31N,02W,22	3810	5,076	34 D	--	NIAGARAN	5,225	1	1	0	1	80	1,284	1,284	0	0	16	2
AOF	DOVER 27-31N-02W	A-1 CARBONATE	1975	OTSEGO, DOVER-31N,2W,27	3810	5,179	49 D	--	NIAGARAN	5,564	1		1979		80	0	16,378	0	0	204	0
OF	DOVER 33-31N-02W	NIAGARAN	1974	OTSEGO, DOVER-31N,2W,33	3810	5,413	9 D	43.6	NIAGARAN	5,678	3	0	0	3	240	42,532	930,080	124,526	1,204,644	3,875	322
OF	DOVER 33-31N-02W P/A	NIAGARAN	1981	OTSEGO, DOVER-31N,2W,33	3810	5,400	8 D	41	NIAGARAN	5,605	1	0	0	1	80	7,502	10,578	0	0	132	4
OF	DOVER 35-31N-02W	NIAGARAN	1973	OTSEGO, DOVER-31N,2W,35	3810	5,475	41 D	42.3	NIAGARAN	5,810	3	0	0	3	240	34,021	594,896	27,818	568,181	2,478	3
OF	DOVER 36-31N-02W	NIAGARAN	1973	OTSEGO, DOVER-31N,2W,36	3810	5,485	135 D	42.7	NIAGARAN	5,835	3	0	0	3	240	28,276	975,802	48,844	981,058	4,065	18
GF	DOVER, SEC. 13	ANTRIM	1977	OTSEGO, DOVER-31N,2W,13	3810	1,134	104 SH	--	NIAGARAN	5,451	1	0	0	1	80	0	0	0	0	0	0
OF	DOWAGIAC CREEK	TRAVERSE	1982	CASS, WAYNE-5S,15W,25	3710	972	2 L	27	TRAVERSE	974	1	1	0	1	80	368	368	0	0	5	0
OF	DUNNINGVILLE	TRAVERSE	1950	ALLEGAN, HEATH-3N,14W,22	3556	1,435	3 L	38.0	TRAVERSE	1,438	5	0	0	1	50	308	122,057	0	0	2,441	10
AOF	DWIGHT	DETROIT RIVER	1945	HURON, DWIGHT-18N,13E,21	3694	2,862	4 L	36.2	SYLVANIA	3,290	1		1972		40	0	41,165	0	0	1,029	0
OF	EAST BAY 09-26N-10W	NIAGARAN	1982	GD. TRAVERSE, EAST BAY-26N,10W,09	3829	6,250	150 D	46	NIAGARAN	6,500	2	2	0	2	160	18,214	18,214	5,318	5,318	114	0
OF	EAST BAY 10-26N-10W	NIAGARAN	1980	GD. TRAVERSE, EAST BAY-26N,10W,10	3829	6,174	13 D	44.3	NIAGARAN	6,328	3	1	0	3	240	172,009	321,673	268,998	504,806	1,340	43
OF	EAST BAY 11-26N-10W	NIAGARAN	1976	GD. TRAVERSE, EAST BAY-26N,10W,11	3829	6,187	11 D	46.2	NIAGARAN	6,400	3	0	0	3	240	94,910	471,591	356,624	1,274,665	1,964	16
OF	EAST BAY 12-26N-10W	NIAGARAN	1980	GD. TRAVERSE, EAST BAY-26N,10W,12	3829	6,288	16 D	--	NIAGARAN	6,447	1	0	0	1	80	45,575	107,064	162,307	239,076	1,338	54
OF	EAST BAY 12-26N-10W P/A	NIAGARAN	1982	GD. TRAVERSE, EAST BAY-26N,10W,12	3829	6,782	38 D	49	NIAGARAN	6,840	1	1	0	1	80	876	876	0	0	11	0
OF	EAST BAY 14-26N-10W	SALINA-NIAGARAN	1979	GD. TRAVERSE, EAST BAY-26N,10W,14	3829	6,069	33 D	44.6	NIAGARAN	6,400	2	0	0	2	160	12,450	32,540	306,668	705,119	203	22
OF	EAST BAY 16-26N-10W	NIAGARAN	1982	GD. TRAVERSE, EAST BAY-26N,10W,16	3829	5,912	8 D	--	NIAGARAN	6,116	1	1	0	1	80	6,277	6,277	0	0	79	0
OF	EAST BAY 17-26N-10W	NIAGARAN	1977	GD. TRAVERSE, EAST BAY-26N,10W,17	3829	5,716	18 D	42.7	NIAGARAN	6,020	5	0	0	5	360	114,094	783,769	189,552	867,312	2,177	583
OF	EAST BAY 25-27N-10W	SALINA-NIAGARAN	1978	GD. TRAVERSE, EAST BAY-27N,10W,25	3829	5,930	84 D	33.7	NIAGARAN	6,062	1	0	0	1	80	22,859	109,762	12,837	48,434	1,372	32
GF	EAST CHINA	NIAGARAN	1969	ST. CLAIR, EAST CHINA-4N,16E,25	3741	2,344	19 D	--	NIAGARAN	2,363	2	0	0	2	80	3,042	19,396	265	19,101	242	24
GF	EAST CHINA, SEC. 13	NIAGARAN	1979	ST. CLAIR, EAST CHINA-4N,16E,13	3741	2,428	4 D	--	NIAGARAN	2,490	1	0	0	1	40	0	0	10,156	10,156	0	0
AOF	EAST NORWICH	DUNDEE	1942	MISSAUKEE, NORWICH-24N,5W,14	3584	3,082	4 L	44.2	BASS ISLANDS		1		1947			SEE	EAST	NORWICH	RICHFIELD		0
OF	EAST NORWICH	RICHFIELD	1942	MISSAUKEE, NORWICH-24N,5W,11	3584	4,390	14 D	40.9	BASS ISLANDS		193	40	0	138	5,600	622,890	13,230,990	588,990	12,456,656	2,362	3,762
AUF	EAST NORWICH	TRAVERSE	1944	MISSAUKEE, NORWICH-24N,5W,16	3584	2,410	1 L	--	BASS ISLANDS	5,520	1		1944			SEE	EAST	NORWICH	RICHFIELD		0
OF	EATON 25-02N-04W	NIAGARAN	1981	EATON, EATON-2N,4W,25	3818	3,881	4 D	34.7	NIAGARAN	4,070	1	0	0	1	80	0	139	0	0	1	0
OF	EATON 35-02N-04W	NIAGARAN	1982	EATON, EATON-02N,04W,35	3818	3,734	51 D	37	NIAGARAN	3,885	1	1	0	1	80	14,615	14,615	37,491	37,491	183	35
GF	EATON RAPIDS 07-02N-03W	NIAGARAN	1977	EATON, EATON RAPIDS-2N,3W,7	3817	4,012	48 D	--	NIAGARAN	4,362	1	0	0	1	80	0	0	48,067	1,084,286	0	0
GF	EATON RAPIDS 08-02N-03W	NIAGARAN	1974	EATON, EATON RAPIDS-2N,3W,8	3817	3,812	213 D	73	NIAGARAN	4,230	1	0	0	1	80	897	3,958	384,665	1,532,604	49	0
GF	EATON RAPIDS 08-02N-03W P/A	NIAGARAN	1975	EATON, EATON RAPIDS-2N,3W,8	3817	3,951	91 D	46.6	NIAGARAN	4,152	1	0	0	1	80	3	3,435	11,846	1,010,542	47	0
OF	EATON RAPIDS 16-02N-03W	NIAGARAN	1980	EATON, EATON RAPIDS-2N,3W,16	3817	4,006	8 D	44.1	NIAGARAN	4,332	2	0	0	2	160	40,829	47,937	169,439	203,362	299	0
GF	EATON RAPIDS 17-02N-03W	SALINA-NIAGARAN	1973	EATON, EATON RAPIDS-2N,3W,17	3817	3,985	79 D	42.0	NIAGARAN	4,316	2	0	0	1	160	423	3,939	227,090	2,067,767	24	0
G-C	EATON RAPIDS 17-02N-03W P/A	NIAGARAN	1979	EATON, EATON RAPIDS-2N,3W,17	3817	4,062	4 D	48.5	NIAGARAN	4,371	1	0	0	1	80	1,317	9,740	74,907	761,469	121	1
OF	EATON RAPIDS 17-02N-03W P/B	NIAGARAN	1980	EATON, EATON RAPIDS-2N,3W,17	3817	4,072	10 D	36.9	NIAGARAN	4,385	1	0	0	1	80	7,803	30,158	40,441	151,380	376	36
OF	EATON RAPIDS 20-02N-03W	SALINA-NIAGARAN	1974	EATON, EATON RAPIDS-2N,3W,20	3817	3,940	14 D	--	NIAGARAN	4,323	5	0	0	5	400	51,469	411,124	292,845	1,484,272	1,027	92
GF	EATON RAPIDS 22-02N-03W	NIAGARAN	1982	EATON, EATON RAPIDS-02N,03W,22	3817	3,980	10 D	--	NIAGARAN	4,108	1	1	0	1	80	118	118	32,748	32,748	2	0
OF	EATON RAPIDS 25-02N-03W	NIAGARAN	1976	EATON, EATON RAPIDS-2N,3W,25	3817	4,010	6 D	--	NIAGARAN	4,270	1	0	0	1	160	1,979	15,923	392,159	2,209,455	99	15
OF	EATON RAPIDS 28-02N-03W	SALINA-NIAGARAN	1974	EATON, EATON RAPIDS-2N,3W,28	3817	3,858	9 D	--	NIAGARAN	4,056	2	0	0	2	160	18,383	89,944	44,387	162,349	562	1
OF	EATON RAPIDS 28-02N-03W P/A	NIAGARAN	1980	EATON, EATON RAPIDS-2N,3W,28	3817	3,914	6 D	44	NIAGARAN	4,006	1	0	0	1	160	9,255	16,131	108,114	175,434	100	0
GF	EATON RAPIDS 28-02N-03W P/B	SALINA-NIAGARAN	1981	EATON, EATON RAPIDS-2N,3W,28	3817	3,871	56 D	--	NIAGARAN	4,065	1	0	0	1	80	297	297	81,931	81,931	3	0
UF	EATON RAPIDS 32-02N-03W	NIAGARAN	1975	EATON, EATON RAPIDS-2N,3W,32	3817	3,799	10 D	36.7	NIAGARAN	3,917	1	0	0	1	160	15,785	214,270	72,417	351,280	1,339	0
OF	EATON RAPIDS 32-02N-03W P/A	NIAGARAN	1977	EATON, EATON RAPIDS-2N,3W,32	3817	3,787	10 D	46.9	NIAGARAN	3,925	1	0	0	1	80	30	4,548	33,868	968,953	56	0
GF	EATON RAPIDS 32-02N-03W P/B	SALINA-NIAGARAN	1979	EATON, EATON RAPIDS-2N,3W,32	3817	3,751	116 D	--	NIAGARAN	3,997	1	0	0	1	80	2,056	2,056	234,365	687,339	25	0
G-C	EATON RAPIDS 33-02N-03W	NIAGARAN	1976	EATON, EATON RAPIDS-2N,3W,33	3817	3,715	111 D	62.8	NIAGARAN	3,935	1	0	0	1	80	0	1,029	152,019	1,048,524	12	0
OF	EATON RAPIDS 33-02N-03W P/A	NIAGARAN	1981	EATON, EATON RAPIDS-2N,3W,33	3817	3,764	22 D	23.5	NIAGARAN	3,897	1	0	0	1	80	37,645	38,159	27,868	27,868	476	0
OF	EATON RAPIDS 35-02N-03W	SALINA-NIAGARAN	1972	EATON, EATON RAPIDS-2N,3W,35	3817	3,750	30 D	--	NIAGARAN	4,210	2	0	0	2	120	20,375	282,458	52,776	408,275	2,353	10
G-C	EATON RAPIDS 36-02N-03W	NIAGARAN	1971	EATON, EATON RAPIDS-2N,3W,36	3817	3,740	55 D	47	NIAGARAN	4,305	7	0	0	6	1,120	0	17,616	429,013	13,979,552	15	0
OF	ECHO LAKE	RICHFIELD	1982	OSCODA, BIG CREEK-25N,02E,23	3943	4,197	40 D	40	DETROIT RIVER	4,268	3	3	0	3	120	3,057	3,057	0	0	26	7
OF	EDEN	DUNDEE	1948	MASON, EDEN-17N,16W,26	3671	2,240	2 L	45.3	CAMBRIAN		38	0	0	27	380	11,446	SEE	EDEN	REED CITY-	FOR CUM 0	1,662
OF	EDEN	REED CITY	1948	MASON, EDEN-17N,16W,25	3671	2,345	8 D	42.8	CAMBRIAN		5	0	0	2	40	0	3,111,895	0	330,378	77,479	2
OF	EDEN	TRAVERSE	1948	MASON, EDEN-17N,16W,26	3671	1,679	3 L	34.5	CAMBRIAN	7,249	10	0	0	5	90	1,258	SEE	EDEN	REED CITY-	FOR CUM 0	300
GF	EDEN	TRAVERSE	1958	MASON, EDEN-17N,16W,26	3671	1,960	7 L	—	CAMBRIAN		1	0	0	1	160	0	0	0	SHUT-IN	0	0
OF	EDENVILLE	DUNDEE	1938	MIDLAND, EDENVILLE-16N,1W,27	3519	3,790	8 L	41.0	DUNDEE	3,962	36	0	0	1	370	12,222	1,388,091	0	0	3,751	10
OF	EDENVILLE, SEC. 05	DETROIT RIVER	1981	MIDLAND, EDENVILLE-16N,1W,5	3519	4,268	12 D	38	DETROIT RIVER	4,280	1	0	0	1	40	0	8,167	0	0	204	400
GF	EDENVILLE, SEC. 05	SAGINAW FM.	1956	MIDLAND, EDENVILLE-16N,1W,5	3519	382	12 S	--	DUNDEE	4,028	3	0	0	1	160	0	0	0	0	0	0
OF	EDENVILLE, SEC. 15	BEREA	1981	MIDLAND, EDENVILLE-16N,1W,15	3519	2,473	24 S	--	DUNDEE	3,901	5	4	0	5	240	459	459	0	0	1	18
OF	EDMORE	TRAVERSE	1933	MONTCALM, HOME-12N,6W,10	3467	3,102	4 L	43.2	DUNDEE	3,613	35	0	0	7	500	5,013	1,464,912	0	1,089,013	2,929	700
GF	EDMORE-RICHLAND	MICHIGAN STRAY	1936	MONTCALM, RICHLAND-12N,5W,17	3454	1,300	8 S	--	DUNDEE	3,700	47	0	0	8	6,800	0	0	0	9,135,821	0	0
OF	EDWARDS	DUNDEE	1951	OGEMAW, EDWARDS-21N,1E,15	3652	3,362	10 L	--	DUNDEE	3,406	4	0	0	3	90	492	42,427	0	0	471	250
AGF	EGELSTON	"BEREA"	1951	MUSKEGON, EDGELSTON-10N,15W,15	3557	1,120	5 D	--	DUNDEE	2,282	7		1966		1,120	0	0	0	296,919	0	0
AGF	ELBA	MICHIGAN STRAY	1928	GRATIOT, ELBA-9N,1W,9	3447	670	10 S	--	DUNDEE	3,044	10		1957		520	0	0	0	250,979	0	0
AOF	ELBA	TRAVERSE	1927	GRATIOT, ELBA-9N,1W,22	3447	2,440	2 L	47.0	DUNDEE		8		1962		90	0	42,925	0	0	476	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICKNESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION TESTED: FORMATION OR POOL NAME	DEEPEST FORMATION TESTED: DEPTH IN FEET	NUMBER OF WELLS: TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	ELBRIDGE	TRAVERSE	1961	OCEANA, ELBRIDGE-15N,16W,26	3743	2,112	2 L	39.4	REED CITY	2,725	19	0	0	3	380	231	415,067	0	SHUT-IN	1,092	225
AOF	ELKLAND	DUNDEE	1946	TUSCOLA, ELKLAND-14N,11E,31	3576	2,653	14 L	--	SYLVANIA	3,735	2		1947		20	0	1,546	0	0	77	0
OF	ELMWOOD	DUNDEE	1945	TUSCOLA, ELMWOOD-14N,10E,21	3686	2,740	8 L	31.3	BOIS BLANC	3,945	10	0	0	8	90	1,524	110,442	0	0	1,227	12
GF	ENSLEY	MARSHALL	1958	NEWAYGO, ENSLEY-11N,11W,6	3679	826	5 S	--	DETROIT RIVER	3,018	8	0	0	1	1,280	0	0	0	924,759	0	0
AOF	ENSLEY	TRAVERSE	1954	NEWAYGO, ENSLEY-11N,11W,7	3679	2,439	2 L	--	DETROIT RIVER		6		1959		120	0	70,415	0	0	586	0
OF	ENTERPRISE	RICHFIELD	1943	MISSAUKEE, ENTERPRISE-23N,5W,11	3590	4,405	15 D	41.8	RICHFIELD	4,625	60	14	0	43	1,760	236,731	4,056,568	116,711	1,955,539	2,304	1,047
GF	ENTERPRISE, SEC. 32	MICHIGAN STRAY	1953	MISSAUKEE, ENTERPRISE-23N,5W,32	3590	1,986	5 S	--	DETROIT RIVER	4,200	2	0	1	1	320	0	0	0	0	0	DOMESTIC
OF	ENTRICAN	DUNDEE	1967	MONTCALM, DOUGLASS-11N,7W,21	3454	3,312	2 D	--	DUNDEE		8	5	0	6	240	40,627	49,707	0	0	207	130
AOF	ENTRICAN	TRAVERSE	1966	MONTCALM, DOUGLASS-11N,7W,21	3454	2,870	4 L	--	DUNDEE	3,426	1		1968		40	SEE	ENTRICAN	DUNDEE	0	0	0
OF	ESSEXVILLE	DETROIT RIVER	1981	BAY, HAMPTON-14N,6E,21	3597	3,451	369 D	--	DETROIT RIVER	3,915	4	0	0	4	520	0	352	0	0	0	0
OF	ESSEXVILLE	DUNDEE	1944	BAY, HAMPTON-14N,6E,7	3597	2,835	17 L	35.3	SYLVANIA	4,130	50	0	0	41	1,730	27,292	3,749,231	0	3,249	2,167	51
AOF	EVART	DUNDEE	1942	OSCEOLA, OSCEOLA-18N,8W,23	3579	3,755	6 L	46.3	SYLVANIA		29		1970		1,100	0	3,812,127	0	0	3,465	0
AGF	EVART	MICHIGAN STRAY	1941	OSCEOLA, OSCEOLA-18N,8W,27	3579	1,410	7 S	--	SYLVANIA	5,292	33		1974		5,120	0	0	0	4,993,636	0	0
GF	EVART	RICHFIELD	1980	OSCEOLA, OSCEOLA-18N,8W,27	3579	4,881	11 D	--	SYLVANIA		1	0	0	1	40	600	600	0	0	15	2
AOF	EXCELSIOR	TRAVERSE	1950	KALKASKA, EXCELSIOR-27N,6W,11	3794	2,003	2 L	33.4	TRAVERSE	2,136	1		1970		10	0	10,455	0	0	1,045	0
AOF	EXCELSIOR 02-27N-06W	NIAGARAN	1980	KALKASKA, EXCELSIOR-27N,6W,2	3794	7,247	47 D	--	NIAGARAN	7,373	1		1980		80	0	171	0	0	2	0
G-C	EXCELSIOR 03-27N-06W	NIAGARAN	1973	KALKASKA, EXCELSIOR-27N,6W,3	3794	7,211	10 D	64.0	NIAGARAN	7,402	3	1	0	3	320	1,470	80,474	464,659	5,428,917	251	1
G-C	EXCELSIOR 03-27N-06W P/A	NIAGARAN	1973	KALKASKA, EXCELSIOR-27N,6W,3	3794	6,952	139 D	71.5	NIAGARAN	7,346	1	0	0	1	160	0	1	0	348	0	0
G-C	EXCELSIOR 07-27N-06W	NIAGARAN	1973	KALKASKA, EXCELSIOR-27N,6W,7	3794	6,987	27 D	63.8	NIAGARAN	7,232	1	0	0	1	80	5	8,956	7,160	554,905	111	0
G-C	EXCELSIOR 09-27N-06W	NIAGARAN	1972	KALKASKA, EXCELSIOR-27N,6W,7	3794	7,034	47 D	--	NIAGARAN	7,526	5	0	0	4	480	4,068	52,845	914,944	4,405,792	110	1
AOF	EXCELSIOR 10-27N-06W	DETROIT RIVER	1972	KALKASKA, EXCELSIOR-27N,6W,10	3794	3,607	20 D	--	NIAGARAN	7,399	1		1974		80	0	2,053	0	0	25	0
G-C	EXCELSIOR 17-27N-06W	NIAGARAN	1973	KALKASKA, EXCELSIOR-27N,6W,17	3794	7,165	53 D	61.5	NIAGARAN	7,365	1	0	0	1	160	2,114	22,216	166,119	700,253	138	1
G-C	EXCELSIOR 19-27N-06W	NIAGARAN	1975	KALKASKA, EXCELSIOR-27N,6W,19	3794	7,091	37 D	64.6	NIAGARAN	7,288	1	0	0	1	80	326	3,137	32,185	213,325	39	1
GC	EXCELSIOR 19-27N-06W P/A	NIAGARAN	1976	KALKASKA, EXCELSIOR-27N,6W,19	3794	7,165	68 D	60.4	NIAGARAN	7,285	1	0	0	1	80	848	16,610	176,908	1,537,060	207	0
OF	FALMOUTH	DUNDEE	1978	MISSAUKEE, AETNA-22N,6W,30	3588	3,851	2 D	45	PRAIRIE DU CHIEN		5	0	0	5	200	19,227	SEE	FALMOUTH	RICHFIELD	0	1,270
GF	FALMOUTH	MICHIGAN STRAY	1962	MISSAUKEE, AETNA-22N,6W,31	3588	1,279	3 S	--	PRAIRIE DU CHIEN	10,810	8	0	0	1	1,280	0	0	0	1,124,871	0	DOMESTIC
GF	FALMOUTH	PRAIRIE DU CHIEN	1981	MISSAUKEE, REEDER-22N,7W,36	3876	10,450	246 S	--	PRAIRIE DU CHIEN		2	1	0	2	400	0	0	1,180,492	1,180,492	0	17
OF	FALMOUTH	RICHFIELD	1977	MISSAUKEE, AETNA-22N,6W,31	3588	5,111	32 D	--	PRAIRIE DU CHIEN		25	2	0	25	1,000	88,363	796,218	321,989	1,707,422	776	94
GF	FALMOUTH	TRAVERSE	1977	MISSAUKEE, AETNA-22N,6W,31	3588	3,166	21 L	--	PRAIRIE DU CHIEN		1	0	0	1	160	0	0	0	0	0	0
AOF	FERRY	TRAVERSE	1960	OCEANA, FERRY-14N,16W,21	3735	1,949	2 L	41.0	REED CITY	2,561	14		1970		280	0	164,263	0	0	586	0
GF	FERRY, SEC. 25	"BEREA"	1961	OCEANA, FERRY-14N,16W,25	3455	1,310	5 D	--	REED CITY	2,650	1	0	0	1	40	0	0	0	DOMESTIC	0	0
G-C	FILER 02-21N-17W	NIAGARAN	1979	MANISTEE, FILER-21N,17W,2	3832	3,731	44 ?	--	NIAGARAN	4,225	3	0	0	3	320	15,015	19,132	1,646,959	2,360,682	59	0
GF	FILLMORE	SALINA A-1 CARBONATE	1959	OTTAWA, HOLLAND-5N,15W,34	3591	2,792	16 D	--	NIAGARAN							SEE	FILLMORE	A-2	CARBONATE	0	0
GF	FILLMORE	SALINA A-2 CARBONATE	1959	OTTAWA, HOLLAND-5N,15W,34	3591	2,632	16 D	--	NIAGARAN		11	0	0	6	1,760	0	0	133,093	5,448,369	0	160
OF	FILLMORE	TRAVERSE	1940	OTTAWA, HOLLAND-5N,15W,34	3591	1,516	3 L	41.1	NIAGARAN	3,045	63	0	0	4	770	2,110	991,078	0	0	1,287	99
OF	FOREST 14-33N-01E	NIAGARAN	1976	CHEBOYGAN, FOREST-33N,1E,14	3862	3,671	13 D	42.9	NIAGARAN	4,069	6	0	0	6	480	581	4,837	0	0	10	0
OF	FOREST 22-33N-01E	NIAGARAN	1982	CHEBOYGAN, FOREST-33N,01E,22	3862	4,029	28 D	43	NIAGARAN	4,442	1	1	0	1	80	277	277	0	0	4	0
OF	FOREST 34-33N-01E	NIAGARAN	1979	CHEBOYGAN, FOREST-33N,1E,34	3862	4,158	88 D	--	NIAGARAN	4,480	1	0	0	1	80	0	4,597	0	0	57	0
AOF	FOREST RIVER	TRAVERSE	1965	OCEANA, COLFAX-16N,15W,12	3455	1,954	1 L	--	DUNDEE	2,598	1		1965		40	0	781	0	0	19	0
G-C	FORK	DETROIT RIVER	1982	MECOSTA, CHIPPEWA-16N,08W,12	3601	3,905	34 D	--	DETROIT RIVER	5,100	1	1	0	1	40	0	0	0	0	0	0
AOF	FORK	DUNDEE	1942	MECOSTA, FORK-16N,7W,5	3587	3,845	8 L	49.0	BOIS BLANC	5,294	64		1969		2,700	0	7,777,026	0	0	2,880	0
AOF	FORK	RICHFIELD	1945	MECOSTA, FORK-16N,7W,2	3587	5,001	11 D	54.8	BOIS BLANC		1		1966			SEE	FORK	DUNDEE	849,775	0	0
AGF	FORK, EAST	MICHIGAN STRAY	1942	MECOSTA, FORK-16N,7W,11	3587	1,480	5 S	--	DUNDEE	3,865	4		1946		640	0	0	0	104,762	0	0
OF	FORK, NORTH	DUNDEE	1951	OSCEOLA, ORIENT-17N,7W,33	3561	3,788	3 D	45.8	DUNDEE		6	0	0	1	120	0	153,661	0	SHUT-DOWN	1,281	0
GF	FORK, NORTH	MICHIGAN STRAY	1956	OSCEOLA, ORIENT-17N,7W,33	3561	1,433	19 S	--	DUNDEE	3,982	1	0	0	1	160	0	0	4,318	115,365	0	0
GF	FORK, WEST	MICHIGAN STRAY	1943	MECOSTA, FORK-16N,7W,6	3587	1,490	5 S	--	SYLVANIA	5,198	17	0	0	2	2,880	0	0	0	2,453,670	0	DOMESTIC
AGF	FORWARD	MICHIGAN STRAY	1961	MISSAUKEE, RIVERSIDE-21N,7W,25	3571	1,393	7 S	--	DETROIT RIVER	5,225	6		1969		960	0	0	0	476,757	0	0
GF	FOSTORIA	BEREA	1970	TUSCOLA, WATERTOWN-10N,9E,14	3576	1,514	16 S	--	RICHFIELD	3,267	1	0	0	0	160	WELL	CONVERTED	TO	BRINE	DISPOSAL	
OF	FOSTORIA	DETROIT RIVER	1981	TUSCOLA, WATERTOWN-10N,9E,14	3576	3,103	3 D	--	DETROIT RIVER	3,355	2	1	0	2	200	3,088	3,481	0	0	17	216
AOF	FOUNTAIN	REED CITY	1970	MASON, SHERMAN-19N,16W,12	3627	2,442	6 D	--	REED CITY	2,448	1		1982		40	0	170	0	SHUT-IN	4	0
GF	FOWLERVILLE	SALINA-NIAGARAN	1961	LIVINGSTON, HANDY-3N,3E,2	3873	3,880	45 D	--	PRAIRIE DU CHIEN	5,695	18	0	1	13	2,560	0	6,974	223,966	7,522,130	2	1
OF	FRANKLIN	PRAIRIE DU CHIEN	1982	LENAWEE, FRANKLIN-05S,03E,36	3698	3,976	8 D	47	PRAIRIE DU CHIEN	4,220	1		1982		40	139	304	0	0	4	40
OF	FREDERIC 01-28N-04W	NIAGARAN	1975	CRAWFORD, FREDERIC-28N,4W,1	3811	6,604	30 D	49.8	NIAGARAN	6,880	2	0	0	2	160	0	588	0	172	3	0
OF	FREDERIC 02-28N-04W	NIAGARAN	1973	CRAWFORD, FREDERIC-28N,4W,2	3811	6,390	92 D	47.0	NIAGARAN	7,019	4	1	1	3	240	57,877	722,446	161,212	1,265,869	3,010	0
OF	FREDERIC 04-28N-04W	NIAGARAN	1974	CRAWFORD, FREDERIC-28N,4W,4	3811	6,923	20 D	45.0	NIAGARAN	7,265	2	0	0	2	160	13,545	392,255	78,568	945,760	2,451	8
OF	FREDERIC 07-28N-04W	NIAGARAN	1973	CRAWFORD, FREDERIC-28N,4W,7	3811	7,000	10 D	45.6	NIAGARAN	7,161	1	0	0	1	80	8,452	155,179	24,730	414,195	1,939	2
OF	FREDERIC 08-28N-04W	NIAGARAN	1974	CRAWFORD, FREDERIC-28N,4W,8	3811	6,740	30 D	43.4	NIAGARAN	7,164	3	0	0	3	240	112,236	1,060,038	296,103	2,146,429	4,416	5
OF	FREDERIC 10-28N-04W	NIAGARAN	1971	CRAWFORD, FREDERIC-28N,4W,10	3811	6,964	99 D	45.0	NIAGARAN	7,350	6	1	0	6	240	337,247	2,123,639	262,098	3,621,020	8,848	795
OF	FREDERIC 11-28N-04W	NIAGARAN	1976	CRAWFORD, FREDERIC-28N,4W,11	3811	6,963	75 D	47.4	NIAGARAN	7,127	3	0	0	3	240	178,671	1,519,684	381,339	2,243,108	6,332	0
G-C	FREDERIC 13-28N-04W	NIAGARAN	1972	CRAWFORD, FREDERIC-28N,4W,13	3811	6,789	427 D	68.4	NIAGARAN	7,470	1	0	0	1	160	4,838	20,943	79,517	285,472	130	0
OF	FREDERIC 13-28N-04W P/A	NIAGARAN	1981	CRAWFORD, FREDERIC-28N,4W,13	3811	7,240	13 D	45.3	NIAGARAN	7,395	1	0	0	1	160	0	0	0	0	0	0
OF	FREDERIC 16-28N-04W	NIAGARAN	1976	CRAWFORD, FREDERIC-28N,4W,16	3811	7,254	19 D	46.1	NIAGARAN	7,483	1	0	0	1	80	0	36,091	0	136,034	451	0
OF	FREDERIC 16-28N-04W P/A	NIAGARAN	1980	CRAWFORD, FREDERIC-28N,4W,16	3811	7,300	75 D	46.3	NIAGARAN	7,466	1	0	0	1	80	37,677	187,401	150,090	397,166	2,342	975
OF	FREDERIC 20-28N-04W	NIAGARAN	1981	CRAWFORD, FREDERIC-28N,4W,20	3811	7,346	60 D	46	NIAGARAN	7,431	1	0	0	1	80	2,001	3,597	96,940	125,784	44	0
G-C	FREDERIC 22-28N-04W	NIAGARAN	1973	CRAWFORD, FREDERIC-28N,4W,22	3811	6,950	289 D	65.5	NIAGARAN	7,615	2	0	0	2	360	84,958	196,451	157,679	451,348	545	0
G-C	FREDERIC 24-28N-04W	NIAGARAN	1977	CRAWFORD, FREDERIC-28N,4W,24	3811	6,991	293 D	--	NIAGARAN	7,577	1	0	0	1	80	0	522	0	0	6	0
G-C	FREDERIC 27-28N-04W	NIAGARAN	1977	CRAWFORD, FREDERIC-28N,4W,27	3811	6,912	108 D	--	NIAGARAN	7,441	1	0	0	1	160	10,343	11,292	149,323	149,323	70	0
G-C	FREDERIC 29-28N-04W	NIAGARAN	1972	CRAWFORD, FREDERIC-28N,4W,29	3811	7,420	71 D	50.0	NIAGARAN	7,578	5	0	0	4	640	11,632	172,912	402,304	3,837,391	270	0
OF	FREDRIC 21-28N-04W	NIAGARAN	1982	CRAWFORD, FREDRIC-28N,04W,21	3811	7,388	12 D	50	NIAGARAN	3,520	1	1	0	1	80	15,605	15,605	68,201	68,201	195	0
AGF	FREEDOM	DUNDEE	1971	WASHTENAW, FREEDOM-3S,4E,8	3662	1,198	28 L	--	CAMBRO-ORDOVICIAN				1973		120	0	0	0	0	0	0
AGF	FREEDOM	TRAVERSE	1971	WASHTENAW, FREEDOM-3S,4E,8	3662	1,038	24 L	--	CAMBRO-ORDOVICIAN	4,691	3		1973		120	0	0	0	0	0	0
OF	FREEDOM	TRENTON	1954	WASHTENAW, FREEDOM-3S,4E,8	3662	3,963	20 D	43.5	CAMBRO-ORDOVICIAN		1	0	0	1	40	706	8,257	0	0	206	1
AOF	FREEMAN, SEC. 15	DUNDEE	1963	CLARE, FREEMAN-18N,6W,15	3532	3,894	8 L	41.0	DUNDEE	3,902	1		1965		40	0	736	0	0	18	0
OF	FREEMAN-LINCOLN	DUNDEE	1980	CLARE, LINCOLN-18N,5W,18	3898	3,975	2 D	--	AMHERSTBURG	5,320	3	0	0	3	120	6,688	27,090	0	0	225	450
OF	FREEMAN-LINCOLN	RICHFIELD	1980	CLARE, LINCOLN-18N,5W,20	3898	5,173	71 D	45	AMHERSTBURG		1	0	0	1	40	2,983	11,939	0	0	298	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	FREEMAN-REDDING	DUNDEE	1938	CLARE, FREEMAN-18N, 6W, 4	3532	3,885	19 L	44.4	SYLVANIA	5,462	170	0	0	17	2,800	22,260	16,907,866	0	1,945,432	6,038	2,575
AOF	FREEPORT	TRAVERSE	1949	BARRY, CARLTON-4N, 8W, 6	3551	2,031	3 L	--	DETROIT RIVER	2,430	1		1951		10	0	19,229	0	0	1,922	0
AOF	FREMONT	BEREA	1937	SAGINAW, FREMONT-11N, 2E, 5	3578	2,122	3 S	--	DUNDEE	3,150	1		1941		10	SEE	FREEMONT	DUNDEE			0
AOF	FREMONT	DUNDEE	1938	ISABELLA, FREMONT-13N, 5W, 5	3477	3,696	4 D	--	DUNDEE		2		1956		30	0	3,045	0	0	101	0
AOF	FREMONT	DUNDEE	1946	SAGINAW, FREMONT-11N, 2E, 3	3578	3,125	1 L	--	DUNDEE		1		1947		10	0	2,000	0	0	200	0
AGF	FREMONT	MICHIGAN STRAY	1941	ISABELLA, FREMONT-13N, 5W, 21	3477	1,235	4 D	--	DUNDEE	3,700	5		1956		800	0	0	0	388,957	0	0
GF	FREMONT, SEC. 32	MICHIGAN STRAY	1958	ISABELLA, FREMONT-13N, 5W, 32	3477	1,264	6 S	--	DUNDEE	3,619	1	0	0	1	160	0	0	0	27,677	0	0
AOF	FREMONT, SEC. 32	TRAVERSE	1957	ISABELLA, FREMONT-13N, 5W, 32	3477	3,058	2 L	--	DUNDEE		1		1958		10	0	892	0	0	89	0
AOF	GARFIELD	DETROIT RIVER	1946	CLARE, GARFIELD-17N, 6W, 18	3496	5,038	10 S	--	SYLVANIA	5,307	1		1948		40	0	13,769	0	546,527	344	0
AOF	GENEVA	DUNDEE	1935	MIDLAND, GENEVA-15N, 2W, 19	3098	3,671	2 L	--	DETROIT RIVER	3,898	8		1969		70	0	63,143	0	0	902	0
OF	GENEVA	TRAVERSE	1940	VAN BUREN, GENEVA-1S, 16W, 29	3586	1,042	2 L	31.5	TRENTON	2,950	77	2	0	3	830	424	495,487	0	0	596	480
OF	GENEVA, SEC. 04	DUNDEE	1975	MIDLAND, GENEVA-15N, 2W, 4	3098	3,718	32 L	--	DUNDEE	3,795	1	0	0	1	40	827	9,128	0	0	228	1
OF	GENEVA, SEC. 15	TRAVERSE	1975	MIDLAND, GENEVA-15N, 2W, 15	3098	3,186	2 L	--	DETROIT RIVER	3,990	1	0	0	1	40	163	2,159	0	0	53	2
AOF	GIBSON	DUNDEE	1950	BAY, GIBSON-18N, 3E, 2	3637	2,942	4 L	--	DETROIT RIVER		1		1952			SEE	GIBSON	TRAVERSE			0
AOF	GIBSON	TRAVERSE	1935	BAY, GIBSON-18N, 3E, 11	3637	2,036	4 L	--	DETROIT RIVER	4,343	12		1957		130	0	51,892	0	0	399	0
OF	GIBSON, SEC. 20	DUNDEE	1951	BAY, GIBSON-18N, 3E, 20	3637	3,097	11 L	--	DUNDEE	3,195	3	0	0	2	30	730	39,032	0	0	1,301	1
OF	GILBERT LAKE	TRAVERSE	1956	OCEANA, COLFAX-16N, 15W, 34	3455	2,032	8 L	42.5	REED CITY	2,711	5	0	0	1	50	0	60,031	0	0	1,200	0
OF	GILMORE	DUNDEE	1955	ISABELLA, GILMORE-16N, 5W, 30	3721	3,803	3 L	48.6	DUNDEE	3,812	12	0	0	2	120	1,859	413,299	0	0	3,444	600
AGF	GILMORE	MICHIGAN STRAY	1945	ISABELLA, GILMORE-16N, 5W, 25	3272A	1,560	3 S	--	DUNDEE	4,091	6		1952		320	0	0	0	207,378	0	0
OF	GOODWELL	REED CITY	1982	NEWAYGO, GOODWELL-14N, 11W, 08	3593	3,404	8 D	--	DETROIT RIVER	3,459	3	3	0	3	120	6,195	6,195	0	0	52	30
OF	GOODWELL	TRAVERSE	1943	NEWAYGO, GOODWELL-14N, 11W, 8	3674	2,760	12 L	43.0	BASS ISLANDS	4,342	31	0	0	2	1,240	4,770	1,141,184	0	0	920	7
OF	GOODWELL, EAST	DUNDEE	1978	NEWAYGO, GOODWELL-14N, 11W, 26	3593	3,294	20 D?	--	DETROIT RIVER		8	0	0	7	440	SEE	GOODWELL,	EAST	REED CITY	0	290
GF	GOODWELL, EAST	MICHIGAN STRAY	1945	NEWAYGO, GOODWELL-14N, 11W, 24	3675	1,190	4 S	--	DETROIT RIVER	3,498	3	0	0	1	320	0	0	0	7,654	0	1
OF	GOODWELL, EAST	REED CITY	1966	NEWAYGO, GOODWELL-14N, 11W, 26	3593	3,411	13 D	--	DETROIT RIVER		3	0	0	2	120	14,066	82,558	0	16,793	687	140
AGF	GRANT	GLACIAL DRIFT	1929	MASON, GRANT-20N, 17W, 15	3837	632	1 S	--	DUNDEE	2,385	3		1955		120	0	0	0	8,180	0	0
AG-C	GRANT 01-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 1	3797	5,807	32 D	67.6	NIAGARAN	6,060	1		1977		80	0	36	0	0	0	0
OF	GRANT 03-25N-12W	NIAGARAN	1974	GD. TRAVERSE, GRANT-25N, 12W, 3	3797	5,353	33 D	--	NIAGARAN	5,744	2	1	0	2	120	17,481	312,366	0	38,907	2,603	150
OF	GRANT 03-25N-12W P/A	NIAGARAN	1977	GD. TRAVERSE, GRANT-25N, 12W, 3	3797	5,381	12 D	37	NIAGARAN	5,724	1	0	0	1	160	227	25,555	0	0	159	300
OF	GRANT 04-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 4	3797	5,469	18 D	37.7	NIAGARAN	5,724	2	0	0	1	160	22,130	69,025	0	1,122	431	9
OF	GRANT 09-25N-12W	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 9	3797	5,620	22 D	40.4	NIAGARAN	5,915	3	0	0	3	240	55,283	334,232	41,079	654,214	1,392	107
OF	GRANT 10-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 10	3797	5,634	119 D	38.1	NIAGARAN	5,875	2	0	0	2	160	26,385	240,979	43,783	337,363	1,506	194
G-C	GRANT 12-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 12	3797	5,767	50 D	67.1	NIAGARAN	6,030	5	0	1	3	320	1,247	112,861	290,869	3,982,860	352	34
G-C	GRANT 13-25N-12W	NIAGARAN	1974	GD. TRAVERSE, GRANT-25N, 12W, 13	3797	5,943	54 D	65.0	NIAGARAN	6,192	3	0	0	3	640	20,869	551,206	2,707,024	35,665,124	861	108
OF	GRANT 22-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 22	3797	5,741	156 D	--	NIAGARAN	6,188	2	0	0	2	240	79,386	802,344	179,282	701,232	3,343	1
OF	GRANT 22-25N-12W P/A	NIAGARAN	1979	GD. TRAVERSE, GRANT-25N, 12W, 22	3797	5,946	55 L	44	NIAGARAN	6,200	1	0	0	1	80	15,383	130,832	38,073	273,070	1,635	0
G-C	GRANT 24-25N-12W	SALINA-NIAGARAN	1973	GD. TRAVERSE, GRANT-25N, 12W, 24	3797	5,815	103 D	71.0	NIAGARAN	6,413	2	0	0	2	160	3,475	84,167	288,081	2,824,760	526	0
OF	GRANT 24-25N-12W P/A	NIAGARAN	1974	GD. TRAVERSE, GRANT-25N, 12W, 24	3797	6,073	89 D	48.7	NIAGARAN	6,366	1	0	0	1	80	3,864	48,447	49,305	536,663	605	2
OF	GRANT 26-25N-12W	NIAGARAN	1971	GD. TRAVERSE, GRANT-25N, 12W, 26	3797	5,961	80 D	46.9	NIAGARAN	6,383	4	0	0	4	240	45,635	484,662	265,614	1,874,122	2,019	25
OF	GRANT 26-25N-12W P/A	NIAGARAN	1982	GD. TRAVERSE, GRANT-25N, 12W, 26	3797	6,076	214 D	46	NIAGARAN	6,335	2	2	0	2	160	29,899	29,899	4,763	4,763	187	3
OF	GRANT 29-25N-12W	NIAGARAN	1973	GD. TRAVERSE, GRANT-25N, 12W, 29	3797	5,720	82 D	44.3	NIAGARAN	6,135	5	0	0	5	400	93,247	1,421,722	494,491	4,334,904	3,554	13
AOF	GRANT 31-25N-12W	NIAGARAN	1975	GD. TRAVERSE, GRANT-25N, 12W, 31	3797	5,772	106 D	--	NIAGARAN	6,120	1		1976		80	0	1,816	0	0	22	0
AG-C	GRANT 32-25N-12W	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 32	3797	5,868	194 D	61	NIAGARAN	6,145	2		1982		160	0	4,823	0	369,835	30	0
OF	GRANT 33-25N-12W	NIAGARAN	1980	GD. TRAVERSE, GRANT-25N, 12W, 33	3797	5,864	104 D	51	NIAGARAN	6,220	3	0	0	3	160	29,923	69,882	324,907	836,218	436	5
G-C	GRANT 34-25N-12W	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 34	3797	6,252	10 D	69	NIAGARAN	6,331	2	0	0	2	160	1,231	74,536	220,002	3,012,106	465	0
OF	GRANT 34-25N-12W P/A	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 34	3797	5,967	218 D	40.8	NIAGARAN	6,267	2	0	0	2	160	41,879	371,376	114,071	744,353	2,321	1
G-C	GRANT 35-25N-12W	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 35	3797	6,052	92 D	--	NIAGARAN	6,337	3	0	0	3	240	7,881	52,422	443,629	2,349,554	218	0
G-C	GRANT 36-25N-12W	NIAGARAN	1976	GD. TRAVERSE, GRANT-25N, 12W, 36	3797	6,129	131 D	64.8	NIAGARAN	6,580	2	0	0	2	160	1,450	39,560	416,541	2,164,906	247	0
OF	GRANT, SEC. 29	DETROIT RIVER	1953	HURON, GRANT-15N, 11E, 29	3837	3,358	8 D	38.8	BOIS BLANC	3,918	4	0	0	4	160	1,882	24,328	0	0	152	13
AGF	GREEN	MICHIGAN STRAY	1946	MECOSTA, GREEN-16N, 10W, 18	3653	1,250	3 S	--	REED CITY	3,710	2		1951		320	0	0	0	74,835	0	0
G-C	GREEN LAKE 35-26N-12W	NIAGARAN	1982	GD. TRAVERSE, GREEN LAKE-26N, 12W, 35	3772	5,894	7 D	--	BLACK RIVER	5,560	1		1970		40	0	2,836	0	0	70	0
AOF	GREEN OAK	TRENTON-BLK. RIVER	1967	LIVINGSTON, GREEN OAK-1N, 6E, 14	3910	4,682	10 D	--	NIAGARAN	3,998	1	0	0	1	80	0	673	60,494	365,245	8	0
GF	GREEN OAK 11-01N-06E	NIAGARAN	1978	LIVINGSTON, GREEN OAK-1N, 6E, 11	3910	3,612	33 D	--	NIAGARAN	6,078	1	1	0	1	80	3,112	3,112	150,670	150,670	39	0
OF	GREENWOOD, SEC. 03	TRAVERSE	1968	CLARE, GREENWOOD-19N, 5W, 3	3496	3,438	14 L	--	DUNDEE	4,048	3	0	0	3	60	6,916	102,410	0	0	1,706	213
AOF	GREENWOOD, SEC. 11	DUNDEE	1952	CLARE, GREENWOOD-19N, 5W, 11	3496	4,054	10 L	--	RICHFIELD	5,432	1		1953		10	0	1,324	0	0	132	0
AOF	GROUT	DETROIT RIVER SZ	1958	GLADWIN, GROUT-18N, 2W, 10	3702	4,801	12 D	--	DETROIT RIVER		1		1963			SEE	GROUT	RICHFIELD			0
AOF	GROUT	DUNDEE	1940	GLADWIN, GROUT-18N, 2W, 10	3702	3,825	4 L	--	DETROIT RIVER	5,240	5		1957			SEE	GROUT	RICHFIELD			0
OF	GROUT	RICHFIELD	1956	GLADWIN, GROUT-18N, 2W, 10	3702	5,039	10 D	41.7	DETROIT RIVER		17	0	0	9	680	21,523	1,909,757	0	0	2,808	363
OF	HAMBURG 07-01N-05E	NIAGARAN	1982	LIVINGSTON, HAMBURG-01N, 05E, 07	3282	3,880	26 D	27.7	NIAGARAN	4,168	1	1	0	1	80	1,077	1,077	0	0	14	0
AOF	HAMBURG 16-01N-05E	NIAGARAN	1981	LIVINGSTON, HAMBURG-1N, 5E, 16	3282	3,701	16 D	32	NIAGARAN	3,926	2		1982		80	100	172	0	0	2	0
AOF	HAMILTON	DUNDEE	1940	CLARE, HAMILTON-19N, 3W, 15	3559	4,041	10 L	41.8	RICHFIELD		3		1959		30	SEE	HAMILTON	RICHFIELD			0
AGF	HAMILTON	MICHIGAN STRAY	1940	CLARE, HAMILTON-19N, 3W, 15	3559A	1,270	3 S	--	RICHFIELD	5,395	4		1954		440	0	0	0	281,118	0	0
OF	HAMILTON	RICHFIELD	1952	CLARE, HAMILTON-19N, 3W, 5	3559	5,145	12 D	42.2	RICHFIELD		47	0	0	27	1,870	98,900	6,888,649	45,815	4,346,033	3,683	2,325
OF	HAMLIN 01-01N-03W	NIAGARAN	1978	EATON, HAMLIN-1N, 3W, 1	3815	3,813	10 D	32	NIAGARAN	4,190	1	0	0	1	80	17,939	47,036	48,850	153,762	587	45
OF	HAMLIN 02-01N-03W	NIAGARAN	1975	EATON, HAMLIN-1N, 3W, 2	3815	3,791	22 D	--	NIAGARAN	3,777	1	0	0	1	160	7,639	79,657	21,043	319,676	497	38
OF	HAMLIN 05-01N-03W	NIAGARAN	1975	EATON, HAMLIN-1N, 3W, 5	3815	3,650	60 D	--	NIAGARAN	3,900	3	0	0	3	240	92,713	788,171	182,784	724,695	3,284	0
G-C	HAMLIN 05-01N-03W P/A	NIAGARAN	1975	EATON, HAMLIN-1N, 3W, 5	3815	3,801	12 D	--	NIAGARAN	3,867	1	0	0	1	160	1	4,945	91,927	1,249,262	30	0
OF	HAMLIN 06-01N-03W	NIAGARAN	1980	EATON, HAMLIN-1N, 3W, 6	3815	3,696	5 D	40.7	NIAGARAN	3,850	1	0	0	1	80	72,835	131,120	24,531	49,970	1,639	0
OF	HAMLIN 06-01N-03W P/A	NIAGARAN	1980	EATON, HAMLIN-1N, 3W, 6	3815	3,759	4 D	40	NIAGARAN	3,870	1	0	0	1	80	15,628	61,436	43,017	73,058	767	0
OF	HAMLIN 06-01N-03W P/B	NIAGARAN	1983	EATON, HAMLIN-1N, 3W, 6	3815	3,740	20 D	--	NIAGARAN	3,852	0	0	0	0	80	2,207	2,207	0	0	27	
OF	HAMLIN 08-01N-03W	NIAGARAN	1972	EATON, HAMLIN-1N, 3W, 8	3815	3,640	65 D	--	NIAGARAN	4,058	2	0	0	2	160	5,645	384,877	19,159	735,985	2,405	0
OF	HAMLIN 08-01N-03W P/A	NIAGARAN	1975	EATON, HAMLIN-1N, 3W, 8	3815	3,697	11 D	--	NIAGARAN	4,056	1	0	0	1	80	2,370	28,189	0	203,339	352	1
OF	HAMLIN 08-01N-03W P/B	NIAGARAN	1980	EATON, HAMLIN-1N, 3W, 8	3815	3,672	22 D	40	NIAGARAN	3,835	1	0	0	1	80	31,873	88,816	41,946	73,826	1,110	0
GF	HAMLIN 09-01N-03W	NIAGARAN	1979	EATON, HAMLIN-1N, 3W, 9	3815	3,711	42 D	--	NIAGARAN	3,839	1	0	0	1	80	100	1,341	63,267	437,645	16	0
GF	HAMLIN 09-01N-03W P/A	NIAGARAN	1981	EATON, HAMLIN-1N, 3W, 16	3815	3,690	4 D	--	NIAGARAN	3,807	1	0	0	1	160	2,401	2,401	255,782	255,782	15	0
OF	HAMLIN 10-01N-03W	NIAGARAN	1974	EATON, HAMLIN-1N, 3W, 10	3815	3,657	5 D	--	NIAGARAN	3,805	2	0	0	1	160	10,503	162,691	13,632	174,671	1,016	30

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	HAMLIN 11-01N-03W	NIAGARAN	1981	EATON, HAMLIN-1N, 3W, 11	3815	3,646	33 D	42	NIAGARAN	3,930	1	0	0	1	80	19,353	21,868	5,911	5,911	273	1
OF	HAMLIN 11-01N-03W P/A	NIAGARAN	1981	EATON, HAMLIN-1N, 3W, 11	3815	3,650	15 D	42	NIAGARAN	3,928	1	0	0	1	80	8,141	9,979	3,855	3,855	124	0
OF	HAMLIN 12-01N-03W	NIAGARAN	1977	EATON, HAMLIN-1N, 3W, 12	3815	3,720	20 D	--	NIAGARAN	4,180	2	0	0	2	240	8,566	93,689	0	36,410	390	8
OF	HAMLIN 13-01N-03W	NIAGARAN	1977	EATON, HAMLIN-1N, 3W, 13	3815	3,924	11 D	--	NIAGARAN	4,008	1	0	0	1	160	3,459	27,001	73,530	467,800	168	0
OF	HAMLIN 14-01N-03W	NIAGARAN	1981	EATON, HAMLIN-1N, 3W, 14	3815	3,636	5 D	--	NIAGARAN	3,790	2	0	0	2	160	20,070	28,266	12,061	12,061	176	10
GF	HAMLIN 15-01N-03W	NIAGARAN	1979	EATON, HAMLIN-1N, 3W, 15	3815	3,608	48 D	--	NIAGARAN	3,825	1	0	0	1	80	0	40	15,061	206,615	0	8
GF	HAMLIN 22-01N-03W	NIAGARAN	1977	EATON, HAMLIN-1N, 3W, 22	3815	3,520	22 D	--	NIAGARAN	4,020	1	0	0	1	80	0	0	13,752	448,817	0	0
GF	HAMLIN 22-01N-03W P/A	NIAGARAN	1979	EATON, HAMLIN-1N, 3W, 22	3815	3,588	16 D	--	NIAGARAN	3,753	1	0	0	1	160	0	212	10,681	254,972	1	0
AGF	HAMLIN 23-01N-03W	NIAGARAN	1974	EATON, HAMLIN-1N, 3W, 23	3815	3,640	38 D	--	NIAGARAN	3,808	1		1982		80	228	3,540	16,895	1,134,716	44	0
G-C	HAMLIN 23-01N-03W P/A	NIAGARAN	1976	EATON, HAMLIN-1N, 3W, 23	3815	3,641	13 D	--	NIAGARAN	3,800	1	0	0	1	80	5	1,099	11,185	275,044	13	0
OF	HAMLIN 13-19N-18W	NIAGARAN	1972	MASON, HAMLIN-19N, 18W, 13	3799	4,284	12 D	46.2	NIAGARAN	4,500	3	0	0	3	200	33,294	677,121	125,503	1,164,115	3,385	45
G-C	HAMLIN 13-19N-18W P/A	NIAGARAN	1973	MASON, HAMLIN-19N, 18W, 13	3799	4,392	6 D	--	NIAGARAN	4,460	2	0	0	2	200	463	45,199	177,938	7,638,719	225	4
OF	HAMLIN 13-19N-18W P/B	NIAGARAN	1975	MASON, HAMLIN-19N, 18W, 13	3799	4,464	11 D	48.0	NIAGARAN	4,671	1	0	0	1	80	11,551	165,490	78,029	463,730	2,068	36
OF	HAMLIN 13-19N-18W P/C	NIAGARAN	1980	MASON, HAMLIN-19N, 18W, 13	3799	5,305	15 D	--	NIAGARAN	4,526	1	0	0	1	80	6,041	14,512	15,223	39,124	181	37
OF	HAMLIN 25-19N-18W	NIAGARAN	1972	MASON, HAMLIN-19N, 18W, 25	3799	4,251	14 D	46.2	NIAGARAN	4,556	3	0	0	3	320	37,663	311,426	238,622	1,899,857	973	0
OF	HAMLIN 27-19N-18W	NIAGARAN	1952	MASON, HAMLIN-19N, 18W, 27	3799	4,224	20 D	46.2	CAMBRIAN	6,622	2	0	0	1	160	0	60,778	0	0	0	0
OF	HANOVER	TRENTON-BLK. RIVER	1959	JACKSON, HANOVER-4S, 2W, 8	3746	4,012	120 D	43.0	PRAIRIE DU CHIEN	4,604	10	0	0	1	180	0	1,319,470	0	597,737	7,330	0
G-C	HANOVER 05-24N-11W	NIAGARAN	1982	WEXFORD, HANOVER-24N, 11W, 05	3714	6,535	95 D	72.3	NIAGARAN	6,714	1	1	0	1	80	77	77	0	0	1	0
OF	HARDY DAM	REED CITY	1966	MECOSTA, AETNA-13N, 10W, 5	3763	3,351	5 D	44.8	DETROIT RIVER	3,482	23	0	1	15	920	9,737	1,203,629	0	0	1,308	2,095
OF	HARRISON	DUNDEE	1945	CLARE, HATTON-18N, 4W, 7	3496	4,190	13 L	39.7	SYLVANIA		2	0	0	2	80	1,734	175,852	0	0	2,198	33
AGF	HARRISON	MICHIGAN STRAY	1945	CLARE, HATTON-18N, 4W, 7	3496	1,675	3 S	--	SYLVANIA	5,633	7		1962		760	0	0	0	610,434	0	0
AOF	HART	TRAVERSE	1933	OCEANA, HART-15N, 17W, 36	3311A	1,911	54 D	34.0	ST. PETER SS.	5,531	17		1936		150	0	116,275	0	0	775	0
AGF	HARTWICK	MICHIGAN STRAY	1968	OSCEOLA, HARTWICK 19N, 8W, 11	3561	1,681	25 S	--	MICHIGAN STRAY	1,706	1		1977		160	0	0	0	18,100	0	0
AOF	HATTON	DUNDEE	1941	CLARE, HATTON-18N, 4W, 31	3898	3,945	2 L	--	DUNDEE	4,000	4		1948		160	0	139,272	0	0	870	0
AOF	HAWKHEAD	TRAVERSE	1946	ALLEGAN, CASCO-1N, 16W, 20	3604	1,103	1 L	36.0	DETROIT RIVER	1,385	16		1960		160	0	68,292	0	0	426	0
AOF	HAY, SEC. 34	BEREA	1979	GLADWIN, HAY-18N, 1E, 34	3724	2,210	6 S	--	DETROIT RIVER	4,130	2		1981		80	0	608	0	0	7	0
OF	HAYES 11-29N-04W	NIAGARAN	1969	OTSEGO, HAYES-29N, 4W, 11	3776	6,180	57 D	47.0	NIAGARAN	6,515	5	0	0	4	800	79,421	1,297,699	70,573	751,838	1,622	63
OF	HAYES 15-29N-04W	NIAGARAN	1973	OTSEGO, HAYES-29N, 4W, 15	3776	6,350	39 D	42.6	NIAGARAN	6,615	2	0	0	2	160	675,536	3,184,922	318,682	1,636,088	19,905	1,100
OF	HAYES 21-29N-04W	NIAGARAN	1972	OTSEGO, HAYES-29N, 4W, 21	3776	6,581	6 D	44.9	NIAGARAN	6,972	1	0	0	1	80	55,118	918,938	33,663	498,649	11,486	5
OF	HAYES 21-29N-04W P/A	NIAGARAN	1972	OTSEGO, HAYES-29N, 4W, 21	3776	6,513	220 D	42.7	NIAGARAN	6,947	4	0	0	4	400	389,269	1,938,621	248,888	2,006,134	4,846	520
OF	HAYES 29-29N-04W	SALINA-NIAGARAN	1973	OTSEGO, HAYES-29N, 4W, 29	3776	6,474	53 D	42.7	NIAGARAN	6,982	3	0	0	3	240	76,980	1,387,715	85,354	1,285,559	5,782	235
OF	HAYES 32-29N-04W	NIAGARAN	1972	OTSEGO, HAYES-29N, 4W, 32	3776	6,462	5 D	42.7	NIAGARAN	6,873	3	0	0	3	320	27,571	939,540	20,138	474,676	2,936	118
OF	HAYES 34-29N-04W	NIAGARAN	1974	OTSEGO, HAYES-29N, 4W, 34	3776	6,836	25 D	42.4	NIAGARAN	7,050	3	0	0	3	160	51,545	899,493	38,387	512,135	5,621	0
OF	HAYES 36-29N-04W	NIAGARAN	1976	OTSEGO, HAYES-29N, 4W, 36	3776	6,464	65 D	47.5	NIAGARAN	6,875	1	0	0	1	80	62,299	536,652	162,697	837,594	6,708	0
OF	HEADQUARTERS	DETROIT RIVER SZ	1942	ROSCOMMON, ROSCOMMON-21N, 3W, 33	3680	4,946	13 D	43.7	BOIS BLANC		33	0	0	24*		18,683	29,190	0	0		43
OF	HEADQUARTERS	DUNDEE	1958	ROSCOMMON, ROSCOMMON-21N, 3W, 30	3572	3,899	12 L	39.9	BOIS BLANC		1	0	0	1	10	1,426	SEE	HEADQUARTERS	RICHFIELD	FOR CUM 0	1
AGF	HEADQUARTERS	MICHIGAN STRAY	1945	ROSCOMMON, ROSCOMMON-21N, 3W, 20	3572	1,340	6 S	--	BOIS BLANC	5,929	12		1975		1,760	0	0	0	0	0	0
OF	HEADQUARTERS	RICHFIELD	1952	ROSCOMMON, ROSCOMMON-21N, 3W, 33	3572	5,147	23 D	42.6	BOIS BLANC		60	0	0	19*	2,320	41,217	10,993,070	0	4,248,560	4,737	155
OF	HEADQUARTERS	TRAVERSE	1941	ROSCOMMON, ROSCOMMON-21N, 3W, 34	3572	3,356	5 L	42.3	BOIS BLANC		47	0	0	2	1,400	77	SEE	HEADQUARTERS	RICHFIELD	FOR CUM 0	0
OF	HEATH	TRAVERSE	1948	ALLEGAN, HEATH-3N, 14W, 14	3556	1,498	2 L	38.0	SALINA	2,716	25	0	0	3	270	1,648	220,394	0	0	816	5
AGF	HEATH, SEC. 21	SALINA	1960	ALLEGAN, HEATH-3N, 14W, 21	3556	2,492	19 D	--	SALINA	2,789	1		1965		160	0	0	0	64,699	0	0
AOF	HEATH, SEC. 35	TRAVERSE	1945	ALLEGAN, HEATH-3N, 14W, 35	3556	1,468	2 L	--	TRAVERSE	1,470	1		1946		10	0	559	0	0	55	0
OF	HENDERSON, SEC. 23	RICHFIELD	1975	WEXFORD, HENDERSON-21N, 11W, 23	3847	4,894	8 D	--	AMHERSTBURG	4,970	1	0	0	1	40	0	141	0	0	3	0
OF	HENRIETTA	TRENTON	1979	JACKSON, HENRIETTA-1S, 1E, 7	3912	5,060	34 L	42.9	PRAIRIE DU CHIEN	5,653	5	0	0	4	240	1,380	24,184	0	0	100	0
GF	HERSEY	CLINTON	1982	OSCEOLA, EVART-17N, 08W, 31	3960	8,137	24 D	--	CINCINNATIAN	9,769	1	1	0	1	40	0	0	0	0	0	0
GF	HERSEY	MICHIGAN STRAY	1971	OSCEOLA, HERSEY-17N, 9W, 36	3561	1,510	3 S	--	MICHIGAN STRAY	1,638	8	0	0	4	1,280	0	0	0	220,606	0	1
OF	HICKEYS CREEK	RICHFIELD	1981	CRAWFORD, S. BRANCH-25N, 02W, 25	3941	4,298	132 D	--	DETROIT RIVER	4,530	5	1	0	5	200	15,438	24,540	0	0	122	23
GF	HILLIARDS	A-1 CARB.	1958	ALLEGAN, HOPKINS-3N, 12W, 4	3573	2,938	30 D	--	NIAGARAN		6	0	0	3	960	0	16,519	0	2,339,602	17	0
AOF	HILLIARDS	TRAVERSE	1944	ALLEGAN, HOPKINS-3N, 12W, 4	3573	1,576	1 L	--	NIAGARAN	3,157	17		1961		300	0	124,401	0	0	414	0
AOF	HOLTON	TRAVERSE	1948	MUSKEGON, HOLTON-12N, 15W, 9	3557	1,993	1 L	37.3	DUNDEE	2,554	3		1963		60	0	95,911	0	0	1,598	0
OF	HOME, SEC. 26	DUNDEE	1970	MONTCALM, HOME-12N, 6W, 27	3467	3,513	7 L	--	REED CITY		4	0	0	4*	200	2,571	108,175	0	0	532	297
OF	HOME, SEC. 26	TRAVERSE	1964	MONTCALM, HOME-12N, 6W, 26	3467	3,096	10 L	45.3	REED CITY	3,618	3	0	0	3*	50	1,618	SEE	HOME SEC 26	DUNDEE		38
OF	HOPE	TRAVERSE	1939	BARRY, HOPE-2N, 9W, 27	3633	1,869	3 L	37.6	PRAIRIE DU CHIEN	4,944	66	0	0	37	650	6,272	714,720	0	0	1,099	43
AOF	HOPKINS	TRAVERSE	1939	ALLEGAN, HOPKINS-3N, 12W, 23	3573	1,633	4 L	41.5	DETROIT RIVER	1,965	10		1956		110	0	145,513	0	0	1,322	0
OF	HOPKINS, SOUTH	TRAVERSE	1948	ALLEGAN, HOPKINS-3N, 12W, 30	3573	1,538	3 L	38.0	TRAVERSE	1,611	35	0	0	1	330	304	271,455	0	0	822	1
AOF	HOPKINS, WEST	SALINA	1956	ALLEGAN, HOPKINS-3N, 12W, 18	3573	2,755	7 D	17.9	NIAGARAN		2		1968		20	44	1,893	0	0	94	0
AOF	HOPKINS, WEST	TRAVERSE	1941	ALLEGAN, HOPKINS-3N, 12W, 18	3573	1,371	2 L	41.5	NIAGARAN	3,140	31		1951		370	0	388,777	0	0	1,050	0
AOF	HUBBARDSTON	DUNDEE	1947	IONIA, NORTH PLAINS-8N, 5W, 4	3600	3,028	5 L	--	DUNDEE	3,072	5		1959		50	0	48,479	0	0	969	0
OF	HUBER	"BEREA"	1981	NEWAYGO, DENVER-14N, 14W, 5	3581	1,630	5 S	--	DETROIT RIVER	3,400	5	0	0	5	200	3,393	6,266	0	0	31	0
AOF	HUBER	TRAVERSE	1955	NEWAYGO, DENVER-14N, 14W, 5	3684	2,109	2 L	41.3	DETROIT RIVER		13		1978		260	0	557,540	0	0	2,144	0
OF	INGHAM 12-02N-01E	SALINA-NIAGARAN	1973	INGHAM, INGHAM-2N, 1E, 12	3814	4,186	60 D	--	NIAGARAN	4,450	4	0	0	4	320	34,124	651,542	53,957	423,517	2,036	500
OF	INGHAM 13-02N-01E	NIAGARAN	1972	INGHAM, INGHAM-2N, 1E, 13	3814	4,190	30 D	41	TRENTON	6,224	5	0	0	3	400	91,571	1,049,240	54,057	889,290	2,623	1,157
OF	INGHAM 25-02N-01E	SALINA-NIAGARAN	1973	INGHAM, INGHAM-2N, 1E, 25	3814	4,048	66 D	--	NIAGARAN	4,600	3	0	0	3	240	28,526	623,837	47,020	444,421	2,599	434
AOF	IOSCO 28-02N-03E	NIAGARAN	1979	LIVINGSTON, IOSCO-2N, 3E, 28	3282	3,819	7 D	30	NIAGARAN	4,260	1		1981		80	0	6,727	0	0	84	0
OF	ISABELLA	DUNDEE	1948	ISABELLA, ISABELLA-15N, 4W, 7	3630	3,783	9 D	46.9	DETROIT RIVER		20	0	0	1	370	519	830,430	0	137,806	2,244	0
AGF	ISABELLA	MICHIGAN STRAY	1949	ISABELLA, ISABELLA-15N, 4W, 7	3630	1,454	7 S	--	DETROIT RIVER	3,993	6		1956		240	0	0	0	342,506	0	0
AGF	ITHACA	MICHIGAN STRAY	1943	GRATIOT, ARCADIA-11N, 3W, 36	3447	900	16 S	--	DUNDEE	3,419	5		1965		800	0	0	0	1,551,415	0	0
OF	JEFFERSON	SYLVANIA	1975	CASS, JEFFERSON-7S, 15W, 27	3871	974	43 S	--	PRAIRIE DU CHIEN		1	0	0	1	40	620	185,086	0	0	4,366	0
OF	JEFFERSON	TRAVERSE	1961	CASS, JEFFERSON-7S, 15W, 26	3871	710	3 L	32.0	PRAIRIE DU CHIEN	2,603	38	0	1	16	760	10,421	SEE	JEFFERSON	SYLVANIA		1,017
OF	JEROME	DUNDEE	1947	MIDLAND, JEROME-15N, 1W, 7	3629	3,743	10 L	39.0	DETROIT RIVER	4,001	12	0	0	3	260	1,727	258,729	0	0	995	2
OF	JOHNSTOWN	TRAVERSE	1951	BARRY, JOHNSTOWN-1N, 8W, 17	3551	1,870	2 L	37.0	TRAVERSE	1,899	5	0	0	2	50	900	40,677	0	0	813	1
OF	JUNO LAKE	TRAVERSE	1978	CASS, CALVIN-7S, 14W, 31	3924	724	6 D	36	TRAVERSE	730	7	0	1	3	280	402	7,751	0	0	27	40
OF	KALKASKA 03-27N-07W	SALINA-NIAGARAN	1973	KALKASKA, KALKASKA-27N, 7W, 3	3785	6,396	180 D	42.7	NIAGARAN	6,850	1	0	0	1	80	2,542	105,391	29,873	928,170	1,317	75
OF	KALKASKA 03-27N-07W P/A	SALINA-NIAGARAN	1973	KALKASKA, KALKASKA-27N, 7W, 3	3785	6,538	206 D	45.2	NIAGARAN	6,888	1	0	0	1	160	10,798	186,464	23,287	453,694	1,165	32
OF	KALKASKA 03-27N-07W P/B	NIAGARAN	1977	KALKASKA, KALKASKA-27N, 7W, 3	3785	6,647	6 D	45.6	NIAGARAN	6,827	1	0	0	1	80	2,625	29,170	49,957	400,508	364	57

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	KALKASKA 05-27N-07W	NIAGARAN	1970	KALKASKA, KALKASKA-27N, 7W, 5	3785	6,314	68 D	41.5	NIAGARAN	6,921	5	0	0	5	400	29,364	1,124,476	147,802	1,855,216	2,811	401
OF	KALKASKA 07-27N-07W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 7	3785	6,305	3 D	--	NIAGARAN	6,662	1	0	0	1	80	9,159	142,436	8,566	118,437	1,780	159
G-C	KALKASKA 09-27N-07W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 9	3785	6,482	89 D	55.0	NIAGARAN	6,830	1	0	0	1	160	36	39,904	43,803	1,539,368	249	21
G-C	KALKASKA 10-27N-07W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 10	3785	6,470	188 D	64.0	NIAGARAN	6,859	1	0	0	1	320	4,431	163,792	116,917	4,789,590	511	2
OF	KALKASKA 11-27N-07W	NIAGARAN	1978	KALKASKA, KALKASKA-27N, 7W, 11	3785	6,876	15 D	42.9	NIAGARAN	6,950	1	0	0	1	160	15,916	92,351	165,844	698,797	577	0
OF	KALKASKA 12-27N-07W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 12	3785	6,883	19 D	--	NIAGARAN	7,009	1	0	0	1	80	2,262	40,187	13,246	106,737	502	1
G-C	KALKASKA 13-27N-07W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 13	3785	6,889	60 D	63.0	NIAGARAN	7,225	2	0	0	2	240	2,179	103,421	199,599	5,726,296	430	0
G-C	KALKASKA 14-27N-07W	NIAGARAN	1980	KALKASKA, KALKASKA-27N, 7W, 14	3785	6,799	51 D	65.2	NIAGARAN	7,150	1	0	0	1	80	3,799	13,195	103,074	341,921	164	1
AOF	KALKASKA 16-27N-07W	NIAGARAN	1973	KALKASKA, KALKASKA-27N, 7W, 16	3785	6,572	158 D	47.4	NIAGARAN	7,077	1		1979		40	0	7,731	0	37,693	193	0
OF	KALKASKA 16-27N-07W P/A	NIAGARAN	1973	KALKASKA, KALKASKA-27N, 7W, 16	3785	7,014	98 D	45.2	NIAGARAN	7,405	2	0	0	2	160	7,639	134,703	285,079	1,827,940	841	127
OF	KALKASKA 16-27N-07W P/B	NIAGARAN	1979	KALKASKA, KALKASKA-27N, 7W, 16	3785	6,778	10 D	44.5	NIAGARAN	6,949	3	0	0	2	160	74,048	208,170	254,133	648,188	1,301	194
OF	KALKASKA 19-27N-07W	NIAGARAN	1974	KALKASKA, KALKASKA-27N, 7W, 19	3785	6,626	10 D	44.0	NIAGARAN	7,003	2	0	0	1	320	536	57,692	20,496	146,560	180	0
G-C	KALKASKA 23-27N-07W	NIAGARAN	1977	KALKASKA, KALKASKA-27N, 7W, 23	3785	7,027	34 D	64.3	NIAGARAN	7,166	2	1	0	1	160	192	5,853	0	126,304	36	0
OF	KALKASKA 24-27N-07W	SALINA-NIAGARAN	1974	KALKASKA, KALKASKA-27N, 7W, 24	3785	6,726	469 D	46.8	NIAGARAN	7,317	1	0	0	1	80	1,812	9,354	14,116	49,250	116	0
G-C	KALKASKA 24-27N-07W P/A	NIAGARAN	1978	KALKASKA, KALKASKA-27N, 7W, 24	3785	7,101	18 D	61.8	NIAGARAN	7,242	1	0	0	1	80	1,272	13,334	304,327	1,486,856	166	1
AG-C	KALKASKA 28-27N-07W	NIAGARAN	1970	KALKASKA, KALKASKA-27N, 7W, 28	3785	7,129	28 D	65.3	NIAGARAN	7,408	1		1979		160	0	20,327	0	907,892	127	0
G-C	KALKASKA 28-27N-07W P/A	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 7W, 28	3785	6,977	192 D	68.0	NIAGARAN		1	0	0	1	160	0	56,733	22,085	1,566,310	354	0
G-C	KALKASKA 28-27N-07W P/B	NIAGARAN	1975	KALKASKA, KALKASKA-27N, 7W, 28	3785	7,088	40 D	--	NIAGARAN	7,205	1	0	0	1	80	0	24,763	1,920	310,232	309	0
G-C	KALKASKA 28-27N-07W P/C	NIAGARAN	1982	KALKASKA, KALKASKA-27N, 07W, 28	3785	7,114	92 D	69.5	NIAGARAN	7,285	1	1	0	1	80	2,731	2,731	188,063	188,063	34	0
G-C	KALKASKA 32-27N-07W	NIAGARAN	1971	KALKASKA, KALKASKA-27N, 7W, 32	3785	6,828	309 D	60	NIAGARAN	7,369	1	0	0	1	160	0	57,680	16,245	1,925,120	360	0
G-C	KALKASKA 32-27N-07W P/A	NIAGARAN	1975	KALKASKA, KALKASKA-27N, 7W, 32	3785	7,076	22 D	--	NIAGARAN	7,255	1	0	0	1	80	0	25,423	0	1,255,234	317	0
G-C	KALKASKA 32-27N-07W P/B	NIAGARAN	1980	KALKASKA, KALKASKA-27N-7W, 32	3785	7,200	35 D	64.7	NIAGARAN	7,247	1	0	0	1	80	550	18,299	50,866	342,218	228	0
OF	KALKASKA 33-27N-07W	NIAGARAN	1981	KALKASKA, KALKASKA-27N, 7W, 33	3785	7,181	70 D	43.2	NIAGARAN	7,328	1	0	0	1	80	1,153	1,697	0	0	21	0
OF	KALKASKA 10-27N-08W	NIAGARAN	1978	KALKASKA, KALKASKA-27N, 8W, 10	3786	6,485	33 D	42	NIAGARAN	6,666	4	0	0	4	320	95,636	598,942	320,687	1,256,924	1,871	150
OF	KALKASKA 11-27N-08W	NIAGARAN	1973	KALKASKA, KALKASKA-27N, 8W, 11	3786	6,449	17 D	44.2	NIAGARAN	6,776	2	0	0	1	80	31,231	295,539	59,569	347,479	3,694	138
OF	KALKASKA 12-27N-08W	NIAGARAN	1979	KALKASKA, KALKASKA-27N, 8W, 12	3786	6,354	210 D	40.8	NIAGARAN	6,773	1	0	0	1	80	5,465	24,182	0	3,523	302	0
OF	KALKASKA 13-27N-08W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 8W, 13	3786	6,950	10 D	47.8	NIAGARAN	7,365	3	1	0	2	280	79,485	508,103	501,944	2,469,234	1,814	0
G-C	KALKASKA 14-27N-08W	NIAGARAN	1974	KALKASKA, KALKASKA-27N, 8W, 14	3786	6,551	43 D	--	NIAGARAN	6,790	1	0	0	1	160	308	59,568	82,276	2,916,203	372	12
OF	KALKASKA 19-27N-08W	NIAGARAN	1976	KALKASKA, KALKASKA-27N, 8W, 19	3786	6,425	61 D	--	NIAGARAN	6,611	1	0	0	1	80	31,820	435,089	42,244	315,597	5,438	110
OF	KALKASKA 20-27N-08W	NIAGARAN	1975	KALKASKA, KALKASKA-27N, 8W, 20	3786	6,493	5 D	--	NIAGARAN	6,750	2	1	0	2	80	9,294	87,546	27,417	155,137	1,094	16
OF	KALKASKA 20-27N-08W P/A	NIAGARAN	1981	KALKASKA, KALKASKA-27N, 8W, 20	3786	6,443	22 D	42	NIAGARAN	6,635	1	0	0	1	80	74,009	74,556	64,872	64,872	931	19
OF	KALKASKA 21-27N-08W	NIAGARAN	1971	KALKASKA, KALKASKA-27N, 8W, 21	3786	6,562	77 D	45.1	NIAGARAN	6,856	8	0	0	5	1,040	319,140	5,066,227	1,332,514	9,184,139	4,871	55
OF	KALKASKA 24-27N-08W	SALINA-NIAGARAN	1973	KALKASKA, KALKASKA-27N, 8W, 24	3786	6,380	220 D	46.1	NIAGARAN	6,852	2	0	0	2	160	185,219	1,141,980	321,522	1,649,908	7,137	0
G-C	KALKASKA 25-27N-08W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 8W, 25	3786	6,491	114 D	--	NIAGARAN	7,000	2	0	0	2	160	23,381	174,219	166,493	1,124,074	1,088	0
G-C	KALKASKA 25-27N-08W P/A	NIAGARAN	1974	KALKASKA, KALKASKA-27N, 8W, 25	3786	6,798	40 D	59	NIAGARAN	6,980	1	0	0	1	160	0	84,851	15,000	1,569,761	530	0
OF	KALKASKA 26-27N-08W	SALINA-NIAGARAN	1973	KALKASKA, KALKASKA-27N, 8W, 26	3786	6,372	397 D	55.0	NIAGARAN	6,968	1	0	0	1	160	16,927	260,423	228,686	2,793,983	1,627	0
OF	KALKASKA 28-27N-08W	NIAGARAN	1971	KALKASKA, KALKASKA-27N, 8W, 28	3786	6,717	6 D	--	NIAGARAN	6,838	3	0	0	2	200	0	43,691	0	0	218	0
OF	KALKASKA 29-27N-08W	NIAGARAN	1982	KALKASKA, KALKASKA-27N, 08W, 29	3786	6,605	45 D	45	NIAGARAN	6,885	1	1	0	1	80	16,242	16,242	8,601	8,601	203	38
G-C	KALKASKA 30-27N-08W	NIAGARAN	1974	KALKASKA, KALKASKA-27N, 8W, 30	3786	6,496	22 D	64.7	NIAGARAN	6,692	1	0	0	1	480	15,369	269,217	1,675,350	11,742,815	560	0
AG-C	KALKASKA 31-27N-08W	NIAGARAN	1979	KALKASKA, KALKASKA-27N-8W, 31	3786	-----	-	--	NIAGARAN	6,922	1		1979		80	0	309	0	0	3	0
AOF	KALKASKA 32-27N-08W	NIAGARAN	1975	KALKASKA, KALKASKA-27N, 8W, 32	3786	6,585	7 D	45.0	NIAGARAN	6,890	2		1981		160	0	114,732	0	171,634	717	0
G-C	KALKASKA 33-27N-08W	NIAGARAN	1972	KALKASKA, KALKASKA-27N, 8W, 33	3786	6,620	15 D	--	NIAGARAN	6,754	1	0	0	1	160	0	27,582	0	1,375,532	172	0
GF	KALKASKA 35-27N-08W	NIAGARAN	1973	KALKASKA, KALKASKA-27N, 8W, 35	3786	6,481	249 D	--	NIAGARAN	6,950	1	0	0	1	160	169	78,844	6,275	4,307,538	492	0
OF	KAWKAWLIN	BEREA	1941	BAY, MONITOR-14N, 4E, 3	3695	1,505	4 S	38.0	PRAIRIE DU CHIEN	10,477	4	0	0	4	40	1,353	SEE	KAWKAWLIN	DETROIT RIVER		4
OF	KAWKAWLIN	DETROIT RIVER	1939	BAY, MONITOR-14N, 4E, 2	3695	3,515	5 D	42.0	PRAIRIE DU CHIEN		12	0	0	11	440	25,286	15,806,064	0	0	35,709	3
OF	KAWKAWLIN	DUNDEE	1938	BAY, MONITOR-14N, 4E, 1	3695	2,830	45 L	35.0	PRAIRIE DU CHIEN		321	0	0	287	6,420	92,657	SEE OIL CUM IN DET. RIV.		4,565		234
AGF	KAWKAWLIN	SALINA	1941	BAY, MONITOR-14N, 4E, 2	3695	7,760	16 D	--	PRAIRIE DU CHIEN		1		1946		40	0	0	0	0		0
GF	KIMBALL	NIAGARAN	1980	ST. CLAIR, KIMBALL-6N, 16E, 27	3926	2,916	12 D	--	NIAGARAN	3,050	2	0	0	2	80	0	0	0	0	0	0
OF	KIMBALL LAKE	REED CITY	1955	NEWAYGO, GARFIELD-12N, 13W, 11	3617	2,852	37 D	39.2	ST. PETER SS.		2	0	0	1	20	SEE KIMBALL LAKE	TRAVERSE				0
OF	KIMBALL LAKE	TRAVERSE	1947	NEWAYGO, GARFIELD-12N, 13W, 11	3617	2,332	6 L	43.0	ST. PETER SS.	6,689	106	0	0	3	2,120	517	6,233,619	0	2,111,585	2,940	170
AOF	LACOTA	TRAVERSE	1946	VAN BUREN, GENEVA-1S, 16W, 10	3586	1,110	2 L	--	TRAVERSE	1,208	11		1955		120	0	51,904	0	0	432	0
OF	LAKE GEORGE	DUNDEE	1954	CLARE, LINCOLN-18N, 5W, 6	3898	3,968	2 L	43.8	DUNDEE	3,997	10	0	0	2	100	1,841	388,199	0	0	3,881	480
OF	LAKEFIELD	DUNDEE	1937	SAGINAW, LAKEFIELD-11N, 1E, 1	3578	3,185	12 L	39.0	DUNDEE	3,197	1	0	0	1	10	559	35,255	0	0	3,525	1
OF	LAKETON	DUNDEE	1972	MUSKEGON, LAKETON-10N, 17W, 15	3229B	2,073	21 L	--	REED CITY		1	0	0	1	40	0	312,882	0	0	7,822	0
OF	LAKETON	TRAVERSE	1965	MUSKEGON, LAKETON-10N, 17W, 15	3229B	1,698	4 L	41.4	REED CITY	2,199	9	0	0	6	200	2,934	SEE	LAKETON	DUNDEE		59
OF	LAKEVIEW	TRAVERSE	1961	MONTCALM, CATO-12N, 8W, 22	3605	2,941	4 L	42.5	REED CITY	3,495	2	0	0	1	20	155	12,112	0	0	605	0
AOF	LARKIN	BEREA	1935	MIDLAND, LARKIN-15N, 2E, 32	3494	2,473	4 S	39.0	DUNDEE	3,829	2		1945		20	0	7,070	0	0	353	0
OF	LAWTON	TRAVERSE	1939	VAN BUREN, PORTER-4S, 13W, 18	3661	1,140	1 L	37.5	TRENTON	2,775	65	0	0	1	650	154	215,772	0	0	331	3
OF	LEATON	DUNDEE	1929	ISABELLA, ISABELLA-15N, 4W, 25	3703	3,657	8 L	43.0	DETROIT RIVER		44	2	0	6	510	12,597	1,834,662	0	0	3,597	720
AGF	LEATON	MICHIGAN STRAY	1935	ISABELLA, DENVER-15N, 3W, 19	3703	1,240	2 S	--	DETROIT RIVER	4,390	5		1940		400	0	0	0	189,321	0	0
GF	LEATON	RICHFIELD	1982	ISABELLA, DENVER-15N, 03W, 19	3703	4,621	58 D	--	DETROIT RIVER	4,820	3	3	0	3	120	143	143	0	0	1	15
AOF	LEBANON	TRAVERSE	1948	CLINTON, LEBANON-8N, 4W, 34	3713	2,548	1 L	--	TRAVERSE	2,570	1		1950		10	0	1,036	0	0	103	0
AOF	LEE	TRAVERSE	1941	ALLEGAN, LEE-1N, 15W, 19	3639	1,170	1 L	--	TRAVERSE	1,207	6		1952		60	0	3,030	0	0	50	0
GF	LEE 01-01S-05W	SALINA-NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 1	3842	3,198	116 D	--	NIAGARAN	3,476	2	1	0	2	80	0	0	76,103	76,103	0	1
GF	LEE 02-01S-05W	NIAGARAN	1973	CALHOUN, LEE-1S, 5W, 2	3842	3,377	12 D	--	NIAGARAN	3,426	1	0	0	1	160	0	0	SEE LEE 2	POOL B FOR	GAS CUM	0
GF	LEE 02-01S-05W P/A	NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 2	3842	3,220	46 D	--	NIAGARAN	3,426	1	0	0	1	160	0	600	SEE LEE 2	POOL B FOR	GAS CUM	3
GF	LEE 02-01S-05W P/B	NIAGARAN	1975	CALHOUN, LEE-1S, 5W, 2	3842	3,203	52 D	--	NIAGARAN	3,450	1	0	0	1	80	0	0	0	1,795,807	0	0
OF	LEE 02-01S-05W P/C	NIAGARAN	1975	CALHOUN, LEE-1S, 5W, 2	3842	3,319	9 D	--	NIAGARAN	3,440	1	0	0	1	80	3,716	69,147	8,522	165,452	864	0
GF	LEE 03-01S-05W	SALINA-NIAGARAN	1972	CALHOUN, LEE-1S, 5W, 3	3842	3,219	85 D	--	NIAGARAN	3,686	4	0	1	3	160	259	12,255	18,102	1,627,639	76	2
GF	LEE 03-01S-05W P/A	SALINA-NIAGARAN	1975	CALHOUN, LEE-1S, 5W, 3	3842	3,160	196 D	--	NIAGARAN	3,418	1	1	0	1	40	36,637	36,637	0	0	916	0
AGF	LEE 03-01S-05W P/B	SALINA-NIAGARAN	1976	CALHOUN, LEE-1S, 5W, 3	3842	3,312	16 D	--	NIAGARAN	3,532	3	0	0	3	160	0	193	12,489	915,458	1	0
GF	LEE 03-01S-05W P/C	NIAGARAN	1982	CALHOUN, LEE-01S, 05W, 03	3842	3,404	2 D	--	NIAGARAN	3,511	1		1981		40	0	81	0	253,391	2	0
GF	LEE 08-01S-05W	NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 8	3842	3,121	54 D	--	NIAGARAN	3,615	1	0	0	1	80	0	0	0	0	0	0
GF	LEE 08-01S-05W P/A	SALINA-NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 8	3842	3,118	132 D	--	NIAGARAN	3,841	2	0	0	2	320	0	425	280,988	2,881,705	1	0
G-C	LEE 09-01S-05W	A-1 CARB.-NIAGARAN	1971	CALHOUN, LEE-1S, 5W, 9	3842	3,191	6 D	--	NIAGARAN	3,302	2	0	0	1	40	0	541	1,332	561,334	13	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
GF	LEE 10-01S-05W	NIAGARAN	1973	CALHOUN, LEE-1S, 5W, 10	3842	3,172	30 D	--	NIAGARAN	3,329	1	0	0	1	80	0	2,260	0	122,300	28	0
OF	LEE 10-01S-05W P/A	NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 10	3842	3,327	6 D	--	NIAGARAN	3,399	1	0	0	1	160	18,247	290,640	11,106	212,020	1,816	0
GF	LEE 10-01S-05W P/B	NIAGARAN	1980	CALHOUN, LEE-1S, 5W, 10	3842	3,302	14 D	--	NIAGARAN	3,425	1	0	0	1	80	0	1,792	0	156,533	5	0
GF	LEE 10-01S-05W P/C	NIAGARAN	1980	CALHOUN, LEE-1S, 5W, 10	3842	3,302	14 D	--	NIAGARAN	3,425	1	0	0	1	80	0	0	6,515	153,309	0	0
GF	LEE 10-01S-05W P/D	SALINA-NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 10	3842	3,324	108 D	--	NIAGARAN	3,473	1	0	0	1	160	0	0	17,635	188,667	0	0
GF	LEE 11-01S-05W	NIAGARAN	1976	CALHOUN, LEE-1S, 5W, 11	3842	3,234	16 D	--	NIAGARAN	3,358	2	0	0	2	120	0	0	0	733,552	0	0
OF	LEE 11-01S-05W P/A	NIAGARAN	1977	CALHOUN, LEE-1S, 5W, 11	3842	3,260	12 D	--	NIAGARAN	3,395	1	0	0	1	80	945	33,304	994	45,070	416	0
GF	LEE 12-01S-05W	NIAGARAN	1972	CALHOUN, LEE-1S, 5W, 12	3842	3,180	34 D	--	NIAGARAN	3,370	2	0	0	2	240	0	723	116,760	2,354,933	3	0
GF	LEE 12-01S-05W P/A	NIAGARAN	1973	CALHOUN, LEE-1S, 5W, 12	3842	3,230	18 D	--	TRENTON	5,006	1	0	0	1	80	0	85	52,547	262,122	1	0
OF	LEE 13-01S-05W	NIAGARAN	1973	CALHOUN, LEE-1S, 5W, 13	3842	3,184	10 D	26.3	FRANCONIA	6,000	6	0	0	6	240	12,413	316,527	112,741	449,571	1,318	189
GF	LEE 13-01S-05W P/A	NIAGARAN	1973	CALHOUN, LEE-1S, 5W, 13	3842	3,165	20 D	--	NIAGARAN	3,623	4	0	0	3	160	0	219	42,005	1,544,970	1	0
GF	LEE 13-01S-05W P/B	NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 13	3842	3,220	20 D	--	NIAGARAN	3,361	1	0	0	1	160	0	0	0	80,954	0	0
OF	LEE 14-01S-05W	NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 14	3842	3,198	6 D	--	NIAGARAN	3,631	2	0	0	2	80	9,753	256,942	5,495	130,844	3,211	163
OF	LEE 14-01S-05W P/A	NIAGARAN	1978	CALHOUN, LEE-1S, 5W, 14	3842	3,132	10 D	28.7	NIAGARAN	3,256	1	0	0	1	40	5,382	49,261	3,807	31,409	1,231	1
OF	LEE 14-01S-05W P/B	NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 14	3842	3,148	6 D	--	NIAGARAN	3,303	1	0	0	1	40	4,965	11,883	982	2,334	297	100
GF	LEE 15-01S-05W	NIAGARAN	1974	CALHOUN, LEE-1S, 5W, 15	3842	3,108	22 D	--	NIAGARAN	3,605	1	0	0	1	40	0	172	0	532,191	4	0
OF	LEE 15-01S-05W P/A	NIAGARAN	1977	CALHOUN, LEE-1S, 5W, 15	3842	3,164	17 D	--	NIAGARAN	3,252	1	1	0	1	40	0	0	0	0	0	0
OF	LEE 15-01S-05W P/B	NIAGARAN	1977	CALHOUN, LEE-1S, 5W, 15	3842	3,210	10 D	--	NIAGARAN	3,148	1	0	0	1	40	0	0	0	542,180	0	0
AUF	LEE 15-01S-05W P/C	NIAGARAN	1977	CALHOUN, LEE-1S, 5W, 15	3842	3,110	10 D	--	NIAGARAN	3,300	2	0	0	2	80	19,729	137,364	6,063	65,397	1,717	26
GF	LEE 15-01S-05W P/D	A1 CARBONATE	1982	CALHOUN, LEE-01S, 05W, 15	3842	3,102	12 D	--	NIAGARAN	3,225	2		1980		80	0	2,325	0	0	29	0
GF	LEE 16-01S-05W	NIAGARAN	1964	CALHOUN, LEE-1S, 5W, 16	3842	3,174	22 D	--	PRAIRIE DU CHIEN	4,997	1	0	0	1	40	0	0	0	0	0	0
GF	LEE 16-01S-05W P/A	SALINA-NIAGARAN	1978	CALHOUN, LEE-1S, 5W, 16	3842	3,084	8 D	--	NIAGARAN	3,301	1	1	0	1	40	0	0	0	0	0	0
GF	LEE 16-01S-05W P/B	SALINA-NIAGARAN	1980	CALHOUN, LEE-1S, 5W, 16	3842	3,174	26 D	--	NIAGARAN	3,306	1	0	0	1	40	0	0	0	938	0	0
GF	LEE 16-01S-05W P/C	NIAGARAN	1982	CALHOUN, LEE-01S, 05W, 16	3842	3,119	10 D	--	NIAGARAN	3,360	1	0	0	1	40	0	0	150,574	355,955	0	0
AGF	LEE 17-01S-05W	SALINA-NIAGARAN	1972	CALHOUN, LEE-1S, 5W, 17	3842	3,074	10 D	--	PRAIRIE DU CHIEN	4,896	1		1973		160	0	512	0	40,825	3	0
AGF	LEE 18-01S-05W	NIAGARAN	1976	CALHOUN, LEE-1S, 5W, 18	3842	3,104	28 D	--	NIAGARAN	3,576	1		1979		160	0	0	0	36,235	0	0
OF	LEE 20-01S-05W	NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 20	3842	3,019	3 D	--	NIAGARAN	3,220	1	0	0	1	80	788	1,191	1,950	2,115	14	30
GF	LEE 20-01S-05W P/A	A1 CARBONATE	1982	CALHOUN, LEE-01S, 05W, 20	3842	3,031	8 D	--	NIAGARAN	3,236	1	1	0	1	40	0	0	102,129	102,129	0	0
GF	LEE 21-01S-05W	NIAGARAN	1978	CALHOUN, LEE-1S, 5W, 21	3842	3,066	6 D	--	NIAGARAN	3,306	1	0	0	1	40	0	0	0	11,884	0	0
OF	LEE 21-01S-05W P/A	NIAGARAN	1980	CALHOUN, LEE-1S, 5W, 21	3842	3,010	3 D	27	NIAGARAN	3,241	1	0	0	1	80	2,379	8,159	0	0	101	13
AGF	LEE 22-01S-05W	NIAGARAN	1976	CALHOUN, LEE-1S, 5W, 22	3842	3,037	15 D	--	NIAGARAN	3,125	2		1980		160	0	0	0	180,291	0	0
OF	LEE 23-01S-05W	SALINA-NIAGARAN	1979	CALHOUN, LEE-1S, 5W, 23	3842	3,096	40 D	32.5	NIAGARAN	3,323	2	0	1	1	80	15,748	122,309	12,620	113,016	1,528	2
OF	LEE 23-01S-05W P/A	NIAGARAN	1979	CALHOUN, LEE-1S, 5W, 23	3842	3,138	12 D	31.8	NIAGARAN	3,263	1	0	0	1	40	42,072	173,830	6,487	51,966	4,345	30
OF	LEE 23-01S-05W P/B	NIAGARAN	1980	CALHOUN, LEE-1S, 5W, 23	3842	3,162	21 D	--	NIAGARAN	3,248	1	0	0	1	40	13,687	76,730	3,083	18,449	1,918	4
OF	LEE 23-01S-05W P/C	A-1 CARBONATE	1980	CALHOUN, LEE-1S, 5W, 23	3842	3,070	10 D	--	NIAGARAN	3,253	1	0	0	1	40	9,342	39,516	1,687	9,496	987	40
GF	LEE 24-01S-05W	NIAGARAN	1978	CALHOUN, LEE-1S, 5W, 24	3842	3,148	10 D	--	NIAGARAN	3,338	2	1	1	1	80	0	0	19,574	164,818	0	0
GF	LEE 24-01S-05W P/A	NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 24	3842	3,093	27 D	--	NIAGARAN	3,251	2	0	0	2	120	0	0	377,592	493,425	0	0
OF	LEE 24-01S-05W P/B	NIAGARAN	1981	CALHOUN, LEE-1S, 5W, 24	3842	3,148	10 D	32	NIAGARAN	3,272	1	0	0	1	40	18,294	18,930	17,764	17,764	473	0
AUF	LEE 30-01S-05W	NIAGARAN	1975	CALHOUN, LEE-1S, 5W, 30	3842	2,950	8 D	--	NIAGARAN	3,040	1		1977		80	0	1,413	0	0	17	0
AGF	LEE 30-01S-05W P/A	NIAGARAN	1977	CALHOUN, LEE-1S, 5W, 30	3842	2,939	5 D	--	NIAGARAN	3,100	1		1980		80	0	0	0	13,755	0	0
OF	LEE 30-01S-05W P/B	A-1 CARBONATE	1977	CALHOUN, LEE-1S, 5W, 30	3842	2,988	6 D	37.6	NIAGARAN	3,104	2	0	0	2	160	4,546	53,942	0	0	337	38
GF	LEE 32-01S-05W	E UNIT	1975	CALHOUN, LEE-1S, 5W, 32	3842	2,557	48 D	37	NIAGARAN	3,415	3	0	1	2	240	1,278	5,233	17,643	166,231	21	5
GF	LEE 34-01S-05W	A-1 CARBONATE	1978	CALHOUN, LEE-1S, 5W, 34	3842	2,985	5 D	--	NIAGARAN	3,165	1	0	0	1	80	0	226	0	0	2	0
AOF	LEE TWP.	NIAGARAN	1961	CALHOUN, LEE-1S, 5W, 22	3842	3,060	20 D	24.2	PRAIRIE DU CHIEN	4,926	1		1972		80	0	SEE	ALBION etal	TRENTON-BLACK	RIVER	
OF	LEE, SEC. 33	TRAVERSE	1971	ALLEGAN, LEE-1N, 15W, 33	3639	1,155	5 L	--	TRAVERSE	1,160	2	0	0	1	20	0	6,087	0	0	304	0
AOF	LEE, SOUTH	TRAVERSE	1949	ALLEGAN, LEE-1N, 15W, 31	3639	1,171	1 L	--	TRENTON	2,960	12		1953		120	0	91,117	0	0	759	0
GF	LENOX 24-04N-14E	NIAGARAN	1977	MACOMB, LENOX-4N, 14E, 24	3740	2,780	8 D	--	NIAGARAN	2,900	1	0	0	1	40	0	0	89,082	468,604	0	0
OF	LENOX 36-04N-14E	NIAGARAN	1982	MACOMB, LENOX-04N, 14E, 36	3740	2,722	22 D	--	NIAGARAN	2,815	1	1	0	1	40	0	0	0	0	0	0
GF	LEONARD	NIAGARAN	1963	OAKLAND, ADDISON-5N, 11E, 15	3849	4,245	21 D	--	NIAGARAN	4,450	14	0	0	14	640	19,576	231,987	379,361	5,167,795	362	0
OF	LEROY	REED CITY	1965	OSCEOLA, LEROY-19N, 10W, 27	3561	3,796	4 D	--	REED CITY	3,800	2	0	0	2	80	1,437	50,331	0	0	629	1
OF	LESLIE 04-01N-01W	SALINA-NIAGARAN	1973	INGHAM, LESLIE-1N, 1W, 4	3826	3,775	46 D	--	NIAGARAN	4,390	1	0	0	1	80	1,362	24,867	0	0	310	5
AOF	LIME LAKE	PRAIRIE DU CHIEN	1960	HILLSDALE, WRIGHT-8S, 1W, 11	3697	3,461	5 D	44.6	PRAIRIE DU CHIEN	3,533	1		1965		20	0	7,842	0	0	392	0
OF	LINCOLN, SEC. 18	TRAVERSE	1957	ARENAC, LINCOLN-18N, 4E, 18	3495	2,717	1 L	--	DUNDEE	3,062	2	0	0	2	20	0	4,644	0	0	232	0
OF	LINCOLN, SEC. 27	DUNDEE	1974	ISABELLA, LINCOLN-13N, 4W, 27	3477	3,577	10 D	--	DUNDEE	3,711	2	0	0	2	80	451	16,170	0	0	202	15
AOF	LINCOLN, SEC. 31	DUNDEE	1963	ARENAC, LINCOLN-18N, 4E, 31	3495	2,942	10 D	34.9	DUNDEE	2,986	1		1968		10	SEE	LINCOLN,	SEC. 18		0	0
AGF	LOGAN	RICHFIELD	1941	MASON, LOGAN-17N, 15W, 9	3627	3,260	5 S	--	RICHFIELD	3,330	2		1975		80	0		0	13,555	0	0
GF	LOGAN	BEREA	1944	OGEMAW, LOGAN-22N, 4E, 17	3925	1,420	6 S	--	RICHFIELD		16	0	0	14	2,240	0		0	1,366,295	0	0
GF	LOGAN	WEIR	1949	OGEMAW, LOGAN-22N, 4E, 25	3925	1,230	11 S	--	RICHFIELD	4,537						SEE	LOGAN	BEREA			
OF	LUCHT	TRAVERSE	1949	BAY, PINCONNING-17N, 4E, 29	3622	2,230	3 L	37.2	DUNDEE	3,240	5	0	0	1	50	397	198,396	0	0	3,967	0
AOF	LUTHER	TRAVERSE	1965	LAKE, NEWKIRK-19N, 12W, 14	3570	2,565	2 L	42.0	REED CITY	3,362	1		1973		20	0	28,117	0	0	1,405	0
OF	LUTHER, NORTH	REED CITY	1970	LAKE, ELLSWORTH-19N, 11W, 8	3570	3,518	17 D	--	REED CITY	3,556	4	0	0	4	160	1,243	17,418	0	0	108	1
GF	LYNDON	DETROIT RIVER	1959	WASHTENAW, LYNDON-1S, 3E, 6	3838	1,733	11 D	--	TRENTON							SEE	LYNDON	TRAVERSE			0
GF	LYNDON	TRAVERSE	1958	WASHTENAW, LYNDON-1S, 3E, 7	3838	1,311	6 D	--	TRENTON	5,008	6	0	0	6	960	0	0	0	466,950	0	DOMESTIC
OF	LYON 08-01N-07E	NIAGARAN	1980	OAKLAND, LYON-1N, 7E, 8	3911	3,686	22 D	35.9	NIAGARAN	3,851	1	0	0	1	40	61,871	92,414	5,169	64,045	2,310	0
OF	LYON 17-01N-07E	NIAGARAN	1980	OAKLAND, LYON-1N, 7E, 17	3911	3,684	21 D	35.7	NIAGARAN	3,774	1	0	0	1	40	68,346	89,395	3,418	37,220	2,234	0
OF	LYON, SEC. 18	NIAGARAN	1979	OAKLAND, LYON-1N, 7E, 18	3911	3,616	28 D	35	NIAGARAN	3,917	2	0	0	2	120	18,245	67,906	0	0	565	1
OF	MACON CREEK	TRENTON-BLK. RIVER	1961	LENAWEE, MACON-5S, 5E, 23	3698	2,548	36 D	--	BLACK RIVER	3,303	1	0	0	1	40	0	1,062	0	0	26	0
OF	MANCELONA 25-29N-05W	NIAGARAN	1973	ANTRIM, MANCELONA-29N, 5W, 25	3821	6,449	8 D	33.6	NIAGARAN	6,764	1	0	0	1	80	10,790	282,814	0	30,495	3,535	20
OF	MANCELONA 26-29N-05W	NIAGARAN	1972	ANTRIM, MANCELONA-29N, 5W, 26	3821	6,499	61 D	40.7	NIAGARAN	6,850	1	0	0	1	80	14,851	246,194	0	35,116	3,077	70
OF	MANCELONA 33-29N-05W	NIAGARAN	1974	ANTRIM, MANCELONA-29N, 5W, 33	3821	6,538	10 D	44.6	NIAGARAN	6,810	2	0	0	1	80	29,710	190,080	113,271	734,247	2,376	131
G-C	MANCELONA 34-29N-05W	NIAGARAN	1974	ANTRIM, MANCELONA-29N, 5W, 34	3821	6,580	20 D	54.0	NIAGARAN	6,780	2	0	0	2	80	36,522	891,993	198,311	6,684,896	11,149	53
AGF	MANISTEE	SALINA	1959	MANISTEE, FILER-21N, 17W, 24	3832	3,616	94 D	--	NIAGARAN	4,165	1		1961		160	0	0	0	0	0	0
G-C	MANISTEE 04-21N-16W	NIAGARAN	1979	MANISTEE, MANISTEE-21N, 16W, 4	3809	4,377	11 L	--	NIAGARAN	5,813	1	0	0	1	80	1,251	6,220	148,600	856,240	77	0
OF	MANISTEE 01-22N-16W	NIAGARAN	1973	MANISTEE, MANISTEE-22N, 16W, 1	3809	4,283	254 D	58.6	NIAGARAN	4,807	2	0	0	2	320	55,355	700,487	74,408	214,369	2,189	0
OF	MANISTEE 01-22N-16W P/A	NIAGARAN	1975	MANISTEE, MANISTEE-22N, 16W, 1	3809	4,408	81 D	47.5	NIAGARAN	4,630	3	0	0	3	240	22,810	213,386	409,104	2,475,228	889	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION TESTED FORMATION OR POOL NAME	DEEPEST FORMATION TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	NUMBER OF WELLS COMP. IN 1982	NUMBER OF WELLS ABND. IN 1982	NUMBER OF WELLS ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	MANISTEE 02-22N-16W	NIAGARAN	1975	MANISTEE, MANISTEE-22N,16W,2	3809	4,245	15 D	--	NIAGARAN	4,558	1	0	0	1	80	3,518	225,023	11,245	153,788	2,812	43
OF	MANISTEE 02-22N-16W P/A	NIAGARAN	1978	MANISTEE, MANISTEE-22N,16W,2	3809	4,162	36 D	37.8	NIAGARAN	4,480	1	0	0	1	80	6,273	44,594	0	0	557	350
OF	MANISTEE 02-22N-16W P/B	NIAGARAN	1980	MANISTEE, MANISTEE-22N,16W,2	3809	4,344	7 D	41.9	NIAGARAN	4,500	1	0	0	1	80	25,133	51,537	23,908	39,001	644	212
OF	MANISTEE 03-22N-16W	NIAGARAN	1976	MANISTEE, MANISTEE-22N,16W,3	3809	4,135	46 D	--	NIAGARAN	4,365	2	0	0	1	160	1,501	6,295	0	959	39	209
OF	MANISTEE 12-22N-16W	NIAGARAN	1974	MANISTEE, MANISTEE-22N,16W,12	3809	4,701	17 D	45.0	NIAGARAN	4,844	3	0	0	3	240	136,835	941,838	300,103	1,374,705	3,924	30
OF	MANISTEE 12-22N-16W P/A	NIAGARAN	1981	MANISTEE, MANISTEE-22N,16W,12	3809	4,670	12 D	--	NIAGARAN	4,766	1	0	0	1	80	28,982	45,736	194,664	305,294	571	0
G-C	MANISTEE 13-22N-16W	SALINA-NIAGARAN	1976	MANISTEE, MANISTEE-22N,16W,13	3809	4,511	201 D	--	NIAGARAN	4,832	1	0	0	1	160	1,235	2,474	202,696	687,329	15	3
G-C	MANISTEE 13-22N-16W P/A	NIAGARAN	1976	MANISTEE, MANISTEE-22N,16W,13	3809	4,604	62 D	--	NIAGARAN	4,837	1	0	0	1	80	714	5,383	414,898	3,138,004	67	1
OF	MANISTEE 14-22N-16W	NIAGARAN	1977	MANISTEE, MANISTEE-22N,16W,14	3809	4,342	258 D	42.6	NIAGARAN	4,881	2	0	0	2	160	33,109	63,936	293,503	771,468	399	76
OF	MANISTEE 15-22N-16W	NIAGARAN	1974	MANISTEE, MANISTEE-22N,16W,15	3809	4,467	15 D	42.8	NIAGARAN	4,725	4	0	0	3	240	46,145	494,089	149,250	1,845,547	2,058	224
OF	MANISTEE 16-22N-16W	NIAGARAN	1975	MANISTEE, MANISTEE-22N,16W,16	3809	4,049	34 D	43.2	NIAGARAN	4,228	2	0	0	2	160	21,371	430,211	8,705	240,671	2,688	239
OF	MANISTEE 17-22N-16W	NIAGARAN	1976	MANISTEE, MANISTEE-22N,16W,17	3809	3,930	10 D	--	NIAGARAN	4,230	3	0	0	3	240	99,568	868,615	82,555	687,223	3,619	15
OF	MANISTEE 17-22N-16W P/A	NIAGARAN	1977	MANISTEE, MANISTEE-22N,16W,17	3809	4,116	69 D	47	NIAGARAN	4,285	1	0	0	1	80	12,471	161,739	7,891	82,410	2,021	17
OF	MANISTEE 17-22N-16W P/B	NIAGARAN	1982	MANISTEE, MANISTEE-22N,16W,17	3809	3,950	14 D	40	NIAGARAN	4,378	2	2	0	2	160	40,568	40,568	26,390	26,390	254	329
OF	MANISTEE 18-22N-16W	NIAGARAN	1977	MANISTEE, MANISTEE-22N,16W,18	3809	3,902	10 D	--	NIAGARAN	4,130	5	0	0	5	400	162,048	924,202	138,161	795,754	2,310	10
OF	MANISTEE 20-22N-16W	NIAGARAN	1975	MANISTEE, MANISTEE-22N,16W,20	3809	3,996	34 D	43.2	NIAGARAN	4,225	2	0	0	2	160	44,342	446,374	78,399	1,007,294	2,789	76
G-C	MANISTEE 23-22N-16W	NIAGARAN	1974	MANISTEE, MANISTEE-22N,16W,23	3809	4,220	277 D	68.0	NIAGARAN	4,680	4	0	0	4	480	7,200	73,912	2,851,473	11,146,522	153	1
G-C	MANISTEE 23-22N-16W P/A	NIAGARAN	1979	MANISTEE, MANISTEE-22N,16W,23	3809	4,325	227 D	57.7	NIAGARAN	4,713	2	0	0	2	160	5,043	20,812	1,341,814	3,339,465	130	1
G-C	MANISTEE 24-22N-16W	NIAGARAN	1974	MANISTEE, MANISTEE-22N,16W,24	3809	4,171	483 D	67.5	NIAGARAN	4,722	1	0	0	1	80	17,324	46,842	2,448,835	6,152,766	585	0
OF	MANISTEE 24-22N-16W P/A	NIAGARAN	1977	MANISTEE, MANISTEE-22N,16W,24	3809	4,677	7 D	44.2	NIAGARAN	4,776	2	0	0	2	160	49,130	272,454	332,349	915,354	1,702	6
G-C	MANISTEE 27-22N-16W	NIAGARAN	1974	MANISTEE, MANISTEE-22N,16W,27	3809	4,288	224 D	63.4	NIAGARAN	4,600	2	0	0	2	320	6,741	29,434	1,852,297	5,572,547	91	0
GF	MANISTEE 30-22N-16W	NIAGARAN	1976	MANISTEE, MANISTEE-22N,16W,30	3809	3,958	225 D	--	NIAGARAN	4,348	1	0	0	1	80	2,435	21,321	252,868	1,760,874	266	0
GF	MANISTEE 30-22N-16W P/A	NIAGARAN	1978	MANISTEE, MANISTEE-22N,16W,30	3809	4,021	146 D	--	NIAGARAN	4,330	3	0	0	3	240	2,588	34,706	395,566	3,519,920	144	0
AOF	MANISTEE 24-22N-17W	NIAGARAN	1978	MANISTEE, MANISTEE-22N,17W,24	3809	3,862	45 D	--	NIAGARAN	3,993	1		1979		80	0	1,882	0	0	23	0
OF	MANISTEE 25-22N-17W	NIAGARAN	1977	MANISTEE, MANISTEE-22N,17W,25	3809	4,040	66 D	45.6	NIAGARAN	4,230	4	0	0	4	320	102,759	395,474	433,738	1,376,759	1,235	30
OF	MANISTEE 36-22N-17W	NIAGARAN	1979	MANISTEE, MANISTEE-22N,17W,36	3809	3,844	91 D	43.5	NIAGARAN	4,574	6	2	0	6	400	167,547	329,510	143,807	265,029	823	139
OF	MANISTEE 36-22N-17W P/A	NIAGARAN	1980	MANISTEE, MANISTEE-22N,17W,36	3809	4,078	8 D	44.8	NIAGARAN	4,274	1	0	0	1	80	48,210	127,145	112,413	251,875	1,589	0
G-C	MAPLE FOREST 03-28N-03W	NIAGARAN	1976	CRAWFORD, MAPLE FOREST-28N,3W,3	3855	6,710	12 D	--	NIAGARAN	7,015	1	0	0	1	160	63,735	312,672	218,482	821,499	1,954	2
OF	MAPLE GROVE 01-23N-14W	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,1	3808	5,473	23 D	42.2	NIAGARAN	5,610	1	0	0	1	80	25,991	281,904	56,295	568,499	3,523	1
OF	MAPLE GROVE 01-23N-14W P/A	NIAGARAN	1982	MANISTEE, MAPLE GROVE-23N,14W,01	3808	5,818	6 D	44.6	NIAGARAN	5,870	2	2	0	2	160	68,510	77,848	0	0	487	1
AG-C	MAPLE GROVE 02-23N-14W	NIAGARAN	1973	MANISTEE, MAPLE GROVE-23N,14W,2	3808	5,055	52 D	70.6	NIAGARAN	5,498	2		1980		240	0	11,972	0	410,813	49	0
OF	MAPLE GROVE 03-23N-14W	NIAGARAN	1977	MANISTEE, MAPLE GROVE-23N,14W,3	3808	4,820	63 L	42.7	NIAGARAN	5,230	1	0	0	1	160	17,538	259,991	23,868	317,218	1,624	17
OF	MAPLE GROVE 04-23N-14W	NIAGARAN	1975	MANISTEE, MAPLE GROVE-23N,14W,4	3808	4,895	26 D	--	NIAGARAN	5,153	2	0	0	2	80	28,544	404,953	199,104	1,133,577	5,061	1
OF	MAPLE GROVE 05-23N-14W	NIAGARAN	1975	MANISTEE, MAPLE GROVE-23N,14W,5	3808	4,570	44 D	--	NIAGARAN	4,786	1	0	0	1	160	27,452	149,950	33,410	105,157	937	522
OF	MAPLE GROVE 06-23N-14W	NIAGARAN	1973	MANISTEE, MAPLE GROVE-23N,14W,6	3808	4,514	27 D	42.0	PRAIRIE DU CHIEN	6,360	8	0	0	8	560	207,349	2,376,334	366,268	1,658,515	4,243	836
OF	MAPLE GROVE 06-23N-14W P/A	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,6	3808	4,518	27 D	40.2	NIAGARAN	4,975	1	0	0	1	80	7,451	101,110	5,967	34,878	1,263	201
OF	MAPLE GROVE 07-23N-14W	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,7	3808	4,510	35 D	35.0	NIAGARAN	4,829	4	1	0	3	240	29,839	462,196	9,376	241,782	1,925	198
OF	MAPLE GROVE 08-23N-14W	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,8	3808	4,905	26 D	44.8	NIAGARAN	5,082	6	0	0	6	400	323,977	2,385,186	421,526	2,691,157	5,962	133
OF	MAPLE GROVE 09-23N-14W	SALINA-NIAGARAN	1973	MANISTEE, MAPLE GROVE-23N,14W,9	3808	4,590	366 D	72.8	NIAGARAN	5,295	2	0	0	2	240	7,436	56,195	158,236	1,122,830	234	0
OF	MAPLE GROVE 10-23N-14W	NIAGARAN	1973	MANISTEE, MAPLE GROVE-23N,14W,10	3808	4832	263 D	43.8	NIAGARAN	5,457	5	0	0	5	320	106,605	584,839	337,535	1,367,321	1,827	2
OF	MAPLE GROVE 10-23N-14W P/A	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,10	3808	5,058	32 D	44.9	NIAGARAN	5,386	2	1	0	2	160	47,808	312,991	81,395	470,549	1,956	2
OF	MAPLE GROVE 10-23N-14W P/B	NIAGARAN	1980	MANISTEE, MAPLE GROVE-23N,14W,10	3808	5,140	10 D	45.8	NIAGARAN	5,350	2	0	0	2	160	24,464	74,877	123,913	308,297	467	15
OF	MAPLE GROVE 12-23N-14W	NIAGARAN	1977	MANISTEE, MAPLE GROVE-23N,14W,12	3808	5,928	81 D	43.1	NIAGARAN	6,077	1	0	0	1	80	56,670	357,497	155,402	815,848	4,468	1
OF	MAPLE GROVE 16-23N-14W	NIAGARAN	1973	MANISTEE, MAPLE GROVE-23N,14W,16	3808	4,950	211 D	48.2	NIAGARAN	5,409	2	0	0	2	120	33,365	351,899	215,090	1,725,989	2,932	0
OF	MAPLE GROVE 17-23N-14W	NIAGARAN	1974	MANISTEE, MAPLE GROVE-23N,14W,17	3808	4,637	102 D	73.0	NIAGARAN	5,225	3	0	0	3	240	56,726	575,350	266,153	1,928,123	2,397	2
OF	MAPLE GROVE 17-23N-14W P/A	NIAGARAN	1977	MANISTEE, MAPLE GROVE-23N,14W,17	3808	4,845	37 D	51.7	NIAGARAN	5,010	2	0	0	2	160	111,390	763,588	216,592	1,014,466	4,772	428
G-C	MAPLE GROVE 19-23N-14W	NIAGARAN	1975	MANISTEE, MAPLE GROVE-23N,14W,19	3808	4,597	259 D	67.8	NIAGARAN	5,110	3	0	0	2	240	15,702	42,055	293,862	1,491,175	175	1
AOF	MAPLE GROVE 19-23N-14W P/A	NIAGARAN	1979	MANISTEE, MAPLE GROVE-23N,14W,19	3808	4,840	46 L	--	NIAGARAN	5,145	2		1982		160	0	12,341	0	728,848	77	0
G-C	MAPLE GROVE 20-23N-14W	NIAGARAN	1976	MANISTEE, MAPLE GROVE-23N,14W,20	3808	4,904	188 D	--	NIAGARAN	5,235	2	1	0	2	160	1,344	1,489	48,584	89,008	9	0
OF	MAPLE GROVE 20-23N-14W P/A	NIAGARAN	1978	MANISTEE, MAPLE GROVE-23N,14W,20	3808	5,068	8 D	46.8	NIAGARAN	5,260	2	1	1	1	120	4,600	11,675	14,451	49,434	97	50
GF	MAPLE GROVE 30-23N-14W	NIAGARAN	1977	MANISTEE, MAPLE GROVE-23N,14W,30	3808	4,598	281 D	--	NIAGARAN	5,190	1	0	0	1	80	2,262	19,454	103,573	1,413,431	243	0
GF	MAPLE VALLEY, SEC. 16	MICHIGAN STRAY	1958	MONTCALM, MAPLE VALLEY-11N,9W,16	3454	1,120	5 S	--	REED CITY	3,365	1	0	0	1	160	0	0	0	0	0	DOMESTIC
AGF	MARATHON	BEREA	1955	LAPEER, MARATHON-9N,9E,16	3775	1,449	18 S	--	RICHFIELD	3,172	4		1981		40	SEE	MARATHON	RICHFIELD		0	0
OF	MARATHON	DETROIT RIVER SZ	1969	LAPEER, MARATHON-9N,9E,16	3775	3,013	47 D	--	RICHFIELD						800	SEE	MARATHON	RICHFIELD			
OF	MARATHON	DUNDEE	1979	LAPEER, MARATHON-9N,9E,18	3775	2,629	5 D	36	RICHFIELD	3,220	2	0	0	2	80	7,941	27,525	0	0	344	12
OF	MARATHON	RICHFIELD	1971	LAPEER, MARATHON-9N,9E,18	3775	3,102	8 D	--	RICHFIELD		31	0	0	30	400	93,359	274,661	999,291	1,034,760	686	236
OF	MARILLA 06-23N-13W	NIAGARAN	1977	MANISTEE, MARILLA-23N,13W,6	3936	5,015	299 D	--	NIAGARAN	5,505	3	0	0	3	240	63,554	410,849	321,009	4,036,559	1,711	0
OF	MARINE CITY	SALINA-NIAGARAN	1955	ST. CLAIR, COTTRELLVILLE-3N,16E,10	3738	2,176	21 D	38.0	NIAGARAN	2,428	18	0	0	13	660	8,523	508,947	145,971	6,724,925	771	73
AOF	MARINE CITY, SOUTH	SALINA-NIAGARAN	1962	ST. CLAIR, COTTRELLVILLE-3N,16E,23	3738	2,100	4 D	38.7	NIAGARAN	2,261	17	0	0	13	600	3,043	170,917	26,552	4,253,451	284	5
AOF	MARNE	"BEREA"	1940	OTTAWA, TALLMADGE-7N,13W,5	3548	1,170	3 L	--	TRAVERSE	1,904	2		1946		20	0	6,253	0	0	312	0
AOF	MARTIN	TRAVERSE	1948	ALLEGAN, MARTIN-2N,11W,18	3502	1,617	1 L	36.0	ST. PETER SS.	4,290	2		1960		20	0	2,188	0	0	109	0
GF	MARTINY	MICHIGAN STRAY	1934	MECOSTA, MARTINY-15N,8W,23	3453	1,370	2 S	--	DETROIT RIVER	3,807	5	0	0	4	680	0	0	5,710	1,343,479	0	0
OF	MAYFIELD 01-25N-11W	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,1	3798	6,319	14 D	46.0	NIAGARAN	6,447	2	0	0	2	160	44,328	493,442	240,235	1,741,575	3,084	1
OF	MAYFIELD 01-25N-11W P/A	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,1	3798	6,474	16 D	45.2	NIAGARAN	6,634	1	0	0	1	160	106,694	644,130	91,524	799,820	4,025	0
G-C	MAYFIELD 01-25N-11W P/B	NIAGARAN	1980	GD. TRAVERSE, MAYFIELD-25N,11W,1	3798	6,314	13 D	66	NIAGARAN	6,500	2	0	0	1	80	55	46,976	117,165	1,197,603	587	0
G-C	MAYFIELD 03-25N-11W	NIAGARAN	1973	GD. TRAVERSE, MAYFIELD-25N,11W,3	3798	5,940	230 D	68.0	NIAGARAN	6,424	1	0	0	1	160	11,022	64,905	85,367	2,423,681	405	21
OF	MAYFIELD 03-25N-11W P/A	NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,3	3798	6,019	18 D	49.0	NIAGARAN	6,325	1	0	0	1	80	28,864	302,852	36,532	298,423	3,785	1
OF	MAYFIELD 03-25N-11W P/B	NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,3	3798	6,116	22 D	44.4	NIAGARAN	6,259	2	1	0	2	160	26,958	343,169	45,842	501,031	2,144	75
OF	MAYFIELD 04-25N-11W	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,4	3798	5,961	24 D	42.9	NIAGARAN	6,194	2	1	0	2	160	52,904	291,699	108,442	474,173	1,823	34
OF	MAYFIELD 04-25N-11W P/A	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,4	3798	5,847	24 D	42.9	NIAGARAN	6,196	2	0	0	2	160	56,253	375,419	64,631	268,018	2,346	293
OF	MAYFIELD 06-25N-11W	NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,6	3798	5,664	143 D	44	NIAGARAN	5,932	1	0	0	1	80	9,801	393,218	18,642	526,638	4,915	3
OF	MAYFIELD 07-25N-11W	NIAGARAN	1980	GD. TRAVERSE, MAYFIELD-25N,11W,7	3798	5,676	226 D	--	NIAGARAN	6,166	1	0	0	1	80	566	6,652	0	0	83	10
OF	MAYFIELD 08-25N-11W	NIAGARAN	1982	GD. TRAVERSE, MAYFIELD-25N,11W,8	3798	6,002	8 D	49	NIAGARAN	6,149	1	1	0	1	160	12,269	22,280	0	0	139	200
OF	MAYFIELD 09-25N-11W	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,9	3798	6,088	75 D	46.2	NIAGARAN	6,287	3	0	0	3	320	12,999	203,312	1,342	166,101	635	193
OF	MAYFIELD 10-25N-11W	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,10	3798	6,283	64 D	47.8	NIAGARAN	6,442	4	1	0	4	280	76,793	1,424,705	252,415	2,517,862	5,088	47

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION TESTED FORMATION OR POOL NAME	DEEPEST FORMATION TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	NUMBER OF WELLS COMP. IN 1982	NUMBER OF WELLS ABND. IN 1982	NUMBER OF WELLS ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	MAYFIELD 10-25N-11W P/A	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,10	3798	6,334	17 D	--	NIAGARAN	6,488	1	0	0	1	80	22,807	330,374	159,431	1,017,753	4,129	18
OF	MAYFIELD 10-25N-11W P/B	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,10	3798	6,183	31 D	44.8	NIAGARAN	6,381	3	0	0	3	80	26,844	202,192	11,975	147,149	2,527	223
G-C	MAYFIELD 11-25N-11W	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,11	3798	6,333	75 D	63.9	NIAGARAN	6,540	1	0	0	1	80	55	13,752	0	696,510	171	0
G-C	MAYFIELD 12-25N-11W	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,12	3798	6,171	325 D	60.4	NIAGARAN	6,677	1	0	0	1	160	1,056	58,149	364,373	4,965,458	363	0
G-C	MAYFIELD 12-25N-11W P/A	SALINA-NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,12	3798	6,449	43 D	61.5	NIAGARAN	6,685	1	0	0	1	80	283	25,440	194,810	2,602,807	318	1
G-C	MAYFIELD 13-25N-11W	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,13	3798	6,461	127 D	67.2	NIAGARAN	6,714	2	0	0	2	160	15,384	65,480	688,236	2,334,600	409	0
G-C	MAYFIELD 15-25N-11W	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,15	3798	6,446	134 D	--	NIAGARAN	6,671	2	0	0	2	160	8,092	203,753	213,060	4,174,525	1,273	0
OF	MAYFIELD 16-25N-11W	NIAGARAN	1972	GD. TRAVERSE, MAYFIELD-25N,11W,16	3798	6,341	68 D	47.9	NIAGARAN	6,580	3	0	0	3	240	195,653	1,770,314	308,653	2,438,788	7,376	7
OF	MAYFIELD 16-25N-11W P/A	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,16	3798	6,228	29 D	43.5	NIAGARAN	6,525	2	0	0	2	160	163,497	1,297,096	78,409	738,819	8,106	2
OF	MAYFIELD 17-25N-11W	SALINA-NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,17	3798	5,855	178 D	42.7	NIAGARAN	6,504	3	0	0	3	240	204,311	1,921,022	290,706	1,789,313	8,004	115
OF	MAYFIELD 18-25N-11W	NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,18	3798	5,874	17 D	45.0	NIAGARAN	5,969	3	0	0	3	240	212,702	1,350,972	145,663	1,107,721	5,629	15
OF	MAYFIELD 18-25N-11W P/A	NIAGARAN	1975	GD. TRAVERSE, MAYFIELD-25N,11W,18	3798	6,198	5 D	43.2	NIAGARAN	6,330	3	0	0	3	240	48,506	175,817	82,313	433,481	732	13
G-C	MAYFIELD 19-25N-11W	SALINA-NIAGARAN	1973	GD. TRAVERSE, MAYFIELD-25N,11W,19	3798	5,829	183 D	53.6	NIAGARAN	6,535	1	0	0	1	160	3,641	127,445	58,342	1,356,250	796	0
OF	MAYFIELD 19-25N-11W P/A	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,19	3798	6,093	96 D	45.8	NIAGARAN	6,265	1	0	0	1	80	1,932	88,554	24,721	906,205	1,106	0
AG-C	MAYFIELD 19-25N-11W P/B	SALINA-NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,19	3798	6,029	137 D	61.4	NIAGARAN	6,357	1		1980		80	0	833	0	20,462	10	0
OF	MAYFIELD 20-25N-11W	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,20	3798	6,241	51 D	45.0	NIAGARAN	6,365	3	0	0	3	240	52,076	917,884	218,567	2,534,166	3,824	5
OF	MAYFIELD 21-25N-11W	SALINA-NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,21	3798	6,112	428 D	66.5	NIAGARAN	6,608	5	0	0	4	320	30,633	1,010,050	325,264	8,991,436	3,156	45
G-C	MAYFIELD 22-25N-11W	NIAGARAN	1982	GD. TRAVERSE, MAYFIELD-25N,11W,22	3798	6,670	10 D	63.1	NIAGARAN	6,627	1	1	0	1	80	4,887	4,887	40,719	40,719	61	0
G-C	MAYFIELD 24-25N-11W	NIAGARAN	1973	GD. TRAVERSE, MAYFIELD-25N,11W,24	3798	6,508	153 D	65.7	NIAGARAN	6,783	2	0	0	2	360	21,104	544,641	2,723,549	19,148,188	1,512	5
G-C	MAYFIELD 26-25N-11W	NIAGARAN	1974	GD. TRAVERSE, MAYFIELD-25N,11W,26	3798	6,323	169 D	65.0	NIAGARAN	6,756	1	0	0	1	160	756	83,200	491,759	5,567,020	520	0
G-C	MAYFIELD 26-25N-11W P/A	NIAGARAN	1980	GD. TRAVERSE, MAYFIELD-25N,11W,26	3798	6,593	127 D	65	NIAGARAN	6,818	2	1	0	2	80	0	0	0	0	0	0
G-C	MAYFIELD 27-25N-11W	NIAGARAN	1978	GD. TRAVERSE, MAYFIELD-25N,11W,27	3798	6,547	62 D	64.4	NIAGARAN	6,767	1	0	0	1	80	0	4,310	0	113,709	53	0
G-C	MAYFIELD 27-25N-11W P/A	NIAGARAN	1979	GD. TRAVERSE, MAYFIELD-25N,11W,27	3798	6,527	105 L	62.2	NIAGARAN	6,821	1	0	0	1	80	22	1,245	2,936	47,721	15	0
OF	MAYFIELD 28-25N-11W	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,28	3798	6,430	19 D	49.4	NIAGARAN	6,580	1	0	0	1	160	37,290	280,134	159,765	888,260	1,750	0
G-C	MAYFIELD 28-25N-11W P/A	NIAGARAN	1980	GD. TRAVERSE, MAYFIELD-25N,11W,28	3798	6,546	32 D	71.5	NIAGARAN	6,695	1	1	0	1	160	70	70	0	0	1	0
OF	MAYFIELD 28-25N-11W P/B	NIAGARAN	1982	GD. TRAVERSE, MAYFIELD-25N,11W,28	3798	6,606	9 D	45.2	NIAGARAN	6,731	1	0	0	1	80	13,189	22,858	299,133	455,391	285	0
G-C	MAYFIELD 29-25N-11W	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,29	3798	6,012	119 D	70.2	NIAGARAN	6,621	1	0	0	1	160	0	1,219	0	58,482	7	0
OF	MAYFIELD 29-25N-11W P/A	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,29	3798	6,391	16 D	--	NIAGARAN	6,610	2	0	0	2	160	75,499	505,889	198,738	1,134,202	3,161	5
OF	MAYFIELD 29-25N-11W P/B	NIAGARAN	1980	GD. TRAVERSE, MAYFIELD-25N,11W,29	3798	6,309	150 D	46	NIAGARAN	6,576	1	0	0	1	160	17,199	34,217	102,373	163,600	213	133
OF	MAYFIELD 30-25N-11W	NIAGARAN	1973	GD. TRAVERSE, MAYFIELD-25N,11W,30	3798	6,329	45 D	45.5	NIAGARAN	6,630	2	0	0	1	160	3,875	91,435	407,950	2,637,708	571	1
G-C	MAYFIELD 31-25N-11W	NIAGARAN	1976	GD. TRAVERSE, MAYFIELD-25N,11W,31	3798	6,051	101 D	--	NIAGARAN	6,696	2	0	0	1	80	4,756	13,050	256,120	601,547	163	0
G-C	MAYFIELD 33-25N-11W	NIAGARAN	1977	GD. TRAVERSE, MAYFIELD-25N,11W,33	3798	6,478	54 D	63.6	NIAGARAN	6,671	1	0	0	1	80	153	2,793	25,593	96,628	34	0
AGF	MAYFIELD 33-25N-11W P/A	ANTRIM	1977	GD. TRAVERSE, MAYFIELD-25N,11W,33	3798	1,804	50 SH	--	NIAGARAN	6,746	1		1978		80	0	0	0	0	0	0
OF	MAYFIELD 33-25N-11W P/B	NIAGARAN	1981	GD. TRAVERSE, MAYFIELD-25N,11W,33	3798	6,654	8 D	--	NIAGARAN	6,768	1	0	0	1	80	0	199	0	0	2	0
OF	MCBAIN	DUNDEE	1959	MISSAUKEE, RIVERSIDE-21N,7W,19	3733	3,969	15 L	45.0	DUNDEE	3,973	24	0	0	22	920	32,691	3,404,962	0	0	3,701	9,225
GF	MCKAY	MICHIGAN STRAY	1929	CLARE, GRANT-17N,4W,6	3496	1,400	3 S	--	DETROIT RIVER	4,055	10	1	2	1	400	0	0	0	726,879	0	SHUT-IN
AOF	MEARS	DUNDEE	1949	OCEANA, GOLDEN-15N,18W,35	3933	2,210	3 L	32.2	REED CITY		3		1959		60	SEE	MEARS	TRAVERSE			0
AOF	MEARS	TRAVERSE	1951	OCEANA, GOLDEN-15N,18W,35	3933	1,745	3 DL	36.1	REED CITY	2,347	11		1959		110	0	105,807	0	0	961	0
AGF	MECOSTA	MICHIGAN STRAY	1966	MECOSTA, MORTON-14N,8W,10	3449	1,345	10 S	--	DUNDEE	3,709	2		1980		320	0	0	0	117,928	0	0
AGF	MECOSTA LAKE	MICHIGAN STRAY	1953	MECOSTA, MORTON-14N,8W,17	3449	1,314	12 S	--	DUNDEE	3,690	2		1956		320	0	0	0	85,752	0	0
OF	MEDINA	TRENTON-BLK. RIVER	1961	LENAWEE, MEDINA-8S,1E,3	3698	2,921	18 D	40	PRAIRIE DU CHIEN	3,487	1	0	0	1	40	149	4,947	0	0	123	0
GF	MIDDLE BRANCH	MICHIGAN STRAY	1964	OSCEOLA, MIDDLE BRANCH-19N,7W,17	3760	1,630	10 S	--	DETROIT RIVER	4,283	4		1977		640	0	0	0	261,891	0	0
OF	MILLS, SEC. 01	DUNDEE	1957	MIDLAND, MILLS-16N,2E,1	3494	3,450	2 D	--	DUNDEE	3,463	1	0	0	1	10	0	8,363	0	0	836	0
OF	MINERAL SPRINGS	DUNDEE	1951	OSCEOLA, SHERMAN-20N,9W,20	3656	3,854	7 D	44.5	DETROIT RIVER		12	0	0	1	240	828	313,621	0	0	1,306	60
AGF	MINERAL SPRINGS	MICHIGAN STRAY	1952	OSCEOLA, SHERMAN-20N,9W,20	3656	1,397	3 S	--	DETROIT RIVER	3,963	4		1960		480	0	0	0	233,337	0	0
OF	MIO	RICHFIELD	1946	OSCODA, MENTOR-25N,3E,30	3744	4,219	6 D	32.9	NIAGARAN	8,544	4	0	0	2	160	639	65,089	0	0	406	0
AOF	MOFFATT, SEC. 34	DUNDEE	1953	ARENAC, MOFFATT-20N,3E,34	3495	2,984	4 L	--	DUNDEE		1		1956		10	0	8,392	0	0	839	0
OF	MOFFATT, SEC. 34	TRAVERSE	1964	ARENAC, MOFFATT-20N,3E,34	3495	2,100	4 D	--	DUNDEE	3,027	1	0	0	1	10	0	403	0	0	40	0
AGF	MONTAGUE	SALINA-NIAGARAN	1953	MUSKEGON, MONTAGUE-12N,17W,7	3557	3,731	80 D	--	TRENTON	4,517	3		1970		480	0	0	0	42,312	0	0
OF	MONTEREY	TRAVERSE	1938	ALLEGAN, MONTEREY-3N,13W,16	3526	1,618	3 L	37.6	CINCINNATIAN	3,266	99	0	0	6	1,030	1,653	1,030,609	0	0	1,000	18
OF	MONTMORENCY 14-32N-01E	NIAGARAN	1978	MONTMORENCY, MONTMORENCY-32N,1E,14	3819	4,633	23 D	43	NIAGARAN	4,785	1	0	0	1	80	0	2,584	0	0	32	0
G-C	MONTMORENCY 29-32N-01E	NIAGARAN	1975	MONTMORENCY, MONTMORENCY-32N,1E,29	3819	4,794	24 D	72.3	NIAGARAN	4,939	1	0	0	1	80	0	47	0	0	0	0
GF	MORTON	MICHIGAN STRAY	1946	MECOSTA, MORTON-14N,8W,15	3449	1,279	2 S	--	DUNDEE	3,691	3	0	0	1	360	0	0	0	120,745	0	5
GF	MT. CLEMENS	SALINA	1961	MACOMB, MACOMB-3N,13E,34	3690	2,590	18 D	--	CAMBRIAN?	4,695	3	2	0	3	160	77	65	0	0	1	DOMESTIC
OF	MT. FOREST	DUNDEE	1947	BAY, MT. FOREST-17N,3E,13	3620	3,025	9 D	34.1	RICHFIELD		37	0	0	26	960	7,206	963,870	0	0	1,003	5
OF	MT. FOREST	TRAVERSE	1952	BAY, PINCONNING-17N,4E,18	3620	2,124	2 L	36.2	RICHFIELD	4,305	4	0	0	2	80	95	SEE	MT.	FOREST DUNDEE	FOR CUM.	10
AOF	MT. FOREST, SEC. 01	DUNDEE	1946	BAY, MT. FOREST-17N,3E,1	3620	2,960	2 L	--	DUNDEE	3,057	1		1946		10	0	1,906	0	0	190	0
AOF	MT. HALEY	DUNDEE	1934	MIDLAND, MT. HALEY-13N,1E,28	3494	3,477	3 D	39.6	DUNDEE	3,500	1		1947		10	0	36,069	0	0	3,606	0
OF	MT. PLEASANT	DUNDEE	1928	MIDLAND, GREENDALE-14N,2W,18	3095	3,545	15 L	41.8	SYLVANIA	4,821	489	4	0	142	5,730	79,722	28,496,762	0	7,965,509	4,973	577
AGF	MUSKEGON	TRAV-DD-DET. RIVER	1927	MUSKEGON, MUSKEGON-10N,16W,9	3229A	1,640	6 L	--	ST. PETER SS.	4,754	?		1979		1,520	0	0	0	7,237,438	DOMESTIC	& LEASE
OF	MUSKEGON	TRAVERSE & DUNDEE	1928	MUSKEGON, MUSKEGON-10N,16W,8	3229A	1,700	4 L	37.4	ST. PETER SS.		?	2	0	15	3,210	5,753	7,040,139	0	0	2,193	167
AOF	NELLSVILLE	DUNDEE	1957	ROSCOMMON, ROSCOMMON-22N,4W,17	3888	3,710	6 D	40.3	DETROIT RIVER	5,165	1		1967		10	0	16,528	0	0	1,652	0
OF	NELLSVILLE	RICHFIELD	1956	ROSCOMMON, ROSCOMMON-22N,4W,8	3888	4,932	17 D	42.2	DETROIT RIVER		2	0	0	2	80	3,210	48,198	0	0	584	29
OF	NELLSVILLE	TRAVERSE	1980	ROSCOMMON, ROSCOMMON-22N,4W,17	3888	3,000	10 L	--	DUNDEE	3,737	1	0	0	1	40	1,408	FOR	CUM SEE	RICHFIELD	POOL	8
AOF	NEW BOSTON	TRENTON	1943	WAYNE, HURON-4S,9E,18	3664	2,635	4 L	--	TRENTON	2,983	2		1949		20	0	2,349	0	0	117	0
OF	NEW LOTHROP	BEREA	1967	SHIAWASSEE, HAZELTON-8N,4E,12	3768	1,623	4 S	46	SYLVANIA	3,494	19	0	0	14	680	6,309	200,706	0	0	295	1
AOF	NEW RICHMOND	TRAVERSE	1965	ALLEGAN, MANLIUS-3N,15W,16	3502	1,364	1 L	--	TRAVERSE	1,365	1		1966		10	0	104	0	0	10	0
AGF	NEWARK	MICHIGAN STRAY	1948	GRATIOT, NEW HAVEN-10N,4W,25	3438	979	5 S	--	DUNDEE	3,255	6		1968		960	0	0	0	450,592	0	0
OF	NEWBURG	TRENTON	1979	LENAWEE, CLINTON-5S,4E,14	3698	3,150	20 D	39.5	PRAIRIE DU CHIEN	4,046	1	0	0	1	40	195	767	0	0	19	0
AOF	NILES	TRAVERSE	1940	BERRIEN, NILES-7S,17W,1	3621	602	7 L	21.5	TRENTON	2,089	7		1958		70	0	29,672	0	0	423	0
OF	NORTH ALLIS 29-35N-02E	NIAGARAN	1969	PRESQUE ISLE, NORTH ALLIS-35N,2E,29	3770	2,727	10 D	--	PRECAMBRIAN	5,940	1	0	0	1	40	0	5,782	0	0	144	0
AGF	NORTH MORENCI	TRAVERSE	1962	LENAWEE, SENECA-8S,2E,20	3754	638	2 D	--	PRAIRIE DU CHIEN	3,284	69		1980		2,840	0	0	0	105,140	0	0
AOF	NORTH PORTER	TRAVERSE	1930	CASS, PORTER-7S,13W,32	3710	660	2 L	37.0	TRENTON	2,382	2		1955		20	0	1,424	0	0	71	0
GF	NORTH STAR	MICHIGAN STRAY	1940	GRATIOT, NORTH STAR-10N,2W,4	3447	870	7 S	--	DUNDEE	3,100	1	0	0	1	40	0	0	0	594,417	0	0
AGF	NORTHVILLE	DUNDEE	1948	WASHTENAW, SALEM-1S,7E,1	3683	788	2 L	--	PRAIRIE DU CHIEN	5,850	4		1961		640	0	0	0	0	0	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	NORTHVILLE	NIAGARAN	1960	OAKLAND, LYON-1N,7E,34	3683	3,515	25 D	42.5	PRAIRIE DU CHIEN							SEE	NORTHVILLE	TRENTON	3,870,408		
GF	NORTHVILLE	SALINA-NIAGARAN	1937	WAYNE, PLYMOUTH-1S,8E,12	3683	2,905	2 D	--	PRAIRIE DU CHIEN					6	1,200	FACILITY	WELL FOR	GAS STORAGE	RESERVOIR		
OF	NORTHVILLE	TRENTON-BLK. RIVER	1954	WAYNE, PLYMOUTH-1S,8E,1	3683	4,395	70 D	39.8	PRAIRIE DU CHIEN					3	2,835	4,024	1,133,116	0	14,332,358	399	0
AGF	OLIVET	A-1 CARBONATE	1979	EATON, BELLEVUE-1N,6W,24	3725	3,444	5 D	38	GLENWOOD	5,004	1		1980		40	0	0	0	0	0	0
AUF	OLIVET	TRENTON-BLK. RIVER	1969	EATON, BELLEVUE-1N,6W,24	3725	4,450	5 D	--	PRAIRIE DU CHIEN	5,020	1		1971		20	0	340	0	0	17	0
OF	ONEKAMA 24-23N-16W	NIAGARAN	1979	MANISTEE, ONEKAMA-23N,16W,24	3936	4,291	7 D	--	NIAGARAN	4,485	2	1	0	2	160	29,738	82,233	117,683	258,559	513	71
OF	ONONDAGA 10-01N-02W	NIAGARAN	1971	INGHAM, ONONDAGA-1N,2W,10	3778	3,784	40 D	38.4	PRAIRIE DU CHIEN	5,744	17	0	0	15	1,040	271,664	7,404,228	507,271	8,480,562	7,119	16,026
OF	ONONDAGA 17-01N-02W	SALINA-NIAGARAN	1973	INGHAM, ONONDAGA-1N,2W,17	3778	3,620	50 D	--	NIAGARAN	3,850	1	0	0	1	80	4,227	263,402	9,872	210,588	3,292	28
OF	ONONDAGA 17-01N-02W P/A	SALINA-NIAGARAN	1975	INGHAM, ONONDAGA-1N,2W,17	3778	3,610	92 D	37	NIAGARAN	3,830	1	0	0	1	80	1,083	46,709	17,709	199,767	583	0
OF	ONONDAGA 17-01N-02W P/B	NIAGARAN	1978	INGAHM, ONONDAGA-1N,2W,17	3778	3,604	146 D	38	NIAGARAN	3,907	1	0	0	1	80	36,877	121,235	27,497	107,248	1,515	0
OF	ONONDAGA 18-01N-02W	NIAGARAN	1978	INGHAM, ONONDAGA-1N,2W,18	3778	3,686	46 D	--	NIAGARAN	3,820	2	0	0	2	160	16,521	200,500	23,177	174,445	1,253	0
GF	ONONDAGA 18-01N-02W P/A	SALINA-NIAGARAN	1978	INGHAM, ONONDAGA-1N,2W,18	3778	3,597	15 D	--	NIAGARAN	3,700	1	0	0	1	80	0	0	5,823	36,858	0	0
OF	ONONDAGA 19-01N-02W	NIAGARAN	1981	INGHAM, ONONDAGA-1N,2W,19	3778	3,600	5 D	33	NIAGARAN	3,678	1	0	0	1	80	1,549	3,549	0	0	44	0
OF	ONONDAGA 20-01N-02W	NIAGARAN	1976	INGHAM, ONONDAGA-1N,2W,20	3778	3,569	5 D	--	NIAGARAN	3,710	1	0	0	1	160	861	15,525	0	0	97	1
OF	ONONDAGA 20-01N-02W P/A	NIAGARAN	1979	INGHAM, ONONDAGA-1N,2W,20	3778	3,584	6 D	--	NIAGARAN	3,735	1	0	0	1	80	2,034	14,043	0	0	175	0
OF	ONONDAGA 21-01N-02W U/A	NIAGARAN	1971	INGHAM, ONONDAGA-1N,2W,21	3778	3,629	31 D	33.2	MANITOULIN	4,125	12	0	0	10	920	7,851	1,681,372	25,105	4,705,269	1,827	1,161
OF	ONONDAGA 21-01N-02W U/B	NIAGARAN	1972	INGHAM, ONONDAGA-1N,2W,22	3778	3,688	24 D	34	NIAGARAN	4,170	8	0	0	4	520	131,014	1,917,218	65,375	1,602,984	3,686	1,729
G-C	ORION 36-04N-10E	NIAGARAN	1982	OAKLAND, ORION-04N,10E,36	3665	3,894	14 D	--	NIAGARAN	4,206	2	2	0	2	120	0	0	0	0	0	0
AOF	OTISVILLE	BEREA	1949	GENESEE, FOREST-9N,8E,5	3701	1,446	5 S	--	DUNDEE	2,694	1		1956		10	SEE	OTISVILLE	DUNDEE			
OF	OTISVILLE	DUNDEE	1944	GENESEE, FOREST-9N,8E,6	3701	2,450	3 L	37.0	DUNDEE		5	0	0	3	50	688	36,766	0	0	735	7
AOF	OTISVILLE	TRAVERSE	1941	GENESEE, FOREST-9N,8E,5	3701	1,895	2 L	--	DUNDEE		1		1946		10	SEE	OTISVILLE	DUNDEE			
GF	OTSEGO	ANTRIM	1940	OTSEGO, BAGLEY-30N,3W,34	3792	1,385	4 SH	--	DUNDEE	3,944	10	0	0	4	840	0	0	67,693	1,095,852	0	120
AUF	OTSEGO	TRAVERSE	1938	ALLEGAN, OTSEGO-1N,12W,30	3502	1,532	1 L	--	TRAVERSE	1,600	7		1972		110	0	2,290	0	0	20	0
OF	OTSEGO LAKE 02-29N-03W	NIAGARAN	1978	OTSEGO, OTSEGO LAKE-29N,3W,2	3793	6,448	126 D	47.3	NIAGARAN	6,665	1	0	0	1	80	104,658	493,698	85,316	424,191	6,171	0
OF	OTSEGO LAKE 03-29N-03W	SALINA-NIAGARAN	1971	OTSEGO, OTSEGO LAKE-29N,3W,3	3793	6,272	122 D	44.2	NIAGARAN	6,860	3	0	0	2	120	26,548	809,990	223,859	2,035,629	6,749	0
OF	OTSEGO LAKE 11-29N-03W	NIAGARAN	1977	OTSEGO, OTSEGO LAKE-29N,3W,11	3793	6,628	10 D	44.1	NIAGARAN	6,725	3	0	0	3	200	80,850	672,734	247,419	1,092,491	3,363	5
OF	OTSEGO LAKE 20-29N-03W	NIAGARAN	1978	OTSEGO, OTSEGO LAKE-29N,3W,20	3793	6,412	65 D	47.5	NIAGARAN	6,778	1	0	0	1	80	0	214	SHUT-IN	0	2	0
OF	OTSEGO LAKE 24-29N-03W	NIAGARAN	1977	OTSEGO, OTSEGO LAKE-29N,3W,24	3793	6,561	36 D	49.8	NIAGARAN	6,803	1	0	0	1	160	30,079	193,119	144,275	550,975	1,206	0
OF	OTSEGO LAKE 26-29N-03W	NIAGARAN	1975	OTSEGO, OTSEGO LAKE-29N,3W,26	3793	6,810	12 D	52.7	NIAGARAN	6,968	1	0	0	1	80	19,198	22,914	70,363	70,363	286	0
OF	OTSEGO LAKE 31-29N-03W	NIAGARAN	1977	OTSEGO, OTSEGO LAKE-29N,3W,31	3793	6,392	148 D	42.2	NIAGARAN	6,848	1	0	0	1	114	0	350	SHUT-IN	0	3	0
OF	OTSEGO LAKE 35-29N-03W	SALINA-NIAGARAN	1977	OTSEGO, OTSEGO LAKE-29N,3W,35	3793	6,412	368 D	64.2	NIAGARAN	7,115	3	0	0	3	240	28,086	159,790	405,856	1,511,743	665	0
GF	OTSEGO LAKE, SEC. 22	ANTRIM	1977	OTSEGO, OTSEGO LAKE-29N,3W,22	3793	1,500	774 SH	--	ANTRIM	1,600	16	2	0	16	600	0	0	235,133	529,707	0	625
AOF	OTSEGO, SEC. 09	TRAVERSE	1950	ALLEGAN, OTSEGO-1N,12W,9	3502	1,456	1 L	--	TRAVERSE	1,457	4		1951		40	0	681	0	0	17	0
OF	OTTER LAKE	BEREA	1945	GENESEE, FOREST-9N,8E,12	3775	1,502	4 S	35.5	DETROIT RIVER	3,142	10	0	0	6	110	1,502	100,244	0	0	911	6
OF	OTTER LAKE	DETROIT RIVER	1970	GENESEE, FOREST-9N,8E,11	3775	2,968	10 D	--	DETROIT RIVER		11	0	0	11	440	17,734	263,071	58,483	58,483	597	35
OF	OTTER LAKE	RICHFIELD	1981	GENESEE, FOREST-9N,8E,13	3775	3117	6 D	--	RICHFIELD		1		1982		40	SEE	OTTER	LAKE	DETROIT	RIVER	0
AUF	OTTO, SEC. 30	"BEREA"	1958	OCEANA, OTTO-13N,16W,19	3455	1,428	9 S	--	TRAVERSE	1,860	2		1960		10		SEE	OTTO	SECTION 32		0
AOF	OTTO, SEC. 30	TRAVERSE	1955	OCEANA, OTTO-13N,16W,30	3455	1,857	3 L	--	TRAVERSE		1		1960		20		SEE	OTTO	SECTION 32		0
AUF	OTTO, SEC. 32	"BEREA"	1950	OCEANA, OTTO-13N,16W,32	3455	1,445	1 L	--	TRAVERSE	1,895	2		1976		10	0	4,308	0	0	430	0
OF	OVERISEL	TRAVERSE	1938	ALLEGAN, OVERISEL-4N,14W,21	3531	1,478	3 L	42.1	TRENTON	4,060	164	0	0	22	1,770	9,308	3,040,833	0	0	1,717	214
AOF	OVERISEL, SEC. 11	TRAVERSE	1940	ALLEGAN, OVERISEL-4N,14W,11	3531	1,553	4 L	--	TRAVERSE	1,578	1		1944		10	0	6,370	0	0	637	0
OF	OXBOW	TRAVERSE	1958	MASON, RIVERTON-17N,17W,26	3716	1,652	1 L	35.4	REED CITY	2,354	4	0	0	2	40	0	92,426	0	0	2,310	0
AGF	PARADISE	TRAVERSE	1965	GD. TRAVERSE, PARADISE-25N,10W,16	3795	1,889	8 L	--	DUNDEE	1,897	3		1978		400	0	0	0	0	0	0
G-C	PARADISE 03-25N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-25N,10W,3	3795	6,519	183 D	67	NIAGARAN	6,890	1	0	0	1	160	54	17,627	94,397	859,405	110	0
G-C	PARADISE 03-25N-10W P/A	NIAGARAN	1981	GD. TRAVERSE, PARADISE-25N,10W,3	3795	6,745	15 D	--	NIAGARAN	6,904	1	0	0	1	80	0	0	0	0	0	0
G-C	PARADISE 07-25N-10W	NIAGARAN	1980	GD. TRAVERSE, PARADISE-25N,10W,7	3795	6,120	220 D	59.7	NIAGARAN	6,683	2	0	0	2	160	0	0	0	0	0	0
GF	PARADISE 08-25N-10W	NIAGARAN	1979	GD. TRAVERSE, PARASISE-25N,10W,8	3795	6,551	52 L	--	NIAGARAN	6,603	3	0	0	3	160	2,602	4,243	125,417	187,780	26	0
OF	PARADISE 17-25N-10W	NIAGARAN	1979	GD. TRAVERSE, PARADISE-25N,10W,17	3795	6,451	148 L	49.5	NIAGARAN	6,769	1	0	0	1	160	0	337	0	0	2	0
G-C	PARADISE 18-25N-10W	NIAGARAN	1973	GD. TRAVERSE, PARADISE-25N,10W,18	3795	6,455	102 D	65.8	NIAGARAN	6,841	4	0	0	4	260	3,506	32,599	499,007	1,830,117	125	2
OF	PARADISE 19-26N-10W	SALINA-NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N,10W,19	3795	5,750	102 D	43.8	NIAGARAN	6,034	1	0	0	1	80	5,608	61,617	7,581	227,099	770	73
OF	PARADISE 19-26N-10W P/A	NIAGARAN	1977	GD. TRAVERSE, PARADISE-26N,10W,19	3795	5,839	34 D	42	NIAGARAN	6,070	1	0	0	1	80	59,163	484,477	165,885	636,773	6,055	0
OF	PARADISE 20-26N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N,10W,20	3795	6,027	25 D	57	NIAGARAN	6,252	1	0	0	1	80	23	22,993	12,502	512,179	287	0
OF	PARADISE 20-26N-10W P/A	NIAGARAN	1979	GD. TRAVERSE, PARADISE-26N,10W,20	3795	5,786	274 D	44.2	NIAGARAN	6,087	2	0	0	2	160	14,602	63,712	19,436	96,938	398	8
OF	PARADISE 21-26N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N,10W,21	3795	5,848	6 D	40	NIAGARAN	6,198	3	0	0	3	240	145,079	1,457,741	388,156	2,007,403	6,073	139
G-C	PARADISE 23-26N-10W	NIAGARAN	1974	GD. TRAVERSE, PARADISE-26N,10W,23	3795	6,310	27 D	70.5	NIAGARAN	6,588	1	0	0	1	80	1,222	149,791	607,104	6,742,062	1,872	0
G-C	PARADISE 24-26N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N-10W,24	3795	6,214	161 D	64.9	NIAGARAN	6,476	1	0	0	1	80	626	56,335	185,890	1,620,738	704	0
G-C	PARADISE 25-26N-10W	NIAGARAN	1977	GD. TRAVERSE, PARADISE-26N,10W,25	3795	6,554	46 D	63.1	NIAGARAN	6,751	2	0	0	2	160	365	39,393	79,455	1,247,108	246	0
G-C	PARADISE 26-26N-10W	NIAGARAN	1976	GD. TRAVERSE, PARADISE-26N,10W,26	3795	6,422	55 D	61.4	NIAGARAN	6,585	1	0	0	1	160	125	28,163	58,936	2,023,710	176	0
G-C	PARADISE 26-26N-10W P/A	NIAGARAN	1980	GD. TRAVERSE, PARADISE-26N,10W,26	3795	6,594	114 D	--	NIAGARAN	6,851	2	1	0	2	160	1,489	3,528	118,602	274,911	22	0
OF	PARADISE 27-26N-10W	SALINA-NIAGARAN	1976	GD. TRAVERSE, PARADISE-26N,10W,27	3795	6,060	230 D	46.3	NIAGARAN	6,448	3	0	0	3	240	8,162	82,079	22,855	302,493	341	4
G-C	PARADISE 27-26N-10W P/A	NIAGARAN	1979	GD. TRAVERSE, PARADISE-26N,10W,27	3795	6,317	127 L	--	NIAGARAN	6,584	1	0	0	1	80	2,336	6,632	55,361	158,469	82	0
G-C	PARADISE 28-26N-10W	NIAGARAN	1979	GD. TRAVERSE, PARADISE-26N,10W,28	3795	6,000	230 L	--	NIAGARAN	6,470	1	0	0	1	80	619	2,450	18,370	62,838	30	0
G-C	PARADISE 31-26N-10W	SALINA-NIAGARAN	1974	GD. TRAVERSE, PARADISE-26N,10W,31	3795	6,257	97 D	68.4	NIAGARAN	6,534	1	0	0	1	80	167	134,503	44,863	3,186,987	1,681	0
G-C	PARADISE 32-26N-10W	NIAGARAN	1974	GD. TRAVERSE, PARADISE-26N,10W,32	3795	6,087	231 D	60.0	NIAGARAN	6,582	2	0	0	2	160	156	11,061	6,288	139,842	69	0
G-C	PARADISE 33-26N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N,10W,33	3795	6,903	202 D	66.5	NIAGARAN	6,627	2	0	0	2	80	2,944	16,398	14,552	244,212	204	0
AOF	PARADISE 33-26N-10W P/A	SALINA-NIAGARAN	1976	GD. TRAVERSE, PARADISE-26N,10W,33	3795	6,000	158 D	50.3	NIAGARAN	6,595	1		1982		80	43	49,373	501	407,905	617	0
G-C	PARADISE 34-26N-10W	NIAGARAN	1975	GD. TRAVERSE, PARADISE-26N,10W,34	3795	6,332	236 D	70	NIAGARAN	6,808	1	0	0	1	80	945	6,903	52,236	379,943	86	3
G-C	PARADISE 35-26N-10W	NIAGARAN	1977	GD. TRAVERSE, PARADISE-26N,10W,35	3795	6,655	30 D	63.3	NIAGARAN	6,750MD	2	0	0	2	160	185	38,273	185,852	1,937,153	239	0
AGF	PARIS	DUNDEE	1949	MECOSTA, GREEN-16N,10W,28	3653	3,404	5 L	--	REED CITY		2		1959		20	0	0	0	267,208	0	0
GF	PARIS	MICHIGAN STRAY	1951	MECOSTA, GREEN-16N,10W,21	3653	1,217	5 S	--	REED CITY	3,545	2	0	0	1	560	0	0	0	383,075	0	DOMESTIC
OF	PARIS	TRAVERSE	1949	MECOSTA, GREEN-16N,10W,21	3653	2,890	10 D	43.6	REED CITY		22	0	0	10	440	6,749	1,328,844	0	0	3,020	636
AOF	PAW PAW	TRAVERSE	1963	VAN BUREN, PAW PAW-3S,14W,2	3758	1,096	2 L	41.4	TRENTON	2,912	9	1	0	1	200	79	20,288	0	0	101	10
OF	PAW PAW, SEC. 33	TRAVERSE	1964	VAN BUREN, PAW PAW-3S,14W,33	3758	1,028	1 L	38.0	TRAVERSE	1,032	1		1972		10	0	0	0	0	0	0
AOF	PEACOCK	REED CITY	1966	LAKE, PEACOCK-19N,13W,7	3769	3,001	4 D	--	REED CITY		1		1974		40	0	4,442	0	0	111	0
OF	PEACOCK	TRAVERSE	1966	LAKE, PEACOCK-19N,13W,9	3769	2,292	2 L	34.0	REED CITY	3,047	27	0	1	15	1,060	61,773	1,562,616	0	0	1,474	1,014

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
AOF	PECKS LAKE	DUNDEE	1967	OSCEOLA, EVART-17N,8W,18	3766	3,866	2 L	--	REED CITY	3,854	1		1969		40	0	2,885	0	0	72	0
OF	PENNFIELD 21-01S-07W	SALINA-NIAGARAN	1975	CALHOUN, PENNFIELD-1S,7W,21	3843	2,743	48 D	27.2	NIAGARAN	2,850	2	0	0	2	160	8,634	93,105	0	0	581	470
OF	PENNFIELD 21-01S-07W P/A	NIAGARAN	1979	CALHOUN, PENNFIELD-1S,7W,21	3843	2,824	31 D	25.6	NIAGARAN	3,000	1	0	0	1	80	16,590	76,826	0	0	960	17
OF	PENNFIELD 29-01S-07W	SALINA-NIAGARAN	1973	CALHOUN, PENNFIELD-1S,7W,29	3843	2,676	70 D	--	NIAGARAN	3,001	2	0	0	2	160	16,086	306,801	0	0	1,917	20
OF	PENNFIELD 29-01S-07W P/A	SALINA-NIAGARAN	1976	CALHOUN, PENNFIELD-1S,7W,29	3843	2,681	113 D	18	NIAGARAN	2,815	1	0	0	1	80	3,415	59,005	0	0	737	100
OF	PENNFIELD 35-01S-07W	SALINA-NIAGARAN	1974	CALHOUN, PENNFIELD-1S,7W,35	3843	2,840	26 D	23.6	NIAGARAN	3,320	13	0	0	10	880	106,785	2,036,036	15,697	428,704	2,313	2,961
GF	PENTWATER	A-2 CARBONATE	1973	OCEANA, WEARE-16N,17W,8	3934	3,470	40 L	--	PRAIRIE DU CHIEN		2	0	0	1	0	0	0	SHUT-IN	0	0	0
OF	PENTWATER	DUNDEE	1948	OCEANA, WEARE-16N,17W,6	3625	2,088	10 D	43.1	PRAIRIE DU CHIEN						2,000	1,989	6,824,988	0	1,005,224	3,406	351
OF	PENTWATER	TRAVERSE	1948	OCEANA, WEARE-16N,17W,6	3625	1,585	8 L	40.4	PRAIRIE DU CHIEN	5,383	143	0	0	47	1,400	11,695	SEE	PENTWATER	DUNDEE		0
OF	PENTWATER LAKE	TRAVERSE	1969	OCEANA, PENTWATER-16N,18W,26	3934	1,612	2 L	--	NIAGARAN	4,078	3	0	0	3	120	129	111,259	0	0	927	45
OF	PETERS	SALINA-NIAGARAN	1955	ST. CLAIR, CASCO-4N,15E,22	3737	2,386	47 D	39.0	NIAGARAN	2,842	89	0	0	63	1,780	64,139	5,698,907	464,388	21,691,813	3,201	279
OF	PETERS, EAST	SALINA-NIAGARAN	1961	ST. CLAIR, CASCO-4N,15E,24	3737	2,590	17 D	41.6	NIAGARAN	2,777	9	0	0	8	360	SEE	PETERS				54
OF	PINCONNING	DUNDEE	1944	BAY, FRASER-16W,4E,2	3622	2,898	7 D	36.2	DETROIT RIVER		12	0	0	2	100	2,364	897,876	0	0	8,978	101
AOF	PINCONNING	TRAVERSE	1953	BAY, PINCONNING-17N,4E,25	3622	2,151	1 L	--	DETROIT RIVER	3,790	1		1960		10	SEE	PINCONNING	DUNDEE			0
AOF	PINE	TRAVERSE	1938	MONTCALM, PINE-11N,8W,29	3454	2,836	1 L	45.0	DUNDEE	3,308	2		1963		20	0	105,506	0	0	5,275	0
AOF	PINE RIVER	DUNDEE	1942	GRATIOT, PINE RIVER-12N,3W,31	3447	3,280	2 L	--	DUNDEE		2		1956		90	0	13,285	0	0	147	0
AOF	PINE RIVER	TRAVERSE	1956	GRATIOT, SEVILLE-12N,4W,36	3447	2,890	5 L	--	DUNDEE	3,285	1		1958		10	0	760	0	0	76	0
GF	PINE, SECS. 09 & 17	MICHIGAN STRAY	1951	MONTCALM, PINE-11N,8W,9	3454	1,251	1 S	--	DUNDEE	3,469	2	0	0	2	80	0	0	0	38,017	0	DOMESTIC
GF	PIONEER	TRAVERSE	1931	MISSAUKEE, PIONEER-24N,7W,24	3564	3,025	5 L	--	DUNDEE	3,583	1	0	0	1	40	0	0	SHUT-IN	0	0	0
OF	PIPESTONE	TRAVERSE	1962	BERRIEN, PIPESTONE-5S,17W,24	3621	822	2 L	22.4	NIAGARAN	1,353	6	4	0	4	180	638	723	0	0	4	3
OF	PITTSFORD, SEC. 07	BLACK RIVER	1982	HILLSDALE, PITTSFORD-07S,01W,07	3908	3,816	8 D	--	BLACK RIVER	3,850	1	1	0	1	40	0	0	0	0	0	0
OF	PITTSFORD, SEC. 29	BLACK RIVER	1982	HILLSDALE, PITTSFORD-07S,01W,29	3908	3,510	8 D	--	BLACK RIVER	3,851	1	1	0	1	40	0	0	0	0	0	0
OF	PLEASANTON 25-24N-15W	NIAGARAN	1977	MANISTEE, PLEASANTON-24N,15W,25	3807	4,490	7 D	39.3	NIAGARAN	4,775	1	0	0	1	80	8,398	97,184	0	16,879	1,214	229
OF	PLEASANTON 36-24N-15W	NIAGARAN	1974	MANISTEE, PLEASANTON-24N,15W,36	3807	4,474	16 D	40.6	NIAGARAN	4,620	5	1	1	3	160	76,949	1,131,351	28,531	641,839	7,070	179
OF	POLKTON	TRAVERSE	1942	OTTAWA, POLKTON-8N,14W,15	3756	1,878	2 L	37.8	DUNDEE	2,351	13	0	0	3	170	2,120	88,314	0	0	519	2
OF	PONTIAC 25-03N-10E	NIAGARAN	1980	OAKLAND, PONTIAC-3N,10E,25	3665	3,663	5 D	--	NIAGARAN	3,563	1	0	0	1	160	1,903	5,099	0	0	31	6
AOF	PORT HURON	DUNDEE	1886	ST. CLAIR, PORT HURON-6N,17E,32	3689	575	20 L	--	CAMBRIAN	4,948	21		1921		15	0	0	0	0	0	0
GF	PORT HURON 31-07N-17E	NIAGARAN	1975	ST. CLAIR, PORT HURON-7N,17E,31	3689	3,242	55 D	--	NIAGARAN	3,297	1	0	0	1	40	0	0	508	10,187	0	0
GF	PORT HURON 33-07N-17E	NIAGARAN	1971	ST. CLAIR, PORT HURON-7N,17E,33	3689	3,160	10 D	--	NIAGARAN	3,185	1	0	0	1	160	0	0	2,877	21,875	0	0
OF	PORTER	BEREA	1981	MIDLAND, PORTER-13N,1W,10	3309A	2,301	35 S	--	BLACK RIVER	9,519	1	0	0	1	10	581	581	0	0	58	4
OF	PORTER	DUNDEE	1933	MIDLAND, PORTER-13N,1W,22	3309A	3,415	12 L	40.6	BLACK RIVER		553	0	0	126	6,740	73,810	50,266,829	0	4,965,878	7,457	6,450
OF	PROSPER	DUNDEE	1942	MISSAUKEE, AETNA-22N,6W,26	3588	3,837	4 L	43.2	AMHERSTBURG		13	0	0	6	520	10,659	1,866,619	0	0	3,589	3,140
GF	PROSPER	MICHIGAN STRAY	1948	MISSAUKEE, CLAM UNION-21N,6W,2	3877	1,269	6 S	--	AMHERSTBURG	5,280	3	0	0	2	480	0	0	0	155,940	0	LEASE FUEL
AOF	PROSPER	RICHFIELD	1954	MISSAUKEE, AETNA-22N,6W,35	3588	5,128	21 D	--	AMHERSTBURG		1		1957		40	0	7,088	0	0	177	0
OF	PROSPER	TRAVERSE	1980	MISSAUKEE, AETNA-22N,6W,35	3588	3,176	1 L	--	AMHERSTBURG		3	0	0	3	120	6,896	11,238	0	0	93	202
OF	PROSPER, SOUTH	DUNDEE	1967	MISSAUKEE, AETNA-22N,6W,36	3588	3,798	8 D	--	AMHERSTBURG	5,240	7	0	0	6	280	18,613	999,885	0	0	3,571	970
OF	PROSPER, SOUTH	RICHFIELD	1979	MISSAUKEE, AETNA-22N,6W,36	3588	5,088	16 D	44	AMHERSTBURG		1	0	0	1	40	0	1,377	0	0	34	0
GF	PULAWSKI 12-34N-06E	SALINA-NIAGARAN	1976	PRESQUE ISLE, PULAWSKI-34N,6E,12	3858	2,369	76 D	--	NIAGARAN	2,840	2	0	0	2	160	0	0	SHUT-IN	0	0	0
AUF	PULLMAN	TRAVERSE	1949	ALLEGAN, CASCO-1N,16W,11	3604	1,185	1 L	--	BASS ISLANDS	1,942	9		1951		90	0	26,840	0	0	298	0
AGF	PULLMAN, EAST	A-2 CARBONATE	1961	ALLEGAN, LEE-1N,15W,5	3639	1,645	7 D	--	TRENTON		3		1968		480	0	0	0	27,770	0	0
OF	PULLMAN, EAST	TRAVERSE	1949	ALLEGAN, LEE-1N,15W,6	3639	1,131	2 L	39.0	TRENTON	3,020	25	0	0	10	250	742	401,058	0	0	1,604	44
AOF	RABBIT RIVER	TRAVERSE	1950	ALLEGAN, SALEM-4N,13W,32	3501	1,655	3 L	--	TRAVERSE	1,678	8		1959		80	0	12,745	0	0	159	0
G-C	RAPID RIVER 05-28N-07W	NIAGARAN	1976	KALKASKA, RAPID RIVER-28N,7W,5	3781	5,915	10 D	--	NIAGARAN	6,197	3	0	0	3	480	1,147	34,380	44,058	889,707	71	129
AUF	RAPID RIVER 17-28N-07W	TRAVERSE	1972	KALKASKA, RAPID RIVER-28N,7W,17	3781	1,521	10 L	--	NIAGARAN	6,351	1		1973		40	0	429	0	0	10	0
OF	RAPID RIVER 24-28N-07W	NIAGARAN	1970	KALKASKA, RAPID RIVER-28N,7W,24	3781	6,590	44 D	50	NIAGARAN	6,810	9	0	0	9	720	89,383	1,391,593	1,900,770	18,816,842	1,932	299
OF	RAPID RIVER 24-28N-07W P/A	NIAGARAN	1972	KALKASKA, RAPID RIVER-28N,7W,24	3781	6,407	20 D	42.3	NIAGARAN	6,805	2	1	0	2	160	15,553	93,489	493	46,675	584	289
OF	RAPID RIVER 27-28N-07W	NIAGARAN	1972	KALKASKA, RAPID RIVER-28N,7W,27	3781	6,487	29 D	47.2	NIAGARAN	6,850	6	1	0	4	160	20,282	290,796	375,558	3,240,939	1,817	75
OF	RAPID RIVER 27-28N-07W P/A	NIAGARAN	1972	KALKASKA, RAPID RIVER-28N,7W,27	3781	6,552	8 D	44	NIAGARAN	6,773	4	0	0	3	240	29,703	466,122	215,332	2,818,465	1,942	393
OF	RAPID RIVER 32-28N-07W	NIAGARAN	1973	KALKASKA, RAPID RIVER-28N,7W,32	3781	6,413	20 D	43.5	NIAGARAN	6,550	7	0	0	6	520	132,531	2,330,412	419,956	4,133,384	4,481	576
OF	RAPID RIVER 33-28N-07W	NIAGARAN	1971	KALKASKA, RAPID RIVER-28N,7W,33	3781	6,522	14 D	52.4	NIAGARAN	6,764	3	0	0	3	200	41,336	430,796	577,952	7,455,438	2,153	33
OF	RAPID RIVER 33-28N-07W P/A	NIAGARAN	1972	KALKASKA, RAPID RIVER-28N,7W,33	3781	6,510	9 D	43.5	NIAGARAN	6,695	2	0	0	2	160	689	62,292	49,340	1,135,592	389	15
GF	RAVENNA	"BEREA"	1936	MUSKEGON, RAVENNA-9N,14W,8	3659	1,205	10 D	--	DETROIT RIVER	2,601	31	0	0	5	4,480	0	0	0	1,461,245	0	DOMESTIC
OF	RAVENNA	TRAVERSE	1952	MUSKEGON, RAVENNA-9N,14W,29	3659	1,842	15 L	--	DETROIT RIVER		37	0	0	1	730	87	460,779	0	0	631	1
GF	RAVENNA, SEC. 27	"BEREA"	1953	MUSKEGON, RAVENNA-9N,14W,27	3659	1,182	6 D	--	DUNDEE	2,500	3	0	0	2	480	0	0	0	32,888	0	DOMESTIC
AUF	READING	TRENTON	1971	HILLSDALE, READING-7S,4W,29	3697	3,100	10 D	42	BLACK RIVER	3,478	2		1973		80	0	5,431	0	0	67	0
GF	REDDING	MICHIGAN STRAY	1940	CLARE, REDDING-19N,6W,27	3539	1,475	3 S	--	SYLVANIA	5,462	?	0	0	2	160	0	0	0	33,346	0	LEASE FUEL
OF	REED CITY	DETROIT RIVER SZ	1955	OSCEOLA, LINCOLN-18N,10W,30	3857	4,184	73 DL	48.2	ST. PETER SS.		45	0	0	21	1,800	34,265	2,708,473	0	3,457,308	1,504	70
OF	REED CITY	DUNDEE	1940	OSCEOLA, LINCOLN-18N,10W,31	3857	3,490	3 L	46.3	ST. PETER SS.						SEE	REED	CITY POOL	0	16,169,578	0	0
OF	REED CITY	RICHFIELD	1954	OSCEOLA, LINCOLN-18N,10W,30	3857	4,633	12 SL	45.8	ST. PETER SS.							SEE	REED CITY	SOUR ZONE			
OF	REED CITY	TRAVERSE	1941	OSCEOLA, LINCOLN-18N,10W,30	3857	2,925	5 L	43.7	ST. PETER SS.	8,917	?	0	0	4	1,600	4,283	3,716,626	0	386,527	2,322	480
OF	REED CITY, EAST	TRAVERSE	1947	OSCEOLA, LINCOLN-18N,10W,26	3857	3,106	1 L	41.2	DETROIT RIVER	3,840	8	0	0	3	80	0	393,304	0	18,468	4,916	0
AGF	REEDER	MICHIGAN STRAY	1964	MISSAUKEE, REEDER-11N,7W,32	3876	1,385	4 S	--	DUNDEE	4,002	2		1966		320	0	0	0	0	0	0
AOF	REEMAN	TRAVERSE	1958	NEWAYGO, SHERIDAN-12N,14W,8	3581	2,099	1 L	--	TRAVERSE	2,100	3		1967		30	0	44,886	0	0	1,496	0
OF	REYNOLDS	REED CITY	1954	MONTCALM, REYNOLDS-12N,10W,1	3678	3,343	2 D	44.3	BASS ISLANDS		53	0	0	8	2,100	10,396	4,799,625	0	406,336	2,280	1,075
OF	REYNOLDS	TRAVERSE	1955	MONTCALM, REYNOLDS-12N,10W,1	3678	2,787	4 D	39.8	BASS ISLANDS	4,300	16	0	0	5	110	10,328	SEE	REYNOLDS,	REED CITY		410
GF	RICH	BEREA	1970	LAPEER, RICH-10N,10E,21	3765	1,380	29 S	--	SYLVANIA	3,267	7	0	0	7	1,000	0	138	SEE RICH	DET RIVER	FOR GAS 0	0
OF	RICH	DETROIT RIVER SZ	1962	LAPEER, RICH-10N,10E,28	3765	3,028	5 D	33.9	SYLVANIA		59	4	0	35	2,040	230,085	1,909,673	884,367	1,506,068	936	340
AOF	RICHLAND	TRAVERSE	1936	SAGINAW, RICHLAND-12N,2E,31	3578	2,739	10 L	46.0	DUNDEE	3,264	1		1936		10	0	1,871	0	0	187	0
AGF	RICHLAND, SEC. 27	MICHIGAN STRAY	1963	MONTCALM, RICHLAND-12N,5W,27	3454	1,247	1 S	--	DUNDEE	3,530	1		1964		160	0	0	0	0	0	0
AGF	RICHMOND	NIAGARAN	1968	MACOMB, RICHMOND-5N,14E,26	3840	3,195	12 D	--	NIAGARAN	3,254	1		1976		40	0	0	0	179,249	0	0
GF	RICHMOND, SEC. 32	NIAGARAN	1979	MACOMB, RICHMOND-5N,14E,32	3840	3,247	21 D	--	NIAGARAN	3,326	1	0	0	1	40	0	0	0	0	0	0
AOF	RIDGEWAY, SEC. 01	TRENTON	1954	LENAWEE, RIDGEWAY-6S,5E,1	3698	2,415	4 D	--	TRENTON	2,491	1		1962		10	0	47	0	0	5	0
OF	RIVERSIDE	DUNDEE	1942	MISSAUKEE, RIVERSIDE-21N,7W,14	3571	3,944	3 L	44.5	DUNDEE		6	0	0	6	220	10,966	207,802	0	0	944	1,750
OF	RIVERSIDE	TRAVERSE	1961	MISSAUKEE, RIVERSIDE-21N,7W,23	3571	3,220	2 L	42.6	DUNDEE	3,953	1	0	0	1	10	0	23,592	0	0	2,359	0
AOF	RIVERTON	TRAVERSE	1957	MASON, RIVERTON-17N,17W,10	3716	1,650	6 L	38.5	DUNDEE	2,317	19		1971		190	0	242,206	0	0	1,275	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
OF	RIVERTON, SEC. 21	TRAVERSE	1964	MASON, RIVERTON-17N,17W,21	3627	1,683	4 L	38.2	DUNDEE	2,290	3	0	0	2	30	1,640	22,454	0	0	748	5
AOF	ROBINSON, SEC. 03	DUNDEE	1956	OTTAWA, ROBINSON-7N,15W,3	3548	2,107	7 L	--	DUNDEE	2,210	2		1972		20	0	10,630	0	0	531	0
OF	ROCKFORD	TRAVERSE	1945	KENT, ALGOMA-9N,11W,25	3609	2,204	3 L	44.0	DETROIT RIVER	2,850	23	0	0	3	210	3,409	583,155	0	0	2,776	470
OF	ROLLAND	DUNDEE	1979	ISABELLA, ROLLAND-13N,6W,24	3889	3,560	6 D	--	REED CITY		5	0	0	5	200	13,720	33,885	0	0	169	710
GF	ROLLAND	MICHIGAN STRAY	1978	ISABELLA, ROLLAND-13N,6W,13	3889	1,314	14 S	--	REED CITY	3,755	2	0	0	2	80	0	0	0	0	0	0
AGF	ROMULUS	A-1 CARBONATE	1955	WAYNE, ROMULUS-3S,9E,16	3664	1,980	20 D	--	NIAGARAN	2,259	2		1972		320	0	0	0	45,946	0	0
OF	ROSE CITY	RICHFIELD	1942	OGEMAW, FOSTER-24N,2E,33	3658	4,125	9 D	41.2	CAMBRIAN	12,996	134	0	0	70	5,200	212,125	8,369,508	57,650	9,558,532	1,609	190
OF	ROSE LAKE	TRAVERSE	1943	OSCEOLA, ROSE LAKE-19N,19W,31	3594	3,140	5 L	45.5	DETROIT RIVER	3,990	18	0	0	6	720	9,212	1,957,102	0	0	2,718	1,190
OF	ROSEBUSH	DETROIT RIVER SZ	1982	ISABELLA, ISABELLA-15N,04W,02	3630	4,466	49 D	--	DETROIT RIVER	4,850	3	3	0	3*	80	2,452	2,452	0	0	31	15
OF	ROSEBUSH	DUNDEE	1933	ISABELLA, DENVER-15N,3W,7	3098A	3,690	6 L	42.0	RICHFIELD	4,838	48	2	0	35*	1,070	34,888	2,481,725	0	0	2,309	353
OF	ROSEBUSH	RICHFIELD	1969	ISABELLA, VERNON-16N,4W,36	3630	4,790	4 D	--	RICHFIELD		13	10	0	13*	320	11,038	SEE	ROSEBUSH	DUNDEE		121
GF	ROTHBURY	"BEREA"	1978	OCEANA, GRANT-13N,17W,14	3455	1,103	3 S	--	BEREA	1,120	1	0	0	1	40	0	0	0	0	0	0
OF	SAGE	DUNDEE	1971	GLADWIN, SAGE-19N,2W,12	3440	3,867	2 L	--	DETROIT RIVER	4,235	4	0	0	3	120	554	72,986	0	0	608	0
OF	SAGINAW	BEREA	1925	SAGINAW, SAGINAW-12N,4E,14	3578	1,825	16 S	46.1	SYLVANIA	3,920	?	0	0	5	1,500	4,820	1,725,620	0	0	1,150	3
AGF	SALEM	DETROIT RIVER	1958	ALLEGAN, SALEM-4N,13W,16	3501	1,969	6 D	--	TRENTON		3		1966		320	0	0	0	50,574	0	0
OF	SALEM	TRAVERSE	1937	ALLEGAN, SALEM-4N,13W,24	3501	1,583	8 L	38.3	TRENTON	4,347	337	0	0	83	3,390	29,035	9,435,813	0	0	2,783	285
OF	SANFORD	DUNDEE	1951	MIDLAND, JEROME-15N,1W,13	3669	3,755	3 L	42.6	DETROIT RIVER		12	0	0	9*		2,352	SEE	SANFORD	TRAVERSE	CUM	5
OF	SANFORD	TRAVERSE	1959	MIDLAND, JEROME-15N,1W,13	3669	3,125	2 L	--	DETROIT RIVER	4,811	2	0	0	2*	260	556	217,866	0	0	837	2
OF	SAUBLE	TRAVERSE	1942	LAKE, SAUBLE-19N,14W,16	3570	2,111	2 L	35.6	TRAVERSE	2,156	5	0	0	1	200	175	146,193	0	0	730	20
OF	SCOTTVILLE	REED CITY	1962	MASON, AMBER-18N,17W,14	3751	2,319	3 L	37.2	CINCINNATIAN		11	0	0	2	420	1,848	533,809	0	0	1,270	55
OF	SCOTTVILLE	TRAVERSE	1961	MASON, AMBER-18N,17W,14	3751	1,646	3 L	34.6	CINCINNATIAN	5,129	17	0	0	2		SEE	SCOTTVILLE,	REED CITY			0
AGF	SEARS	MICHIGAN STRAY	1964	OSCEOLA, SYLVAN-18N,7W,32	3635	1,492	12 S	--	DUNDEE	3,988	1		1965		160	0	0	0	0	0	0
AOF	SECORD	DUNDEE	1937	GLADWIN, SECORD-19N,1E,11	3440	3,437	5 L	38.0	DUNDEE	3,500	2		1941		20	0	12,024	0	0	601	0
AOF	SHELBY	TRAVERSE	1951	OCEANA, BENONA-14N,18W,18	3931	1,743	3 L	43.0	DUNDEE	2,234	20		1971		350	0	228,092	0	0	652	0
GF	SHERIDAN	MICHIGAN STRAY	1935	MECOSTA, SHERIDAN-15N,7W,13	3453	1,375	2 S	--	DUNDEE	3,904	5	0	0	1	480	0	0	0	276,801	0	DOMESTIC
AOF	SHERIDAN, SEC. 25	TRAVERSE	1951	NEWAYGO, SHERIDAN-12N,14W,25	3581	2,204	1 L	--	TRAVERSE	2,205	1		1955		10	0	628	0	0	63	0
OF	SHERMAN	DUNDEE	1936	ISABELLA, BROOMFIELD-14N,6W,4	3477	3,650	4 D	42.0	SYLVANIA	4,994	88	0	0	5	1,020	5,356	4,783,590	0	637,734	4,689	376
AOF	SHERMAN, SEC. 18	TRAVERSE	1939	ISABELLA, SHERMAN-15N,6W,18	3477	3,217	4 L	--	DUNDEE	3,835	3		1947		20	0	1,364	0	0	68	0
OF	SKEELS	DETROIT RIVER SZ	1942	CLARE, FRANKLIN-20N,3W,25	3666	4,844	4 D	47.4	SYLVANIA		15	0	0	9*	1,280	14,707	1,368,364	0	0	1,069	1
OF	SKEELS	DUNDEE	1950	GLADWIN, SHERMAN-20N,2W,30	3666	3,840	7 D	39.6	SYLVANIA		5	0	0	4	50	1,980	1,002,597	0	0	20,051	1
OF	SKEELS	RICHFIELD	1953	CLARE, FRANKLIN-20N,3W,25	3666	5,080	17 D	44.8	SYLVANIA		23	0	0	15*	1,240	SEE	SKEELS	DETROIT	RIVER	SOUR ZONE	1
OF	SKEELS	TRAVERSE	1955	CLARE, FRANKLIN-20N,3W,25	3666	3,102	6 L	38.4	SYLVANIA	6,016	4	0	0	2	40	237	47,045	0	0	1,176	2
AOF	SOUTH BRANCH	RICHFIELD	1968	CRAWFORD, SOUTH BRANCH-25N,1W,32	3623	4,203	12 D	--	DETROIT RIVER	4,436	1		1971		40	0	0	0	0	0	0
OF	SPRINGDALE 20-24N-14W	NIAGARAN	1978	MANISTEE, SPRINGDALE-24N,14W,20	3802	4,764	6 D	40.9	NIAGARAN	4,915	1	0	0	1	80	105,025	474,115	83,769	336,034	5,926	100
OF	SPRINGDALE 21-24N-14W	NIAGARAN	1975	MANISTEE, SPRINGDALE-24N,14W,21	3802	4,883	24 D	39.0	NIAGARAN	5,085	4	0	0	3	320	135,312	1,419,904	187,355	1,189,442	4,437	49
OF	SPRINGDALE 25-24N-14W	NIAGARAN	1972	MANISTEE, SPRINGDALE-24N,14W,25	3802	5,006	71 D	43.2	NIAGARAN	5,448	1	0	0	1	40	30,815	460,252	51,233	776,463	11,506	19
OF	SPRINGDALE 26-24N-14W	NIAGARAN	1974	MANISTEE, SPRINGDALE-24N,14W,26	3802	5,094	12 D	44.5	NIAGARAN	5,195	4	0	0	4	240	126,956	1,119,705	101,970	1,320,301	4,665	0
OF	SPRINGDALE 28-24N-14W	SALINA-NIAGARAN	1973	MANISTEE, SPRINGDALE-24N,14W,28	3802	4,719	134 D	34.4	NIAGARAN	5,180	2	0	0	2	160	62,888	736,758	83,165	503,610	4,604	56
OF	SPRINGDALE 29-24N-14W	NIAGARAN	1976	MANISTEE, SPRINGDALE-24N,14W,29	3802	4,633	14 D	--	NIAGARAN	4,959	1	0	0	1	80	617	60,038	0	4,280	750	0
OF	SPRINGDALE 32-24N-14W	NIAGARAN	1974	MANISTEE, SPRINGDALE-24N,14W,32	3802	4,634	16 D	41.9	NIAGARAN	5,050	2	0	0	2	240	16,957	81,886	0	0	341	120
OF	SPRINGDALE 34-24N-14W	SALINA-NIAGARAN	1974	MANISTEE, SPRINGDALE-24N,14W,34	3802	4,764	168 D	68.0	NIAGARAN	5,315	2	0	0	2	80	16,407	91,958	22,389	592,015	1,149	64
OF	SPRINGDALE 34-24N-14W P/A	NIAGARAN	1975	MANISTEE, SPRINGDALE-24N,14W,34	3802	4,995	18 D	40.6	NIAGARAN	5,180	2	0	0	2	160	111,944	993,961	180,488	710,065	6,212	270
OF	SPRINGDALE 35-24N-14W	NIAGARAN	1978	MANISTEE, SPRINGDALE-24N,14W,35	3802	5,026	119 D	47.2	NIAGARAN	5,417	1	0	0	1	80	7,415	75,627	6,525	218,039	945	61
GF	SPRINGFIELD, SEC. 32	TRAVERSE	1982	KALKASKA, SPRINGFIELD-25N,08W,32	3654	2,358	6 L	--	DETROIT RIVER	4,367	3	3	0	3	120	0	0	0	0	0	0
AOF	SPRINGPORT	TRENTON-BLK. RIVER	1960	JACKSON, SPRINGPORT-1S,3W,11	3914	4,696	12 D	46.5	PRAIRIE DU CHIEN	5,250	2		1970		80	0	3,430	0	0	43	0
GF	SPRINGPORT 20-01S-03W	NIAGARAN	1982	JACKSON, SPRINGPORT-01S,03W,20	3914	3,384	19 D	--	NIAGARAN	3,552	1	1	0	1	80	0	0	0	0	0	0
AOF	ST. CHARLES	TRAVERSE	1957	SAGINAW, ST. CHARLES-10N,3E,26	3578	2,305	3 L	51.6	TRAVERSE	2,308	1		1967		10	0	13,250	0	0	1,325	0
AGF	ST. CLAIR, SEC. 18	SALINA-NIAGARAN	1953	ST. CLAIR, ST. CLAIR-5N,17E,18	3750	2,567	2 D	--	CINCINNATIAN	3,240	1		1961		160	0	0	0	16,423	0	0
OF	ST. HELEN	RICHFIELD	1941	ROSCOMMON, AU SABLE-24N,1W,29	3555	4,180	11 D	43.3	SALINA	5,440	153	30	0	101	4,600	350,035	7,443,065	490,190	13,141,324	1,618	1,309
OF	ST. MARY'S LAKE	TRAVERSE	1968	MASON, RIVERTON-17N,17W,35	3627	1,641	3 L	--	TRAVERSE	1,644	2	0	0	2	40	640	29,431	0	0	735	25
AOF	STANDISH	RICHFIELD	1948	ARENAC, LINCOLN-18N,4E,10	3728	4,108	3 D	35.4	RICHFIELD	4,210	9		1967		360	0	147,062	0	0	409	0
OF	STANTON	TRAVERSE	1951	MONTCALM, DOUGLASS-11N,7W,26	3670	2,916	7 DL	43.0	DUNDEE	3,492	18	1	0	6	370	4,857	1,016,614	0	0	2,747	118
OF	STARRVILLE	NIAGARAN	1967	ST. CLAIR, COTTRELLVILLE-3N,16E,9	3738	2,336	5 D	--	NIAGARAN	2,396	3	0	0	3	120	2,013	136,966	0	0	1,141	8
OF	STERLING	DETROIT RIVER SZ	1952	ARENAC, DEEP RIVER-19N,4E,17	3580	3,918	5 D	41.1	RICHFIELD		45	3	1	38	1,950	33,164	2,020,012	0	0	1,035	2
OF	STERLING	DUNDEE	1947	ARENAC, DEEP RIVER-19N,4E,18	3580	2,872	17 L	33.6	RICHFIELD		20	0	0	17	200	4,738	476,816	0	0	2,384	7
OF	STERLING	RICHFIELD	1950	ARENAC, DEEP RIVER-19N,4E,17	3580	4,153	8 D	37.6	RICHFIELD							SEE	STERLING	DETROIT	RIVER	SOUR ZONE	
OF	STERLING	TRAVERSE	1948	ARENAC, DEEP RIVER-19N,4E,18	3580	1,970	5 L	36.2	RICHFIELD	4,285	22	0	0	16	220	2,522	304,516	0	0	1,384	6
OF	STERLING, SEC. 30	RICHFIELD	1980	ARENAC, DEEP RIVER-19N,4E,30	3580	4,265	15 D	38	AMHERSTBURG	4,344	18	2	1	7	320	18,720	28,179	0	0	88	3
OF	STOCKBRIDGE 06-01N-02E	A-1 CARBONATE	1972	INGHAM, STOCKBRIDGE-1N,2E,6	3828	3,960	12 D	33.6	NIAGARAN	4,471	3	0	0	2	200	1,020	68,681	0	16,776	343	255
OF	STOCKBRIDGE 07-01N-02E	A-1 CARBONATE	1974	INGHAM, STOCKBRIDGE-1N,2E,7	3828	3,906	10 D	--	NIAGARAN	4,445	1	0	0	1	80	826	16,611	0	SHUT-IN	185	116
OF	STOCKBRIDGE 07-01N-02E P/A	NIAGARAN	1982	INGHAM, STOCKBRIDGE-01N,02E,07	3828	3,934	16 D	--	NIAGARAN	4,016	1	1	0	1	80	0	0	0	0	0	0
GF	STOCKBRIDGE 07-01N-02E P/B	NIAGARAN	1982	INGHAM, STOCKBRIDGE-01N,02E,07	3828	3,940	6 D	--	NIAGARAN	4,025	1	1	0	1	160	0	0	0	0	0	0
AOF	STONY LAKE	"BEREA"	1949	OCEANA, CLAYBANKS-13N,18W,9	3618	930	1 SL	48.0	NIAGARAN	3,837	2		1965			SEE	STONY	LAKE	TRAVERSE		
OF	STONY LAKE	TRAVERSE	1946	OCEANA, CLAYBANKS-13N,18W,11	3618	1,630	19 L	44.9	NIAGARAN		82	2	0	14	1,540	4,457	7,580,932	0	0	4,922	215
AOF	SUMMERFIELD	TRENTON-BLK. RIVER	1958	MONROE, SUMMERFIELD-7S,6E,30	3505	1,940	10 DL	--	TRENTONBLACK RIVER	2,382	2		1964		20	0	2,142	0	0	107	0
OF	SUMMERFIELD, SEC. 19	TRENTON	1982	MONROE, SUMMERFIELD-07S,06E,19	3505	1,985	15 D	42	TRENTON	2,182	1	1	0	1	40	2,473	2,473	0	0	62	75
OF	SUMNER	TRAVERSE	1953	GRATIOT, SUMNER-11N,4W,11	3720	2,853	1 L	44.5	DUNDEE	3,366	35	0	0	18	350	6,967	1,148,078	0	0	3,280	700
GF	SURREY	MICHIGAN STRAY	1945	CLARE, SURREY-17N,5W,23	3496	1,460	3 S	--	DUNDEE	4,000	?	0	0	2	320	0	0	0	12,920	0	DOMESTIC
OF	SYLVAN	DUNDEE	1948	OSCEOLA, SYLVAN-18N,7W,9	3635	3,925	14 D	48.0	DETROIT RIVER		11	0	0	2	440	1,846	1,210,748	0	0	2,751	500
AGF	SYLVAN	MICHIGAN STRAY	1941	OSCEOLA, SYLVAN-18N,7W,7	3635	1,525	10 S	--	DETROIT RIVER	4,100	1		1953		40	0	0	0	82,328	0	0
GF	TAYMOUTH	TRAVERSE	1957	SAGINAW, TAYMOUTH-10N,5E,11	3578	2,085	6 L	--	TRAVERSE	2,135	1	0	0	1	160	0	465	0	SHUT-IN	2	0
AOF	TEKONSHA	TRENTON	1959	CALHOUN, TEKONSHA-4S,6W,17	3845	3,553	.DL	34.5	PRAIRIE DU CHIEN	4,147	4		1976		90	0	19,309	0	SHUT-IN	215	0
AOF	THOMPSON CORNERS	TRAVERSE	1968	NEWAYGO, BEAVER-15N,14W,30	3581	2,138	2 L	--	TRAVERSE	2,140	1		1973		40	0	9,374	0	0	234	0
AOF	THORNAPPLE, SEC. 04	TRAVERSE	1952	BARRY, THORNAPPLE-4N,10W,4	3551	1,951	2 L	--	TRAVERSE	1,973	2		1961		20	0	2,716	0	0	136	0
OF	TOBACCO, SEC. 32	BEREA	1982	GLADWIN, TABACCO-17N,01W,32	3440	2,524	9 S	46	DETROIT RIVER	4,358	1	1	0	1	40	506	506	0	0	13	4

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP – T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION FORMATION OR POOL NAME	TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
AOF	TRENT	TRAVERSE	1949	MUSKEGON, CASNOVIA-10N,13W,19	3557	2,039	1 L	--	TRAVERSE	2,118	2		1969		40	0	30,771	0	0	769	0
OF	TROWBRIDGE	TRAVERSE	1937	ALLEGAN, TROWBRIDGE-1N,13W,29	3562	1,358	2 L	41.2	CINCINNATIAN	2,952	167	2	1	9	2,010	1,638	530,359	0	0	263	95
GF	TURK LAKE	MICHIGAN STRAY	1947	MONTCALM, MONTCALM-10N,8W,9	3454	1,081	4 S	--	DETROIT RIVER	3,413	4	0	0	1	640	0	0	0	221,936	0	DOMESTIC
AOF	TYRONE	TRAVERSE	1952	KENT, TYRONE-10N,12W,10	3546	2,379	2 L	--	DETROIT RIVER	2,900	7		1956		140	0	31,558	0	0	225	0
AOF	UNION	TRAVERSE	1950	ISABELLA, UNION-14N,4W,20	3477	3,191	2 L	--	DETROIT RIVER	4,096	1		1963		20	0	58,263	0	55,053	2,913	0
G-C	UNION 01-26N-09W	NIAGARAN	1972	GD. TRAVERSE, UNION-26N,9W,1	3787	6,380	78 D	--	NIAGARAN	6,865	1	0	0	1	160	273	33,150	171,586	4,838,577	207	0
G-C	UNION 02-26N-09W	NIAGARAN	1973	GD. TRAVERSE, UNION-26N,9W,2	3787	6,215	335 D	61	NIAGARAN	6,745	2	0	0	2	240	1,035	171,419	309,095	12,556,392	714	0
G-C	UNION 03-26N-09W	NIAGARAN	1972	GD. TRAVERSE, UNION-26N,9W,3	3787	6,514	14 D	62.3	NIAGARAN	6,878	2	0	0	2	320	537	58,142	82,911	3,823,301	181	0
OF	UNION 03-26N-09W P/A	NIAGARAN	1981	GD. TRAVERSE, UNION-26N,9W,3	3787	6,557	10 D	--	NIAGARAN	6,681	1	0	0	1	80	69,738	72,485	78,216	78,216	906	0
AOF	UNION 04-26N-09W	NIAGARAN	1981	GD. TRAVERSE, UNION-26N,9W,4	3787	6,170	6 D	--	NIAGARAN	6,601	1		1982		80	218	1,946	0	0	24	0
G-C	UNION 05-26N-09W	NIAGARAN	1973	GD. TRAVERSE, UNION-26N,9W,5	3787	6,070	19 D	68.2	NIAGARAN	6,440	1	0	0	1	80	6,787	168,783	269,253	5,515,685	2,109	92
OF	UNION 06-26N-09W	SALINA-NIAGARAN	1974	GD. TRAVERSE, UNION-26N,9W,6	3787	5,936	184 D	64.5	NIAGARAN	6,475	3	0	0	3	320	26,052	245,016	285,605	6,749,195	765	59
G-C	UNION 08-26N-09W MUNCIE LKS	NIAGARAN	1970	GD. TRAVERSE, UNION-26N,9W,8	3787	6,267	97 D	63.6	NIAGARAN	6,666	2	0	0	2	320	2,533	125,455	362,731	11,151,663	392	0
G-C	UNION 11-26N-09W	NIAGARAN	1972	GD. TRAVERSE, UNION-26N,9W,11	3787	6,580	118 D	61.0	NIAGARAN	6,802	1	0	0	1	160	61	67,629	246,788	5,596,644	422	0
G-C	UNION 12-26N-09W P/A	NIAGARAN	1975	GD. TRAVERSE, UNION-26N,9W,12	3787	6,490	132 D	--	NIAGARAN	6,922	1	0	0	1	160	0	3,966	0	173,967	24	0
G-C	UNION 12-26N-09W S.BOARDMAN	NIAGARAN	1969	GD. TRAVERSE, UNION-26N,9W,12	3787	6,779	50 D	57.9	NIAGARAN	6,910	1	0	0	1	160	0	1,103	0	0	6	0
G-C	UNION 14-26N-09W	NIAGARAN	1973	GD. TRAVERSE, UNION-26N,9W,14	3787	6,660	24 D	59.0	NIAGARAN	6,860	1	0	0	1	160	541	50,876	288,203	4,013,158	317	0
G-C	UNION 16-26N-09W	NIAGARAN	1975	GD. TRAVERSE, UNION-26N,9W,16	3787	6,207	183 D	58.0	NIAGARAN	6,716	1	0	0	1	80	353	41,830	496,156	4,786,186	522	0
G-C	UNION 16-26N-09W P/A	NIAGARAN	1976	GD. TRAVERSE, UNION-26N,9W,16	3787	6,392	94 D	66	NIAGARAN	6,645	2	0	0	2	160	145	40,248	82,145	3,379,916	251	0
G-C	UNION 17-26N-09W	NIAGARAN	1978	GD. TRAVERSE, UNION-26N,9W,17	3787	6,448	20 D	68.8	NIAGARAN	6,540	1	0	0	1	160	207	8,045	39,838	686,617	50	0
G-C	UNION 18-26N-09W	NIAGARAN	1973	GD. TRAVERSE, UNION-26N,9W,18	3787	6,298	14 D	59.3	NIAGARAN	6,471	1	0	0	1	80	10	5,484	9,458	312,101	68	0
G-C	UNION 18-26N-09W P/A	NIAGARAN	1979	GD. TRAVERSE, UNION-26N,9W,18	3787	6,352	62 L	62.7	NIAGARAN	6,580	1	0	0	1	80	155	8,801	67,289	597,887	110	0
G-C	UNION 20-26N-09W	NIAGARAN	1978	GD. TRAVERSE, UNION-26N,9W,20	3787	6,400	80 D	76.2	NIAGARAN	6,731	2	0	0	1	160	2,940	42,514	965,202	5,047,655	265	0
G-C	UNION 21-26N-09W	NIAGARAN	1978	GD. TRAVERSE, UNION-26N,9W,21	3787	6,758	22 D	67.3	NIAGARAN	6,889	1	0	0	1	280	9,022	64,423	645,798	2,716,433	230	0
G-C	UNION 22-26N-09W	NIAGARAN	1978	GD. TRAVERSE, UNION-26N,9W,22	3787	6,740	10 D	76.3	NIAGARAN	6,881	1	0	0	1	80	855	17,614	328,970	1,945,583	220	0
G-C	UNION 28-26N-09W	NIAGARAN	1975	GD. TRAVERSE, UNION-26N,9W,28	3787	6,810	105 D	51.0	NIAGARAN	7,062	1	0	0	1	80	977	40,332	160,900	2,645,277	504	0
G-C	UNION 29-26N-09W	NIAGARAN	1980	GD. TRAVERSE, UNION-26N,9W,29	3787	6,808	28 D	--	NIAGARAN	7,075	1	0	0	1	80	7,566	7,741	96,992	96,992	96	0
G-C	UNION 29-26N-09W P/A	SALINA-NIAGARAN	1981	GD. TRAVERSE, UNION-26N,9W,29	3787	6,840	66 D	--	NIAGARAN	7,095	1	0	0	1	80	5,927	5,927	189,983	189,983	74	0
AG-C	UNION 31-26N-09W	NIAGARAN	1978	GD. TRAVERSE, UNION-26N,9W,31	3787	6,608	176 D	68.8	NIAGARAN	7,082	1		1982		160	102	2,993	18,267	182,843	18	0
GF	UNION, SEC. 06	MICHIGAN STRAY	1965	ISABELLA, UNION-14N,4W,6	3477	1,382	3 S	--	DUNDEE	3,777	2	0	0	2	320	0	0	0	22,394	0	0
OF	VASSAR	DETROIT RIVER SZ	1980	TUSCOLA, VASSAR-11N,8E,29	3576	3,190	19 D	--	SYLVANIA	3,554	1	0	0	1	40	0	0	0	0	0	0
OF	VERNON	DETROIT RIVER SZ	1980	ISABELLA, VERNON-16N,4W,35	3272	4,470	4 D	--	BOIS BLANC		3	2	0	3	80	12,993	24,905	0	0	311	5
OF	VERNON	DUNDEE	1930	ISABELLA, VERNON-16N,4W,27	3272	3,755	3 DL	38.6	BOIS BLANC		82	4	0	6	930	4,455	5,060,993	0	0	5,441	1,220
AGF	VERNON	MICHIGAN STRAY	1939	ISABELLA, VERNON-16N,4W,36	3272	1,300	2 S	--	BOIS BLANC	5,118	25		1956		920	0	0	0	1,493,534	0	0
OF	VERNON	RICHFIELD	1982	ISABELLA, VERNON-16N,04W,26	3272	4,518	334 D	49	DETROIT RIVER	4,906	1	1	0	1	40	SEE	VERNON	DRSZ FOR	TOTALS	0	0
GF	VEVAY 08-02N-01W	NIAGARAN	1975	INGHAM, VEVAY-2N,1W,8	3779	4,140	44 D	43.8	NIAGARAN	4,312	2	1	0	1	120	1,631	1,631	154,245	154,245	13	0
OF	VEVAY 16-02N-01W (MASON)	NIAGARAN	1970	INGHAM, VEVAY-2N,1W,16	3779	4,165	39 D	49.4	NIAGARAN	4,555	2	0	0	2	120	15,984	247,984	220,980	1,560,609	2,066	12
OF	VEVAY 17-02N-01W	NIAGARAN	1972	INGHAM, VEVAY-2N,1W,17	3779	4,162	12 D	--	NIAGARAN	4,300	3	0	0	3	240	27,608	311,002	99,194	851,556	1,295	1
OF	VEVAY 19-02N-01W	TRAVERSE	1971	INGHAM, VEVAY-2N,1W,19	3779	2,141	65 L	37	CINCINNATIAN	4,600	3	0	0	1	80	5,132	30,029	0	0	375	0
GF	VEVAY 19-02N-01W P/A	NIAGARAN	1971	INGHAM, VEVAY-2N,1W,19	3779	3,942	24 D	46.8	CINCINNATIAN	4,600	2	0	0	1	320	3,289	214,802	19,520	2,826,546	671	57
OF	VEVAY 19-02N-01W P/B	NIAGARAN	1972	INGHAM, VEVAY-2N,1W,18	3779	4,030	50 D	42	NIAGARAN	4,250	4	0	0	4	640	16,244	387,094	237,036	5,862,778	604	0
OF	VEVAY 19-02N-01W P/C	NIAGARAN	1972	INGHAM, VEVAY-2N,1W,18	3779	4,142	50 D	--	CLINTON	4,542	1	0	0	1	160	7,620	92,289	136,152	935,955	576	0
AOF	VEVAY 20-02N-01W	NIAGARAN	1972	INGHAM, VEVAY-2N,1W,20	3779	3,939	2 D	--	PRAIRIE DU CHIEN	5,985	1		1976		80	0	17,013	0	126,542	213	0
G-C	VICTORY 05-19N-17W	NIAGARAN	1974	MASON, VICTORY-19N,17W,5	3801	4,199	200 D	69.0	NIAGARAN	4,779	1	0	0	1	80	0	2,083	0	149,769	26	0
GF	VICTORY 05-19N-17W P/A	NIAGARAN	1981	MASON, VICTORY-19N,17W,5	3801	4,470	13 D	--	NIAGARAN	4,601	1	0	0	1	80	841	1,284	160,601	202,502	16	0
G-C	VICTORY 07-19N-17W	NIAGARAN	1973	MASON, VICTORY-19N,17W,7	3801	4,052	369 D	61.2	NIAGARAN	4,730	3	0	0	3	240	4,137	102,354	143,232	1,885,164	426	5
OF	VICTORY 18-19N-17W	NIAGARAN	1973	MASON, VICTORY-19N,17W,18	3801	4,344	22 D	50.0	NIAGARAN	4,658	2	0	0	2	160	38,908	216,751	139,953	726,597	1,354	476
G-C	VICTORY 18-19N-17W P/A	NIAGARAN	1974	MASON, VICTORY-19N,17W,18	3801	4,467	5 D	73.3	NIAGARAN	4,555	2	0	0	2	160	0	11,899	17,695	970,795	74	0
OF	VICTORY 19-19N-17W	NIAGARAN	1972	MASON, VICTORY-19N,17W,19	3801	4,387	14 D	--	NIAGARAN	4,537	2	0	0	2	160	7,324	320,871	12,866	1,129,166	2,005	11
G-C	VICTORY 19-19N-17W P/A	NIAGARAN	1974	MASON, VICTORY-19N,17W,19	3801	4,358	16 D	69.2	NIAGARAN	4,516	2	0	0	2	160	0	48,763	99,631	6,288,154	304	0
GF	VICTORY 26-19N-17W	NIAGARAN	1982	MASON, VICTORY-19N,17W,26	3801	4,922	24 D	65	NIAGARAN	5,119	1	1	0	1	80	0	0	0	0	0	0
AOF	VICTORY, SEC. 10	TRAVERSE	1957	MASON, VICTORY-19N,17W,10	3801	1,603	9 L	36.0	TRAVERSE	1,616	1		1958		10	0	580	0	0	58	0
OF	VOGEL CENTER	DUNDEE	1966	MISSAUKEE, CLAM UNION-21N,6W,32	3877	3,892	3 L	--	DUNDEE	3,895	2	0	0	1	80	507	51,031	0	0	637	240
GF	WAGNER LAKE	A1 CARBONATE	1982	OSCODA, BIG CREEK-25N,02E,14	3943	7,676	56 D	50	PRAIRIE DU CHIEN	11,691	1	1	0	1	640	0	0	0	0	0	0
GF	WALES 16-06N-15E	SALINA-NIAGARAN	1976	ST. CLAIR, WALES-6N,15E,16	3774	3,264	196 D	--	NIAGARAN	3,650	3	0	0	2	120	3,538	46,520	782	475,896	387	2
OF	WALKER	BEREA	1940	KENT, WALKER-7N,12W,4	3730	1,121	21 SL	--	ST. PETER SS.	5,222	WELL COUNT	IN	WALKER	TRAVERSE	220	2,614	53,000	0	0	227	6
GF	WALKER	BEREA, TRAV. & D.R.	1939	KENT, WALKER-6N,12W,4	3730				ST. PETER SS.		14	0	0	5	0	0	0	0	1,348,473	DOMESTIC	& LEASE
OF	WALKER	DETROIT RIVER	1957	KENT, WYOMING-6N,12W,2	3730	2,132	12 D	--	ST. PETER SS.		1	0	0	1	10	323	SEE	WALKER	TRAVERSE		
OF	WALKER	TRAVERSE	1938	KENT, WALKER-7N,12W,32	3730	1,872	8 L	36.0	ST. PETER SS.		783	0	0	340	8,560	93,378	17,614,111	0	3,658,751	2,047	249
GF	WASHINGTON, SEC. 10	SALINA-NIAGARAN	1974	MACOMB, WASHINGTON-4N,12E,10	3813	3,304	179 D	--	NIAGARAN	3,635	17	0	0	17	840	0	17,959	2,030,884	8,234,272	21	0
GF	WASHINGTON, SEC. 10 P/A	NIAGARAN	1976	MACOMB, WASHINGTON-4N,12E,10	3813	3,352	234 D	--	NIAGARAN	3,722	5	0	0	5	200	0	6,201	544,194	2,700,810	31	0
GF	WASHINGTON, SEC. 11	NIAGARAN	1965	MACOMB, WASHINGTON-4N,12E,11	3813	3,290	180 D	--	NIAGARAN	3,686	1	0	0	1	40	0	726	71,740	5,665,789	18	0
OF	WASHINGTON, SEC. 28	A-1 CARBONATE	1975	MACOMB, WASHINGTON-4N,12E,28	3813	3,357	18 D	--	NIAGARAN	3,546	9	0	0	9	400	535	21,556	785,702	3,085,269	53	?
OF	WAYLAND	SALINA	1960	ALLEGAN, WAYLAND-3N,11W,17	3650A	3,132	12 D	28.0	BLACK. RIVER		48	6	0	44	2,080	59,950	1,790,335	0	0	860	8
OF	WAYLAND	TRAVERSE	1944	ALLEGAN, WAYLAND-3N,11W,8	3650	1,799	6 L	36.0	BLK. RIVER	4,400	54	0	0	2	530	371	269,335	0	0	508	1
OF	WAYLAND, NORTH	TRAVERSE	1957	ALLEGAN, WAYLAND-3N,11W,6	3650	1,696	7 L	--	TRAVERSE	1,712	15	0	0	5	150	663	119,721	0	0	798	19
AOF	WEARE	TRAVERSE	1961	OCEANA, WEARE-16N,17W,12	3934	1,681	2 L	--	TRAVERSE	1,737	3		1964		30	0	6,919	0	0	231	0
AOF	WEARE, SEC. 14	TRAVERSE	1952	OCEANA, WEARE-16N,17W,14	3934	1,674	1 L	41.4	DUNDEE	2,217	1		1954		10	0	1,096	0	0	110	0
OF	WEST BRANCH	DETROIT RIVER SZ	1951	OGEMAW, MILLS-21N,3E,6	3687A	3,585	9 D	38.9	PRAIRIE DU CHIEN							SEE	WEST BRANCH	RICHFIELD			
OF	WEST BRANCH	DUNDEE	1933	OGEMAW, WEST BRANCH-22N,2E,27	3687	2,650	20 L	36.8	PRAIRIE DU CHIEN		337	7	0	192	3,660	294,497	11,387,905	0	0	3,111	3,830
OF	WEST BRANCH	RICHFIELD	1952	OGEMAW, OGEMAW-22N,1E,10	3687	4,127	8 D	33.0	PRAIRIE DU CHIEN		75	6	0	71		44,017	3,373,897	995	78,936	1,269	16
OF	WEST BRANCH	TRAVERSE	1933	OGEMAW, WEST BRANCH-22N,2E,27	3687	1,796	2 L	--	PRAIRIE DU CHIEN	11,012						0	SEE	WEST BRANCH	DUNDEE CUM.		
G-C	WEXFORD 01-24N-12W	NIAGARAN	1977	WEXFORD, WEXFORD-24N,12W,1	3812	6,231	91 D	63.4	NIAGARAN	6,640	1	0	0	1	80	397	11,031	183,846	642,645	137	0
G-C	WEXFORD 01-24N-12W P/A	NIAGARAN	1978	WEXFORD, WEXFORD-24N,12W,1	3812	6,167	100 D	63	NIAGARAN	6,612	1	0	0	1	80	438	6,961	142,107	653,822	87	0
G-C	WEXFORD 02-24N-12W	NIAGARAN	1977	WEXFORD, WEXFORD-24N,12W,2	3812	6,156	49 D	--	NIAGARAN	6,267	1	0	0	1	80	14	44,609	40,344	1,177,401	557	0

TABLE 22 MICHIGAN OIL AND GAS FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF DISC.	COUNTY, TOWNSHIP - T, R, SEC. for DISCOVERY WELL only	MAP REF. NO.	DEPTH IN FEET	PAY ZONE THICK-NESS & LITHO	PAY ZONE API OIL GRAV	DEEPEST FORMATION TESTED FORMATION OR POOL NAME	DEEPEST FORMATION TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1982	COMP. IN 1982	ABND. IN 1982	ACTIVE END OF 1982	ACRES DRILLED	OIL IN BBLS. PRODUCED IN 1982	OIL IN BBLS. CUMM. THROUGH 1982	GAS IN MCF PRODUCED IN 1982	GAS IN MCF CUMM. THROUGH 1982	RECOVERY PER ACRE DRILLED IN BBLS	TOTAL BARRELS OF BRINE PER DAY
G-C	WEXFORD 03-24N-12W	NIAGARAN	1977	WEXFORD, WEXFORD-24N,12W,3	3812	6,077	76 D	65.2	NIAGARAN	6,324	1	0	0	1	80	214	47,742	12,628	1,999,152	596	0
G-C	WEXFORD 04-24N-12W	NIAGARAN	1978	WEXFORD, WEXFORD-24N,12W,4	3812	6,095	45 D	64.8	NIAGARAN	6,316	1	0	0	1	160	1,112	96,480	265,784	2,539,822	603	0
OF	WEXFORD 05-24N-12W	NIAGARAN	1974	WEXFORD, WEXFORD-24N,12W,5	3812	5,820	127 D	--	NIAGARAN	6,119	7	0	0	7	440	111,992	833,086	424,625	1,146,473	1,893	7
OF	WEXFORD 05-24N-12W P/A	NIAGARAN	1976	WEXFORD, WEXFORD-24N,12W,5	3812	5,785	229 D	48.3	NIAGARAN	6,192	1	0	0	1	80	18,417	179,816	159,038	896,498	2,247	0
OF	WEXFORD 06-24N-12W	NIAGARAN	1975	WEXFORD, WEXFORD-24N,12W,6	3812	5,775	153 D	41.1	NIAGARAN	6,061	5	0	0	5	320	291,514	1,616,785	437,522	1,087,408	5,052	44
AG-C	WEXFORD 09-24N-12W	NIAGARAN	1973	WEXFORD, WEXFORD-24N,12W,9	3812	6,232	4 D	69.8	NIAGARAN	6,265	1		1978		80	0	0	0	0	0	0
G-C	WEXFORD 09-24N-12W P/A	NIAGARAN	1973	WEXFORD, WEXFORD-24N,12W,9	3812	6,041	101 D	69.8	NIAGARAN	6,414	1	0	0	1	80	293	153,304	36,330	924,962	1,916	0
OF	WEXFORD 09-24N-12W P/B	NIAGARAN	1974	WEXFORD, WEXFORD-24N,12W,9	3812	6,081	71 D	42.4	NIAGARAN	6,324	3	0	0	3	240	68,197	598,637	65,641	563,729	2,494	1
G-C	WEXFORD 10-24N-12W	NIAGARAN	1972	WEXFORD, WEXFORD-24N,12W,10	3812	6,124	107 D	68.9	NIAGARAN	6,352	1	0	0	1	160	87	86,148	111,512	3,565,405	538	0
GF	WEXFORD 17-24N-12W	NIAGARAN	1981	WEXFORD, WEXFORD-24N,12W,17	3812	6,128	51 D	--	NIAGARAN	6,270	1	0	0	1	80	0	40	0	0	0	0
G-C	WEXFORD 18-24N-12W	NIAGARAN	1973	WEXFORD, WEXFORD-24N,12W,18	3812	5,842	96 D	--	NIAGARAN	6,130	3	0	0	3	360	938	66,764	936,281	7,160,437	185	0
OF	WEXFORD 18-24N-12W P/A	NIAGARAN	1975	WEXFORD, WEXFORD-24N,12W,18	3812	5,885	54 D	42.1	NIAGARAN	6,165	3	0	0	3	240	14,041	545,483	40,634	976,101	2,272	1
G-C	WEXFORD 20-24N-12W	NIAGARAN	1979	WEXFORD, WEXFORD-24N,12W,20	3812	6,082	20 L	--	NIAGARAN	6,240	2	0	0	2	160	0	48	0	0	0	0
AOF	WHEATLAND	DUNDEE	1945	MECOSTA, WHEATLAND-14N,7W,7	3673	3,690	2 L	43.0	DETROIT RIVER		6		1960		100	0	141,631	0	0	1,416	0
GF	WHEATLAND	MICHIGAN STRAY	1947	MECOSTA, WHEATLAND-14N,7W,9	3673	1,399	3 S	--	DETROIT RIVER	3,849	4	0	0	1	160	0	0	0	516,496	0	DOMESTIC
AOF	WHITE CLOUD	TRAVERSE	1963	NEWAYGO, WILCOX-14N,12W,19	3581	2,537	1 L	--	TRAVERSE	2,540	1		1964		40	0	1,295	0	0	32	0
OF	WHITE OAK 04-02N-02E	NIAGARAN	1981	INGHAM, WHITE OAK-2N,2E,4	3825	4,479	45 D	--	NIAGARAN	4,617	1	0	0	1	80	23,888	30,285	0	0	378	0
OF	WHITE OAK 11-02N-02E	SALINA-NIAGARAN	1981	INGHAM, WHITE OAK-2N,2E,11	3825	4,252	48 D	--	NIAGARAN	4,728	1	0	0	1	80	90	1,575	0	0	19	0
OF	WHITE OAK 15-02N-02E	NIAGARAN	1980	INGHAM, WHITE OAK-2N,2E,15	3825	4,357	4 D	33	NIAGARAN	4,480	1	0	0	1	80	30,153	41,493	1,204	1,204	518	0
OF	WHITE OAK 15-02N-02E P/A	NIAGARAN	1981	INGHAM, WHITE OAK-2N,2E,15	3825	4,197	21 D	--	NIAGARAN	4,469	1	0	0	1	160	6,948	6,948	0	0	43	0
OF	WHITE OAK 17-02N-2E	Al CARBONATE-NIAGARAN	1982	INGHAM, WHITE OAK-02N,02E,18	3825	4,184	70 D	35.6	NIAGARAN	4,512	1	1	0	1	160	3,639	3,639	0	0	23	0
OF	WHITE OAK 29-02N-02E	SALINA-NIAGARAN	1974	INGHAM, WHITE OAK-2N,2E,29	3825	4,066	19 D	--	NIAGARAN	4,583	3	1	0	2	200	8,250	74,783	0	0	373	43
OF	WHITE OAK 30-02N-02E	NIAGARAN	1980	INGHAM, WHITE OAK-2N,2E,30	3825	4,231	25 D	36.4	NIAGARAN	4,276	1	0	0	1	80	47,011	81,547	13,240	17,178	1,019	45
OF	WHITE OAK 32-02N-02E	SALINA-NIAGARAN	1973	INGHAM, WHITE OAK-2N,2E,32	3825	3,970	8 D	--	CATARACT	4,583	2	0	0	1	160	839	74,361	483	19,941	464	69
OF	WHITE OAK 32-02N-02E P/A	NIAGARAN	1977	INGHAM, WHITE OAK-2N,2E,32	3825	4,046	6 D	--	CATARACT	4,278	1	0	0	1	80	0	14,274	0	0	178	0
AOF	WHITE RIVER	DUNDEE	1950	MUSKEGON, WHITE RIVER-12N,18W,15	3557	2,053	2 L	28.0	DUNDEE	2,055	1		1951		20	0	7,061	0	0	353	0
OF	WHITEWATER 20-27N-09W	NIAGARAN	1978	GD. TRAVERSE, WHITEWATER-27N,9W,20	3789	6,095	15 D	45.7	NIAGARAN	6,360	2	1	0	2	160	52,495	154,475	163,326	562,063	965	96
OF	WHITEWATER 20-27N-09W P/A	NIAGARAN	1979	GD. TRAVERSE, WHITEWATER-27N,9W,20	3789	6,149	24 D	45	NIAGARAN	6,360	2	1	0	2	160	158,564	457,008	243,741	587,843	2,856	539
OF	WHITEWATER 20-27N-09W P/B	NIAGARAN	1979	GD. TRAVERSE, WHITEWATER-27N,9W,20	3789	5,962	17 D	48.3	NIAGARAN	6,455	1	0	0	1	80	39	5,671	4	76,012	70	0
G-C	WHITEWATER 22-27N-09W	NIAGARAN	1973	GD. TRAVERSE, WHITEWATER-27N,9W,22	3789	6,172	62 D	--	NIAGARAN	6,516	3	0	0	3	200	36,734	408,227	110,996	14,635,960	2,041	273
OF	WHITEWATER 28-27N-09W	NIAGARAN	1975	GD. TRAVERSE, WHITEWATER-27N,9W,28	3789	6,096	22 D	43.8	NIAGARAN	6,310	2	1	0	2	160	70,449	359,671	226,655	1,080,527	2,247	436
OF	WHITEWATER 32-27N-09W	NIAGARAN	1972	GD. TRAVERSE, WHITEWATER-27N,9W,32	3789	6,100	10 D	44.3	NIAGARAN	6,260	2	0	0	2	160	35,698	1,038,534	147,042	1,811,077	6,490	464
OF	WHITEWATER 34-27N-09W	NIAGARAN	1972	GD. TRAVERSE, WHITEWATER-27N,9W,34	3789	6,292	16 D	44.9	NIAGARAN	6,580	1	0	0	1	80	1,404	81,575	0	3,552	1,019	0
OF	WHITEWATER 35-27N-09W	NIAGARAN	1972	GD. TRAVERSE, WHITEWATER-27N,9W,35	3789	6,270	60 D	39	NIAGARAN	6,770	1	0	0	1	80	5,982	164,371	0	7,020	2,054	200
OF	WHITEWATER 35-27N-09W P/A	NIAGARAN	1980	GD. TRAVERSE, WHITEWATER-27N,9W,35	3789	6,412	28 D	51.1	NIAGARAN	6,743	1	0	0	1	80	25,933	42,212	172,318	239,673	527	2
G-C	WHITEWATER 36-27N-09W	NIAGARAN	1971	GD. TRAVERSE, WHITEWATER-27N,9W,36	3789	6,560	40 D	66	NIAGARAN	6,750	1	0	0	1	40	469	64,941	66,784	6,271,362	1,623	0
G-C	WHITEWATER 36-27N-09W P/A	NIAGARAN	1976	GD. TRAVERSE, WHITEWATER-27N,9W,36	3789	6,300	334 D	61.9	NIAGARAN	6,757	1	0	0	1	80	0	30,387	44,231	5,971,545	379	0
OF	WILEY	TRAVERSE	1962	MASON, EDEN-17N,16W,18	3628	1,663	5 L	39.9	ST. PETER SS.	5,890	18	0	0	4	380	0	426,427	0	0	1,122	0
OF	WILLIAMS	BEREA	1980	BAY, WILLIAMS-14N,3E,8	3935	2,403	5 S	43	DUNDEE	3,718	43	27	0	42	1,640	123,932	171,108	0	0	104	531
AOF	WINFIELD	DUNDEE-REED CITY	1936	MONTCALM, WINFIELD-12N,9W,20	3718	3,340	1 L	43.2	REED CITY	3,500	8		1980		120	0	119,412	0	0	995	0
GF	WINTERFIELD	BLACK RIVER	1982	CLARE, WINTERFIELD-20N,06W,30	3569	10,276	80 D	--	PRAIRIE DU CHIEN	12,017	1	1	0	1	640	0	0	0	0	0	0
OF	WINTERFIELD	DUNDEE	1940	CLARE, WINTERFIELD-20N,6W,35	3569	3,794	3 L	44.2	SYLVANIA		SEE	RICH FOR	WELL	COUNT	740	27,417	4,896,622	0	0	6,617	3,225
OF	WINTERFIELD	RICHFIELD	1942	CLARE, WINTERFIELD-20N,6W,30	3569	5,015	15 D	--	SYLVANIA		81	0	0	43	1,300	144,328	829,752	0	0	638	121
OF	WINTERFIELD	TRAVERSE	1940	CLARE, WINTERFIELD-20N,6W,29	3569	3,105	1 L	--	SYLVANIA	5,273	SEE	RICH FOR	WELL	COUNT	200	9,312	338,010	501,058	1,868,956	1,690	4
OF	WISE	DETROIT RIVER	1955	ISABELLA, WISE-16N,3W,33	3542	4,415	48 DL	42.6	SYLVANIA		2	1	0	2	1,640	1,708	76,853	0	0	46	110
OF	WISE	DUNDEE	1938	ISABELLA, WISE-16N,3W,28	3542	3,700	11 L	45.2	SYLVANIA		79	1	0	26*	1,320	11,973	4,035,221	0	0	3,056	1,867
GF	WISE	MICHIGAN STRAY	1940	ISABELLA, WISE-16N,3W,17	3542	1,250	5 S	--	SYLVANIA	5,205	?	0	0	5	1,280	0	0	0	1,739,233	0	DOM/LEASE
OF	WISE	TRAVERSE	1953	ISABELLA, WISE-16N,3W,33	3542	3,090	31 L	43.0	SYLVANIA	SEE	DUNDEE FOR	WELL	COUNT	1,580	502	56,643	0	0	42	142	
AGF	WOLF LAKE	BEREA	1949	MUSKEGON, EGELSTON-10N,15W,7	3557	1,050	7 D	--	DETROIT RIVER	2,250	2		1956		320	0	0	0	101,751	0	0
OF	WOLF LAKE	TRAVERSE	1968	MUSKEGON, EGELSTON-10N,15W,18	3557	1,741	23 L	--	DETROIT RIVER		4	0	0	2	60	96	5,626	0	0	93	14
GF	WOODSTOCK	TRAVERSE	1969	LENAWEE, WOODSTOCK-5S,1E,18	3698	1,465	2 L	--	TRAVERSE	1,467	2	0	0	1	80	0	0	SHUT-IN FOR MARKET	0	0	0
OF	WOODVILLE	TRAVERSE	1943	NEWAYGO, NORWICH-15N,11W,29	3676	2,820	5 L	43.5	DETROIT RIVER	3,534	10	0	0	9	350	3,982	602,019	0	0	1,720	210
OF	WRIGHT	"BEREA"	1954	OTTAWA, WRIGHT-8N,13W,32	3682	1,170	3 L	--	DETROIT RIVER	2,337	7	0	0	1	60	141	49,915	SHUT-IN LACK OF STORAGE		820	2
OF	WRIGHT	TRAVERSE	1953	OTTAWA, WRIGHT-8N,13W,33	3682	1,920	1 L	--	DETROIT RIVER		7	0	0	2	70	422	19,509	0	0	278	3
AOF	WYOMING PARK	TRAVERSE	1939	KENT, WYOMING-6N,12W,14	3731	1,870	6 L	39.0	DETROIT RIVER	2,255	21		1970		300	0	157,873	0	0	526	0
GF	YANKEE	NIAGARAN	1963	ST. CLAIR, ST. CLAIR-5N,16E,25	3750	2,620	20 D	--	NIAGARAN	2,829	2	0	0	2	80	0	0	57,067	420,176	0	0
AGF	ZEELAND	"BEREA"	1946	OTTAWA, ZEELAND-5N,14W,2	3583	945	9 D	--	NIAGARAN	3,388	7		1975		280	0	0	0	0	0	DOMESTIC
OF	ZEELAND	SALINA	1958	OTTAWA, ZEELAND-5N,14W,29	3583	2,792	5 D	20.5	NIAGARAN		5	1	0	3	300	5,596	28,254	0	0	94	45
AOF	ZEELAND	TRAVERSE	1942	OTTAWA, ZEELAND-5N,14W,30	3583	1,514	3 L	41.9	NIAGARAN	3,052	21		1967		400	0	310,085	0	0	775	0
AOF	ZEELAND, SEC. 28	TRAVERSE	1954	OTTAWA, ZEELAND-5N,14W,28	3583	1,491	1 L	--	DETROIT RIVER	2,215	3		1956		30	0	4,437	0	0	0	0

TABLE 23 GAS STORAGE FIELDS

POOL CLASS	FIELD OR POOL NAME	PRODUCING FORMATION	YEAR OF	COUNTY, TOWNSHIP - T, R, SEC for Discovery Well	MAP REF	DEPTH IN	PAY ZONE THICK-NESS &	PAY ZONE API OIL	DEEPEST FORMATION TESTED FORMATION OR POOL NAME	DEEPEST FORMATION TESTED DEPTH IN FEET	NUMBER OF WELLS TO END 1981	COMP IN 1981	ABND IN 1981	ACTIV @ END 1981	ACRES DRILLED	OIL in BBLS PRODUCED IN 1981	OIL in BBLS CUMMULATIVE THROUGH 1981	GAS in MCF PRODUCED IN 1981	GAS in MCF CUMMULATIVE THROUGH 1981	YEAR MADE STORAGE FIELD	STORAGE WORKING CAPACITY [Bcf]
GS	AUSTIN	MICHIGAN STRAY	1933	MECOSTA, AUSTIN-14N, 9W, 11	3449A	1,380	14 S	--	DETROIT RIVER	4,034	123	2	0	115	3,970		0		6,231,214	1941	13
GS	BELLE RIVER MILLS	SALINA-NIAGARAN	1961	ST. CLAIR, CHINA-4N,16E,15	3741	2,215	305 D	--	NIAGARAN	2,694	27	0	2	24	840		1,212		24,457,396	1965	54
GS	CAPAC	NIAGARAN	1962	ST. CLAIR, MUSSEY-7N,13E,18	3689	4,505	6 D	--	MT. SIMON SS.	6,337	98	0	0	91	12,560		5,983		21,365,445	1978	30
GS	CHARLTON 1-30N-01W	NIAGARAN	1975	OTSEGO, CHARLTON-30N,1W,1	3790	5,885	6 D	68.1	NIAGARAN	6,165	6	4	0	6	200	4,906	279,162	702,558	11,044,031	1982	16.4
GS	CHESTER, SEC. 15	NIAGARAN	1970	OTSEGO, CHESTER-29N,02W,15	3777	5,930	348 D	--	NIAGARAN	6,697	6	0	0	6		28,792	333,454	0	13,977,778		0
GS	CLARENCE 19-01S-04W	NIAGARAN	1971	CALHOUN, CLARENCE-1S,4W,19	3869	3,154	24 D	--	NIAGARAN	3,240	1	0	0	1	160		0		1,057,656	1975	1
GS	COLD SPRINGS 12-28N-06W	NIAGARAN	1973	KALKASKA, COLD SPRINGS-28N,06W,12	3784	6,564	296 D	66.8	NIAGARAN	6,970	11	0	0	11	400	57,295	598,566	0	18,329,674		11
GS	COLD SPRINGS 31-28N-06W	NIAGARAN	1974	KALKASKA, COLD SPRINGS-28N,6W,31	3784	6,970	14 D	--	NIAGARAN	7,135	3	2	0	3	80		88,370		5,042,845	1980	5
GS	COLDWATER	MICHIGAN STRAY	1945	ISABELLA, COLDWATER-16N,6W,29	3599	1,390	10 S	--	SYLVANIA	5,090	78	0	0	73	2,400		0		7,530,450	1956	8
GS	COLLIN	SALINA-NIAGARAN	1968	ST. CLAIR, COTTRELLVILLE-3N,16E,20	3738	2,196	4 D	--	NIAGARAN	2,364	2	0	0	2	80		2,139		1,686,717	1981	2.0
GS	COLUMBUS	SALINA-NIAGARAN	1964	ST. CLAIR, COLUMBUS-5N,15E,22	3755	2,738	190 D	--	NIAGARAN	3,232	20	0	0	18	320		0		13,598,373	1972	18
GS	COLUMBUS, WEST	SALINA-NIAGARAN	1967	ST. CLAIR, COLUMBUS-5N,15E,18	3755	3,183	14 D	--	NIAGARAN	3,447	29	0	0	21	520		0		16,613,514	1973	20
GS	CRANBERRY LAKE	MICHIGAN STRAY	1943	CLARE, SUMMERFIELD-20N,5W,5	3645	1,321	10 S	--	RICHFIELD	5,201	171	0	0	149	7,000		0		7,688,200	1947	13
GS	CROTON	MARSHALL	1951	NEWAYGO, CROTON-12N,11W,29	3668	917	4 S	--	SALINA	3,993	63	0	0	56	860		0		1,347,252	1957	4
GS	EXCELSIOR 06-27N-06W	NIAGARAN	1973	KALKASKA, EXCELSIOR-27N,6W,6	3794	6,740	105 D	66	NIAGARAN	7,076	6	5	0	6	160	5,956	166,200		6,895,079	1980	9.6
GS	FOUR CORNERS	SALINA-NIAGARAN	1966	ST. CLAIR, IRA-3N,15E,1	3737	2,205	212 D	--	NIAGARAN	2,638	5	0	0	2	80		0		1,124,375	1972	1.4
GS	FREEMAN-LINCOLN	MICHIGAN STRAY	1938	CLARE, LINCOLN-18N,5W,17	3898	1,500	10 S	--	DETROIT RIVER	3,957	179	0	0	155	6,600		0		18,461,480	1950	21
GS	GOODWELL	MICHIGAN STRAY	1943	NEWAYGO, GOODWELL-14N,11W,9	3675	1,142	20 S	--	DETROIT RIVER	3,562	98	0	0	87	3,020		0		5,993,183	1948	19
GS	HAMILTON, NORTH	MICH. STRAY-MARSHALL	1952	CLARE, HAMILTON-19N,3W,6	3559	1,487	8 S	--	RICHFIELD	5,395	66	0	0	53	3,040		0		5,559,066	1960	8
GS	HESSEN	NIAGARAN	1965	ST. CLAIR, CASCO-4N,15E,3	3737	2,499	261 D	--	NIAGARAN	2,887	21	0	0	12	640		119,972		11,811,127	1976	13.6
GS	HOWELL	SALINA-NIAGARAN	1935	LIVINGSTON, HOWELL-3N,4E,35	3282	3,920	9 D	--	ST. PETER SS.	5,958	72	0	0	69	2,400		0		24,151,682	1962	20
GS	IRA	SALINA-NIAGARAN	1953	ST. CLAIR, IRA-3N,15E,2	3757	2,276	33 D	--	NIAGARAN	2,632	15	0	0	10	680		0		3,568,639	1961	4
GS	KALKASKA 01-27N-07W	NIAGARAN	1975	KALKASKA, KALKASKA-27N,7W,1	3785	7,116	20 D	65	NIAGARAN	7,197	2	1	0	2	160		25,926		2,647,612	1980	
GS	LACEY STATION	A-2 SALT SOLN. CAVERN	1971	BARRY, JOHNSTOWN-1N,8W,14	3551			--	CAMBRIAN		2	0	0	2			0		0	1975	.2
GS	LEE 02-01S-05W	NIAGARAN	1973	CALHOUN, LEE-01S,05W,02	3842	3,377	12 D	--	NIAGARAN	3,710	1	0	0	1	160	0	509	SEE LEE 02-01S-05W	P/B FOR	CUM GAS	0
GS	LEE 04-01S-05W	SALINA-NIAGARAN	1972	CALHOUN, LEE-1S,5W,4	3842	3,162	86 D	--	NIAGARAN	3,475	2	0	0	2	320		178		716,595	1976	0.7
GS	LEE 16	SALINA-NIAGARAN		CALHOUN, LEE-1S,5W,16	3842	3,200		--	NIAGARAN		1	0	0	1	300		0		0	1975	1
GS	LENOX	SALINA-NIAGARAN	1960	MACOMB, LENOX-4N,14E,32	3690	2,734	46 D	--	NIAGARAN	3,018	14	0	0	6	300		2,565		2,195,733	1965	1.5
GS	MARION(WINTERFIELD)	MICHIGAN STRAY	1940	CLARE, WINTERFIELD-20N,6W,19	3569	1,344	15 S	--	SYLVANIA	5,100	284	0	0	256	10,720		0		20,486,635	1947	33
GS	MARSAC CREEK	SALINA-NIAGARAN	1965	ST. CLAIR, CASCO-4N,15E,29	3737	2,450	190 D	--	NIAGARAN	2,903	7	0	0	3	200	0	1,681	0	4,024,523	1977	3.3
GS	MARYSVILLE-MORTON	SEE FOOTNOTE FOR GAS STORAGE		FIELDS ON NEXT PAGE				--									0		0		0
GS	MUTTONVILLE	SALINA-NIAGARAN	1966	MACOMB, LENOX-4N,14E,13	3690	2,576	194 D	--	NIAGARAN	3,039	18	0	0	16	280		0		10,506,417	1975	14
GS	NORTHVILLE	TRENTON-BLK. RIVER	1954	WASHTENAW, SALEM-1S,7E,1	3683	4,395	70 D	--	CAMBRO-ORDOVICIAN	5,850	78	0	0	47	2,825		0		18,202,766	1968	11.8
GS	ORIENT	MICHIGAN STRAY	1945	OSCEOLA, ORIENT-17N,7W,13	3561	1,508	11 S	--	SYLVANIA	5,307	77	0	0	68	2,600		0		5,457,873	1951	6
GS	OVERISEL	SALINA	1956	ALLEGAN, OVERISEL-4N,14W,16	3705	2,650	12 D	--	TRENTON	4,060	194	0	0	160	6,660		0		14,937,949	1960	24
GS	PARTELLO	SALINA-A-1 CARB.	1959	CALHOUN, LEE-1S,5W,12	3761	3,192	30 D	--	TRENTON-BLK. RIVER	4,905	7	0	0	4	200		0		1,729,226	1971	2
GS	PUTTYGUT	SALINA-NIAGARAN	1960	ST. CLAIR, CASCO-4N,15E,11	3737	2,423	60 D	--	NIAGARAN	2,774	26	0	0	23	440	SEE	ADAIR		11,485,690	1971	11
GS	RAPID RIVER 35-28N-07W	NIAGARAN	1973	KALKASKA, RAPID RIVER-28N,7W,35	3781	6,719	27 D	67	NIAGARAN	6,886	9	0	0	9	360	60,912	372,126	0	13,685,116	1980	15
GS	RAY	SALINA-NIAGARAN	1961	MACOMB, RAY-4N,13E,1	3690	2,945	101 D	--	NIAGARAN	3,273	49	0	0	39	660		1,689		35,907,293	1966	46
GS	REED CITY	MICHIGAN STRAY	1940	OSCEOLA, LINCOLN-18N,10W,30	3857	1,217	12 S	--	ST. PETER SS	8,960	102	0	0	92	4,880		0		7,795,091	1947	18
GS	REED CITY	REED CITY	1941	OSCEOLA, LINCOLN-18N,10W,31	3857	3,585	7 D	42.8	ST. PETER SS		274	0	0	171	5,320	43,783	42,451,772		0	1963	45
GS	RIVERSIDE	MICHIGAN STRAY	1940	MISSAUKEE, RIVERSIDE-21N,7W,22	3571	1,435	7 S	--	DUNDEE	3,953	99	0	0	79	3,680		0		5,292,251	1962	2
GS	SALEM	SALINA	1941	ALLEGAN, SALEM-4N,13W,21	3715	2,725	2 D	--	TRENTON	3,792	64	0	0	62	4,960		2,973		11,536,912	1963	10
GS	SHAVER (SUMNER-NEW HAVEN)	MICHIGAN STRAY	1935	GRATIOT, NEW HAVEN-10N,4W,4	3447	1,020	11 S	--	DUNDEE	3,536	55	0	0	45	3,920		0		11,337,204	1958	12
GS	SIX LAKES	MICHIGAN STRAY	1934	MONTCALM, BELVIDERE-12N,7W,11	3660	1,270	25 S	--	DETROIT RIVER	3,790	404	0	0	194	11,480		0		52,636,813	1953	54
GS	SWAN CREEK	SALINA-NIAGARAN	1967	ST. CLAIR, CASCO-4N,15E,36	3737	2,256	245 D	--	NIAGARAN	2,638	1	0	0	1	40		0		417,539	1972	1.4
GS	WINFIELD	MICHIGAN STRAY	1935	MONTCALM, WINFIELD-12N,9W,17	3718	1,125	8 S	--	DETROIT RIVER	3,405	133	0	0	86	3,240		0		4,932,855	1950	12
GS	WOODVILLE (NORWICH)	MICHIGAN STRAY	1943	NEWAYGO, NORWICH-15N,11W,21	3677	1,185	13 S	--	DETROIT RIVER	3,405	53	0	0	39	2,240		0		2,736,924	1951	5

TABLE 24 PRESSURE MAINTENANCE AND SECONDARY RECOVERY OPERATIONS

FIELD AND COUNTY	(OPERATOR) TYPE OF PROJECT	DISC. & YEAR PROJECT BEGAN	PAY ZONE FORM.	PAY ZONE INTOX	PAY ZONE DEPTH	TOTAL UNIT ACRES	INJECTION FLUIDS/ PRESSURE (PSIG)	VOLUME OF INJECTED FLUIDS 1982 REP. GAS	VOLUME OF INJECTED FLUIDS 1982 BARRELS WATER	VOLUME OF INJECTED FLUIDS 1982 INJ. WELLS	CUMULATIVE VOLUME OF INJECTED FLUID MCF GAS	CUMULATIVE VOLUME OF INJECTED FLUID BARRELS WATER	UNIT PRODUCTION IN 1982	BARRELS OIL	SALES MCF GAS	WATER PRODUCED	NO. WELLS	UNIT CUMULATIVE 1-1-83	BARRELS OIL	SALES MCF GAS	BARRELS WATER
AURELIUS 35 UNIT INGHAM CO.	(1)UWF	1971 1974	NIAG.	110	4075	400	BRINE (853)	NONE	895,020	2	NONE	5,957,626	P S	0 74,048	44,294	917,062	5	P S	805,000 1,106,204	1,036,602	3,017,025
BEAVER CREEK CRAWFORD-KALKASKA CO.	(2)UWF	1947 1963	RICH.	17	4400	4640	FRESH WATER (2268)	NONE	5,360,092	60	NONE	95,309,926	P S	0 472,606	*169,506	719,573	56	P S	7,750,000 6,614,676	20,716,078	7,527,362
BEAVERTON WEST GLADWIN CO.	(3)UWF	1943 1966	DD.	2	3876	480	FRESH WATER & BRINE (2100)	NONE	32,400	2	NONE	811,589	P S	0 4,701	NONE	23,725	5	P S	180,000 65,753	NONE	182,320
BEATTLEY DUNDEE GLADWIN CO.	(4)UWF	1937 1964	DD.	13	3510	640	FRESH WATER & BRINE (2300)	NONE	110,662	4	NONE	1,952,359	P S	0 12,608	NONE	14,746	7	P S	382,000 162,395	NONE	595,773
BERLIN ST. CLAIR CO.	(12)UWF	1960 1970	NIAG.	30	3800	200	BRINE (250)	NONE	17,745	1	NONE	1,713,014	P S	240 0	NONE	15,147	1	P S	350,824 27,536	NONE	225,388
BILLINGS 2 GLADWIN CO.	(9)UWF	1949 1981	DD.-D.R.	7	4070	600	BRINE (1450)	NONE	99,283	4	NONE	228,128	P S	11,669 0	NONE	730	24	P S	11,669 0	NONE	730
BLUE LAKE 1-28N-5W KALKASKA CO.	(13)UWF	1971 1979	NIAG.	18	6481	280	FRESH WATER & BRINE (VACUUM)	NONE	577,675	1	NONE	1,044,152	P S	57,905 0	5,762	474,500	1	P S	1,109,378 0	408,447	1,266,775
BLUE LAKE 19A UNIT KALKASKA CO.	(13)UWF	1976 1980	NIAG.	168	6967	80	BRINE (VACUUM)	NONE	110,392	1	NONE	284,674	P S	4,825 0	12,522	21,900	1	P S	98,376 0	363,009	65,336
CHARLTON 4-31N-1W OTSEGO CO.	(11)URG	1970 1981	NIAG.	211	4766	640	RECYCLED GAS (VACUUM)	325,764	NONE	1	559,164	NONE	P S	218,009 0	81,927	15,695	4	P S	335,159 0	2,078,282	15,695
CHARLTON 10-30N-1W OTSEGO CO.	(11)UWF	197A 1980	NIAG.	197	5965	160	FRESH WATER (VACUUM)	NONE	239,944	1	NONE	519,767	P S	36,332 0	121,775	255,500	1	P S	597,738 0	665,791	651,925
CHESTER 18 UNIT OTSEGO CO.	(11)UWF	1971 1978	NIAG.	20	6330	1280	FRESH WATER (VACUUM)	NONE	6,936,557	6	NONE	22,561,545	P S	0 1,219,386	792,858	5,351,813	11	P S	8,030,053 2,199,838	7,118,147	11,489,260
CHESTER 21-30N-2W OTSEGO CO.	(11)UWF	1970 1981	NIAG.	29	5210	360	FRESH WATER (VACUUM)	NONE	1,815,467	3	NONE	1,836,970	P S	294,157 0	174,973	31,573	5	P S	294,153 0	174,973	31,573
CLARENCE 27 CALHOUN CO.	(14)URG	1979 1980	NIAG.	30	3195	40	RECYCLE GAS (1095)	116,550	NONE	1	223,412	NONE	P S	13,297 0	27,866	11,315	1	P S	42,206 0	27,866	27,558
COLUMBUS 3 UNIT ST. CLAIR CO.	(5)URGWF	1968 1974	NIAG.	49	3105	860	RECYCLE GAS AND BRINE (VACUUM)	759,325	14,100	2 GAS 1 WTR	4,662,888	173,255	P S	0 233,740	344,362	38,690	12	P S	3,275,000 2,403,144	423,858	423,845
CRANBERRY LAKE CLARE CO.	(4)UWF	1951 1969	RICH.	15	5048	680	FRESH WATER (2825)	NONE	378,643	8	NONE	4,853,225	P S	11,000 48,088	NONE	169,543	8	P S	1,172,737 431,059	NONE	1,140,897
EAST NORWICH MISSAUKEE CO.	(5)URGWF	1942 1947	RICH.	14	4880	8640	FRESH WATER (2433)	NONE	1,986,718	63	11,699,478	27,589,641	P S	0 622,890	*588,990	1,071,640	129	P S	5,800,000 7,306,499	12,456,656	5,295,418
ENTERPRISE MISSAUKEE CO.	(5)URGWF	1943 1953	RICH.	16	4405	1320	FRESH WATER (2300)	NONE	591,101	20	1,419,641	10,418,286	P S	0 232,607	*116,711	409,165	41	P S	1,925,000 2,028,527	2,022,839	1,920,138
FREDERIC 10 UNIT CRAWFORD CO.	(11)UWF	1971 1980	NIAG.	106	6869	640	FRESH WATER (VACUUM)	NONE	1,266,257	3	NONE	3,071,453	P S	337,247 0	262,098	256,048	5	P S	2,123,639 0	3,621,020	606,813
GROUT GLADWIN CO.	(5)UWF	1956 1960	RICH.	10	5039	480	FRESH WATER (1925)	NONE	193,433	5	NONE	4,247,156	P S	0 16,704	NONE	125,378	6	P S	900,000 967,708	NONE	1,645,107
HAMILTON CLARE CO.	(5)UWF	1952 1958	RICH.	12	5145	1800	FRESH WATER (2121)	NONE	796,602	17	NONE	21,522,403	P S	0 98,900	45,815	855,743	26	P S	2,800,000 4,088,649	4,346,033	8,444,684
HAYES 15 OTSEGO CO.	(11)UWF	1973 1979	NIAG.	80	6350	520	FRESH WATER (VACUUM)	NONE	1,406,626	2	NONE	3,677,687	P S	675,536 0	318,682	229,950	2	P S	3,184,922 0	1,636,088	286,633
HAYES 21A OTSEGO CO.	(11)UWF	1972 1981	NIAG.	220	6513	400	FRESH WATER (VACUUM)	NONE	1,639,658	3	NONE	2,343,575	P S	389,269 0	*248,888	99,463	5	P S	1,958,621 0	2,006,134	104,026
HEADQUARTERS ROSCOMMON CO.	(7)UWF	1952 1969	RICH.	13	4946	720	FRESH WATER (2322)	NONE	199,091	11	NONE	4,029,469	P S	0 35,015	NONE	55,407	7	P S	722,000 582,606	NONE	630,118
INGHAM 13 INGHAM CO.	(1)UWF	1972 1980	NIAG.	91	4377	480	FRESH WATER & BRINE (235)	NONE	386,995	2	NONE	898,795	P S	91,571 0	54,057	338,173	3	P S	1,049,240 0	889,290	515,929
KALKASKA 21 POOL A KALKASKA CO.	(10)URG	1972 1979	NIAG.	192	6562	1040	RECYCLE GAS (1750)	149,343	NONE	1	807,007**A	NONE	P S	116,025 2,000	453,180	2,555	1	P S	1,595,248 8,000	3,044,329	2,555
KALKASKA 21 POOL C KALKASKA CO.	(10)URG	1972 1977	NIAG.	130	6600	1040	RECYCLE GAS (1850)	307,228	NONE	1	1,691,714**A	NONE	P S	0 57,326	570,215	NONE	1	P S	847,000 189,626	2,832,211	NONE
KALKASKA 21 POOL D KALKASKA CO.	(10)URG	1971 1976	NIAG.	170	6590	1040	RECYCLE GAS (1700)	347,609	NONE	1	2,106,656**A	NONE	P S	0 113,992	1,043,608	8,213	1	P S	1,908,000 464,024	3,932,938	9,491
MANISTEE 1 UNIT MANISTEE CO.	(11)URG	1973 1976	NIAG.	158	4440	320	RECYCLE GAS (1640)	593,578	NONE	1	4,070,985**A	NONE	P S	49,855 5,500	74,408	NONE	1	P S	673,218 21,769	214,369	NONE
MAYFIELD 30 GRAND TRAVERSE CO.	(11)UWF	1974 1982	NIAG.	206	6283	240	FRESH WATER (VACUUM)	NONE	242,927	2	NONE	242,927	P S	76,793 0	252,415	44,348	2	P S	76,793 0	252,415	44,348
MAYFIELD 30 POOL B GRAND TRAVERSE CO.	(11)UWF	1976 1979	NIAG.	82	6283	80	FRESH WATER (VACUUM)	NONE	63,966	1	NONE	284,996	P S	26,844 0	11,975	45,443	2	P S	202,192 0	147,149	160,488
ONONDAGA 10-1N-2W INGHAM CO.	(1)UWF	1971 1973	NIAG.	75	3784	1760	BRINE (800)	NONE	3,659,944	9	NONE	29,058,168	P S	0 271,664	507,271	4,383,285	15	P S	2,703,000 4,701,228	8,480,562	16,147,907
ONONDAGA 21 UNIT A INGHAM CO.	(1)UWF	1971 1978	NIAG.	65	3629	1120	BRINE (1095)	NONE	563,483	4	NONE	5,366,695	P S	0 7,851	25,105	437,818	10	P S	1,612,000 69,372	4,705,269	1,632,464
ONONDAGA 21 UNIT B INGHAM CO.	(1)UWF	1971 1978	NIAG.	59	3688	480	BRINE (1111)	NONE	654,640	3	NONE	4,672,182	P S	0 131,014	65,375	776,173	4	P S	1,611,000 306,218	1,602,984	2,426,703
PENNFIELD 35 UNIT CALHOUN CO.	(1)UWF	197A 1976	NIAG.	4	2820	1360	BRINE (1065)	NONE	2,579,108	4	NONE	11,588,822	P S	0 106,785	15,697	1,128,580	10	P S	1,549,000 687,036	428,704	3,588,658
PLEASANTON 36 MANISTEE CO.	(16)UWF	197A 1982	NIAG.	292	4474	160	FRESH WATER (310)	NONE	515,559	3	NONE	515,559	P S	76,949 0	28,531	48,363	2	P S	76,949 0	28,531	48,363
REED CITY LAKE-OSCEOLA CO.	(8)GSOR	1940 1963	DD.-R.C.	21	3585	5000	PRODUCED BRINE EXTRANEOUS GAS	GAS STORAGE	859,210	171 GAS 11 WTR	40,000,000 Est.	158,154,093	P S	0 82,331	GAS STORAGE	859,210	171	P S	39,293,000 3,517,179	16,257,876	178,230,105
RICH UNIT LAPEER CO.	(5)URGWF	1962 1980	RICH.	12	3028	2820	RECYCLE GAS BRINE FRESH WATER (1564)	122,708	1,060,020	1 GAS 20 WTR	617,843	1,385,590	P S	231,435 0	*569,419	88,878	31	P S	799,447 0	1,424,804	172,281
RICH WEST UNIT LAPEER CO.	(5)UWF	1962 1981	RICH.	8	2900	400	FRESH WATER & BRINE (1200)	NONE	55,964	3	NONE	71,483	P S	4,227 0	3,313	12,592	2	P S	10,959 0	31,142	18,067
ROSE CITY OSCEOLA CO.	(9)UWF	1945 1964	RICH.	9	4125	4600	FRESH WATER (2250)	NONE	323,508	26	NONE	8,007,986	P S	0 148,692	47,951	27,923	44	P S	3,558,000 2,257,557	47,951	521,172
ROSE CITY CENTRAL OSCEOLA CO.	(9)UWF	1951 1971	RICH.	8	4125	1560	FRESH WATER (2045)	NONE	292,062	8	NONE	3,751,517	P S	0 19,281	6,218	20,623	11	P S	1,000,000 228,692	6,218	130,854
ROSE CITY WEST OSCEOLA CO.	(5)UWF	1952 1968	RICH.	10	4150	320	FRESH WATER & BRINE (VACUUM)	NONE	69,975	5	NONE	2,646,785	P S	0 10,793	3,481	13,870	3	P S	570,000 291,422	3,481	34,731
ST. HELEN ROSCOMMON CO.	(5)URGWF	1941 1958	RICH.	9	4480	4480	FRESH WATER (VACUUM)	NONE	569,210	45	3,151,610	15,815,028	P S	0 328,016	*490,190	461,506	81	P S	3,760,000 3,564,066	13,141,324	2,355,155
SPRINGDALE 26 MANISTEE CO.	(15)URG	1974 1982	NIAG.	150	5094	360	RECYCLE GAS (1700)	530,126	NONE	1	530,126	NONE	P S	126,956 0	101,970	NONE	4	P S	126,956 0	101,970	NONE
WEST BRANCH OSCEOLA CO.	(6)UWF	1933 1966	DD.	28	2650	2730	FRESH WATER & BRINE (1560)	NONE	1,599,431	87	NONE	12,706,757	P S	32,616 225,000	NONE	1,336,867	92	P S	3,669,737 1,775,109	NONE	8,312,870
WEST BRANCH 28 UNIT OSCEOLA CO.	(9)UWF	1934 1981	DD.	20	2696	120	FRESH WATER (390)	NONE	105,806	4	NONE	130,499	P S	6,701 0	NONE	8,213	8	P S	9,460 0	NONE	12,812

NUMBER OF ACTIVE PROJECTS 45

AMOUNT OF GAS INJECTED IN 1982 . . . . . 3,252,231 MCF
AMOUNT OF WATER INJECTED IN 1982 . . . . 38,269,276 BBL
NUMBER OF GAS INJECTION WELLS 181
NUMBER OF WATER INJECTION WELLS 455

TOTAL PRIMARY OIL PRODUCTION IN 1982 . . . 2,889,414 BBL
TOTAL SECONDARY OIL PRODUCTION IN 1982 . . 4,583,556 BBL

TOTAL UNIT ACRES AND OTHER DATA DOES NOT NECESSARILY CORRESPOND WITH DRILLED ACRES AS NOTED IN TABLE 23

FIGURES DEFINED AS (P) AND (S) RESPECTIVELY REPRESENT OIL PRODUCED AS A RESULT OF PRIMARY AND SECONDARY RECOVERY TECHNIQUES

OPERATOR

(1) MOBIL OIL CORPORATION
(2) UNION OIL CORPORATION
(3) H. E. TOPE, INC.
(4) LEASE MANAGEMENT, INC.
(5) SUN OIL COMPANY
(6) MARATHON OIL COMPANY
(7) FARMERS PETROLEUM COOPERATIVE, INC.
(8) MICHIGAN CONSOLIDATED GAS COMPANY
(9) MUSKEGON DEVELOPMENT COMPANY
(10) NORTHERN MICHIGAN EXPLORATION COMPANY
(11) SHELL OIL COMPANY
(12) LOEB OIL COMPANY
(13) AMOCO PRODUCTION COMPANY
(14) GRACE PETROLEUM CORPORATION
(15) MILLER BROTHERS
(16) TOTAL PETROLEUM

* ALL GAS SALES FROM FIELD CREDITED TO WATERFLOOD PROJECT
**A MAY INCLUDE GAS PURCHASED OUTSIDE RESERVOIR
URG UNIT RECYCLED GAS
UWF UNIT WATER FLOOD
URGWF UNIT RECYCLED GAS & WATER FLOOD
GSOR UNIT GAS STORAGE IN OIL RESERVOIR

THIS TABLE COMPILED BY GUNTHER SCHMIDT

TABLE 25 GAS PLANT OPERATIONS BY PLANT OR FIELD, 1982 (All figures in Mcf)

Plant or Field	Input Totals	Plant Fuel	Lease Fuel	Recycled	Line Loss	Vented	Extraction Loss	Sales to Pipe Line	L.P.G. Recovery Gallons
Albion-Scipio	5,229,689	659,037	0	0	416,209	145	646,640	3,503,360	19,389,970
Aurelius	4,828,550	319,168	0	0	42,325	11,187	380,656	4,078,177	12,016,278
Beaver Creek	2,190,684	22,296	175,848	0	0	0	28,368	42,600	871,872
Chester	0	0	0	0	0	0	0	0	0
Columbus, Sec. 3	1,060,816	72,600	34,909	775,540	137,256	0	47,383	0	1,459,711
Convis	116,735	15,926	0	0	16,198	2,342	5,839	78,577	137,955
Frederic 15	162,343	9,425	500	0	0	6,040	0	146,506	0
Hamilton*	104,614	11,973	55,559	0	0	0	0	40,079	0
Kalkaska (Amoco)	40,125,847	626,873	0	0	483,627	0	2,901,423	36,985,506	96,680,333 (1)
Kalkaska (Shell)	76,207,029	2,812,147	0	0	659,687	0	11,581,490	62,352,328	327,773,670 (1)
Leonard	1,361,895	174,681	0	0	0	66,777	49,353	970,547	1,574,639
Manistee (Aztec)	173,413	299	0	0	121,157	0	4,211	70,256	291,896
Marathon (Otter L.)	794,997	60,649	0	0	0	14,510-H2S	50,672	761,766	1,503,050
Otsego 27	270,439	8,070	26,920	0	0	0	8,094	227,391	321,235
Reed City	9,951,253	148,257	0	9,720,838	0	0	82,158	0	2,832,727
Romeo	4,436,445	2,942	0	0	0	0	109,701	4,415,784	3,562,814
White Oak	503,215	2,946	0	0	0	0	28,999	471,270	810,077
Winterfield	827,173	44,580	0	0	0	0	62,508	720,083	2,650,107
TOTALS:	148,345,137	4,947,309	293,731	10,496,378	1,876,459	101,001	15,987,490	114,864,230	471,871,334

*Receives and processes oil well gas only.

(1)These LPG figures include stabilized condensate.

NOTE: The above table is the record of plants which are serving oil field operations, or which are extracting natural gas liquids from designated dry gas fields.

All data from Production and Proration Unit records.

TABLE 26 MICHIGAN OIL REFINERIES

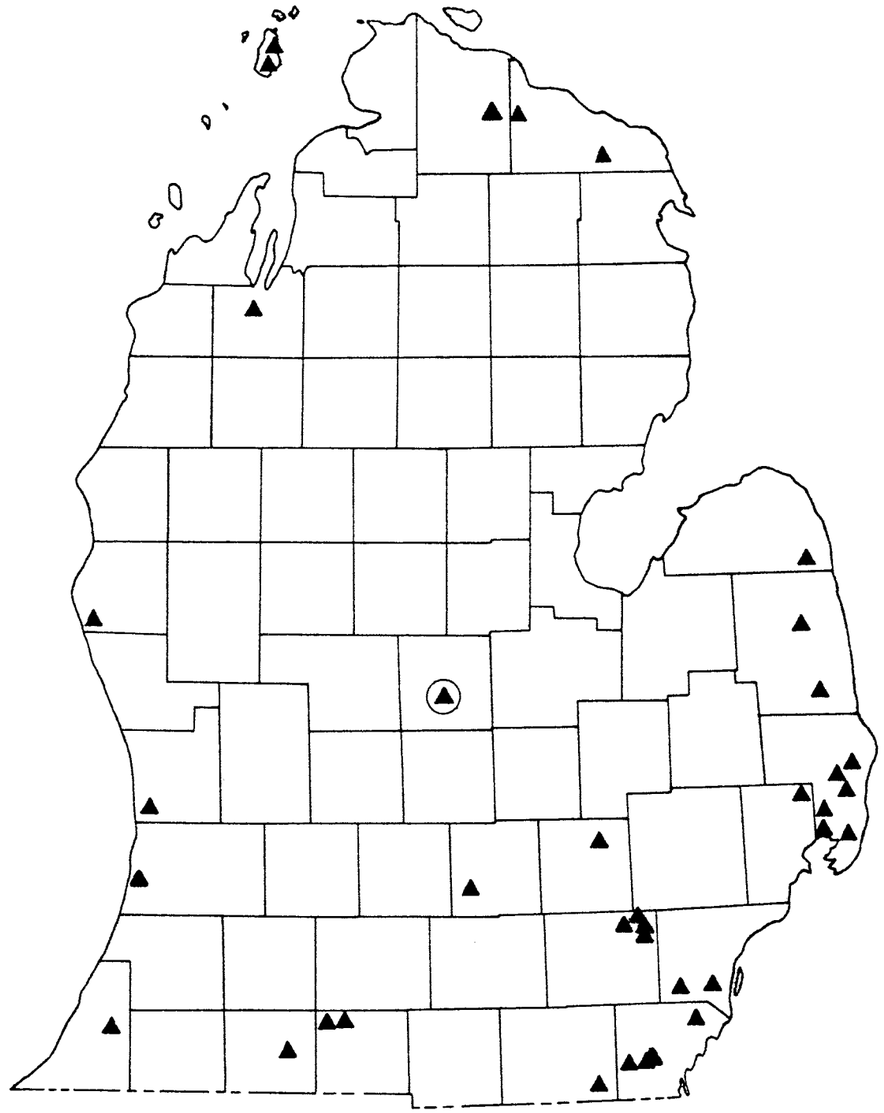
COMPANY	REFINERY LOCATION	NOMINAL CAPACITY BBLS/DAY
Bay Refining, Dow Chemical Co.	Bay City	17,000
Crystal Refining Co.	Carson City	6,200
Lakeside Refining Co.	Kalamazoo	5,600
Total Petroleum, Inc.	Alma	42,500
Marathon Oil Co.	Detroit	68,500
Osceola Refining Co.	West Branch	12,500
	TOTAL CAPACITY	152,300

TOTAL AVERAGE DAILY AMOUNT OF CRUDE REFINED (Bbls.)

Michigan produced crude	56,548
Out-of-State Produced crude	36,536
	93,084

TABLE 27 TESTS REPORTED TO HAVE PENETRATED PRECAMBRIAN ROCK IN THE SOUTHERN PENINSULA OF MICHIGAN

PERMIT NUMBER	COUNTY NAME TOWNSHIP NAME	SECTION NO.- TWP. - RANGE	OPERATOR NAME LEASE NAME	PRECAMBRIAN DEPTH	TOTAL DEPTH	YEAR COMPLETED	
35186	Allegan Co. Ganges Twp.	9-2N-16W	Martin Prop., Inc. Howard Hunt Unit #1	5582 (-4894)	6000 (-5312)	1982	
26112	Berrien Co. Berrien Twp.	10-6S-17W	Security Oil & Gas Thalmann #1	4604 (-3800)	5647 (-4843)	1965	
29779	Branch Co. Sherwood Twp.	7-5S-8W	Consumers Power Co. et al Lindsey-Hostetler #1	5375 (-4485)	5439 (-4549)	1974	
29969	Branch Co. Sherwood Twp.	8-5S-8W	Consumers Power Co. et al H. Clark #1	5418 (-4539)	5475 (-4586)	1974	
23478	Charlevoix Co. Peaine Twp.	6-37N-10W	McClure Oil Co. State-Beaver Island #2	4718 (-3977)	4803 (-4062)	1961	Age Rb-Sr K-Ar Biotite 1100 1090 Feldspar 1110
23435	Charlevoix Co. Peaine Twp.	27-38N-10W	McClure Oil Co. State-Beaver Island #1	4566 (-3888)	5383 (-4705)	1961	
30682	Cheboygan Co. Waverly Twp.	24-35N-1W	North. Mich. Explor. Co. et al State-Waverly #1-24	5617 (-4816)	5753 (-4952)	1975	
34292	Grand Traverse Blair Twp.	24-26N-11W	Shell Oil Co. State Blair #2-24	10,910 (-9,995)	11,020 (-10,105)	1981	
29739	Gratiot Co. North Star Twp.	8-10N-2W	McClure Oil Co. Sparks et al #1-8	12,176 (-11,414)	17,466 (-16,704)	1975	
29191	Huron Co. Sherman Twp.	26-15N-15E	Mobil Oil Corp. C. J. Volmering #1	8872 (-8161)	9086 (-8375)	1973	
28607	Ingham Co. Vevay Twp.	29-2N-1W	Mobil Oil Corp. Walter Kranz, Jr. #1	7690 (-6751)	7866 (-6927)	1971	
10448	Lenawee Co. Riga Twp.	32-8S-5E	Walter H. Eckert Harry Taylor #1	3865 (-3150)	3902 (-3186)	1944	
27986	Livingston Co. Osceola Twp.	11-3N-5E	Mobil Oil Corp. H. J. Messmore #1	7150?(-6170)	7589 (-6609)	1970	
33737	Macomb Co. Richmond Twp.	24-5N-14E	Energy Acquisition Corp. Grierson #1-24	5340 (-4601)	5389 (-4650)	1980	
11221	Monroe Co. Berlin Twp.	29-5S-10E	Joseph W. Sturman D. L. & R. L. Chapman #1	3342 (-2745)	3377 (-2780)	1945	
35948	Monroe Co. Ida Twp.	01-7S-7E	Reef Petroleum Corp. Cousino #1-1	3470 (-2824)	3512 (-2866)	1982	
07702	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	
33134	Oceana Co. Claybanks Twp.	10-13N-18W	Amoco Production Co. Schiller #1-10	6130 (-5378)	7240 (-6488)	1980	
None	Ottawa Co. Holland Twp.	30-5N-15W	H. J. Heinz Co. H. J. Heinz Co. #2	6142 (-5523)	6221 (-5602)	1972	
29372	Presque Isle Co. Metz Twp.	13-33N-5E	Shell Oil Co. Taratuta #1-13	6738?(-5962)	6738 (-5962)	1973	Granite wash 6545? (-5769)
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	
30376	St. Clair Co. Ira Twp.	14-3N-15E	Mich. Cons. Gas Co. Osterland #1-14	4449 (-3846)	4550 (-3947)	1975	
00196	St. Clair Co. St. Clair Twp.	26-5N-16E	St. Clair Oil & Gas Corp. Hurst #1	4730 (-4080)	4770 (-4110)	1929	Age Rb-Sr Biotite 1020
BD151	St. Clair Co. St. Clair Twp.	7-5N-17E	Consumers Power Co. C.P.C. #1-7 BDW	4707 (-4069)	4733 (-4095)	1971	
BD152	St. Clair Co. St. Clair Twp.	7-5N-17E	Consumers Power Co. C.P.C. #2-7 BDW	4684 (-4052)	4702 (-4070)	1971	
31335	St. Joseph Co. Nottawa Twp.	11-6S-10W	Marathon Oil Co. Lloyd Cupp #1-11	5074 (-4182)	5283 (-4391)	1977	
30974	Sanilac Co. Bridgehampton Twp.	20-12N-15E	McClure Oil & Mich. Nat. Res. Hewett-Shadd Unit #1-20	8676 (-7891)	8975 (-8190)	1976	
33999	Sanilac Co. Buel Twp.	19-10N-15E	Mid-American Oil & Gas Woodruff #1-19	8298 (-7533)	8511 (-7746)	1980	
34223	Washtenaw Co. Northfield Twp.	28-1S-6E	Hunt Energy Corp. Worrell #1-28	6294 (-5352)	6330 (-5388)	1981	
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.	16-1S-7E	Colvin & Assoc. & Elec. Wm. F. Voss Comm. #1	6374 (-5459)	6410 (-5495)	1944	Age Rb-Sr Biotite 950
11341	Washtenaw Co. Superior Twp.	12-2S-7E	Colvin & Assoc. & Rot. St. Viola Meinzinger #1	5670 (-4852)	5692 (-4874)	1945	Age Rb-Sr Biotite 1050
BD146	Wayne Co., City of Woodhaven	22-4S-10E	Marathon Oil Co. Woodhaven BD#1	3704 (-3095)	3752 (-3143)	1969	
10430	Wayne Co. Huron	16-4S-9E	Colvin & Assoc. & Elec. Theisen Estate #1	3985 (-3360)	4046 (-3321)	1944	



▲ Reported Precambrian Test

▲ Deepest Exploratory Well In Michigan (Precambrian)

ILLUSTRATION 3 PRECAMBRIAN WELL LOCATION MAP

TABLE 28 CUMULATIVE OIL AND GAS PRODUCTION BY COUNTY THROUGH 1982

COUNTY	CUMULATIVE PRODUCTION Barrels Oil	MCF Gas
Allegan	20,255,350	30,479,565
Antrim	1,611,081	7,484,754
Arenac	48,131,307	6,856,583
Barry	777,342	0
Bay	21,880,770	7,814
Benzie	638,316	639,521
Berrien	30,395	0
Calhoun	7,631,704	23,255,367
Cass	296,956	0
Cheboygan	9,711	0
Clare	35,193,300	63,068,084
Clinton	4,121	0
Crawford	21,547,079	37,462,072
Eaton	3,371,702	35,817,074
Gd. Traverse	32,045,008	311,873,489
Genesee	400,081	58,483
Gladwin	37,244,703	9,781
Gratiot	1,205,048	14,184,607
Hillsdale	121,112,255	204,768,101
Huron	65,493	0
Ingham	17,669,149	34,259,653
Ionia	48,479	0
Isabella	42,365,654	34,720,413
Jackson	1,353,521	597,737
Kalamazoo	33,268	0
Kalkaska	33,357,188	268,797,589
Kent	18,439,377	5,007,224
Lake	1,769,097	0
Lapeer	2,211,997	1,883,658
Lenawee	7,845	159,103
Livingston	18,459	32,039,057
Macomb	143,993	74,882,270
Manistee	51,100,963	219,808,060
Mason	6,437,929	22,909,805
Mecosta	10,556,419	17,366,531
Midland	80,765,768	12,931,387
Missaukee	24,676,856	24,037,832
Monroe	758,463	0
Montcalm	19,420,507	68,657,957
Montmorency	10,319	0
Muskegon	8,068,649	9,809,572
Newaygo	8,932,207	13,356,058
Oakland	515,972	12,827,518
Oceana	15,868,080	1,170,545
Ogemaw	23,173,737	11,003,763
Osceola	59,153,074	40,850,778
Oscoda	68,146	0
Otsego	58,836,806	120,513,003
Ottawa	1,821,572	5,559,385
Presque Isle	47,159	0
Roscommon	18,527,768	17,389,884
Saginaw	3,125,873	0
Shiawassee	200,706	0
St. Clair	17,797,225	178,525,630
Tuscola	2,845,031	103,517
Van Buren	12,179,139	0
Washtenaw	10,350	18,669,716
Wayne	1,135,465	14,378,304
Wexford	4,291,966	24,277,068
59 Counties	** 869,621,436	* 1,859,681,827

**Includes 9,634 barrels of oil from miscellaneous fields.

*Does not include 2,938,258 MCF of unassigned gas shown on early records.

TABLE 29 CUMULATIVE WELL COMPLETIONS BY COUNTY THROUGH 1982

County	Area of County (including inland water) Square Miles	Acres	Classification of Completed Wells (New Hole) (does not include reworked wells) Oil Wells	Gas Wells	Service Wells GS - OBS - BDW - LPG	Dry Holes	Total Completions	Approximate Well Density (All Classes) Wells:Sq. Miles
Alcona	694	444,160				24	34	1:20
Allegan	837	535,680	1,332	89	174	1,732	3,327	4:1
Alpena	590	377,600		1		15	16	1:37
Antrim	520	332,800	6	2	1	63	72	1:7
Arenac	369	236,160	417	44	1	419	881	2:1
Barry	571	365,440	74		4	144	222	1:3
Bay	451	288,640	506	1	1	250	758	2:1
Benzie	342	218,880	4			23	27	1:13
Berrien	584	373,760	13			77	90	1:6
Branch	517	330,880				68	68	1:8
Calhoun	716	458,240	339	83	5	570	997	1:1
Cass	505	323,200	85	2	1	173	261	1:2
Charlevoix	451	288,640				16	16	1:28
Cheboygan	798	510,720	9			57	66	1:12
Chippewa	1,651	1,056,640	Northern Peninsula County			10	10	1:165
Clare	577	369,280	431	176	501	388	1,496	3:1
Clinton	573	366,720	4			85	89	1:6
Crawford	566	362,240	133	11		67	224	1:3
Delta	1,202	769,280	Northern Peninsula County			1	1	1:1200
Eaton	572	366,080	46	20		136	202	1:3
Emmet	477	305,280				5	5	1:95
Gd. Traverse	490	313,600	152	128	4	595	879	2:1
Genesee	649	415,360	32	2		48	82	1:8
Gladwin	512	327,680	800			290	1,091	2:1
Gratiot	566	362,240	46	74	29	283	432	1:1
Hillsdale	604	386,560	320	2		522	844	1:1
Huron	824	527,360	6			82	88	1:9
Ingham	560	358,400	91	17	14	171	293	1:2
Ionia	578	369,920	9			85	94	1:6
Iosco	563	360,320				27	27	1:21
Isabella	573	366,720	713	164	60	520	1,457	3:1
Jackson	717	458,880	141	4		303	448	1:2
Kalamazoo	580	371,200	19			120	139	1:4
Kalkaska	573	366,720	176	88	31	335	630	1:1
Kent	868	555,520	461	6	2 11	350	830	1:1
Lake	577	369,280	51	1	8	159	219	1:3
Lapeer	662	423,680	91	7	5	71	174	1:4
Leelanau	374	239,360				9	9	1:42
Lenawee	760	486,400	5	72		119	196	1:4
Livingston	583	373,120	5	35	55	124	219	1:3
Luce	929	594,560	Northern Peninsula County			2	2	1:465
Mackinac	1,081	691,840	Northern Peninsula County			3	3	1:360
Macomb	481	307,840	9	79	36	400	524	1:1
Manistee	568	363,520	235	78	15	450	778	1:1
Mason	505	323,200	142	18	1	336	497	1:1
Mecosta	570	364,800	131	204	236	431	1,002	2:1
Midland	523	334,720	914	2	1 2	286	1,205	2:1
Missaukee	572	366,080	300	67	105	247	739	1:1
Monroe	564	360,960	46			115	161	1:4
Montcalm	720	460,800	400		282	620	1,513	2:1
Montmorency	567	362,880	4	2		78	84	1:7
Muskegon	519	332,160	448	120		392	960	2:1
Newaygo	867	554,880	218	48	161	401	828	1:1
Oakland	899	575,360	14	22	5	112	153	1:6
Oceana	541	346,240	343	12	1	577	933	2:1
Ogemaw	580	371,200	573	21	53	184	831	1:1
Osceola	585	374,400	347	122	202	394	1,065	2:1
Oscoda	568	363,520	5	1		17	23	1:24
Otsego	538	344,320	157	81	29	395	662	1:1
Ottawa	572	366,080	476	19	2	505	1,002	2:1
Presque Isle	678	433,920	15	8		202	225	1:3
Roscommon	573	366,720	252	14	2	110	378	1:2
Saginaw	814	520,960	390	2		186	578	1:1
Sanilac	961	615,040				58	58	1:17
Schoolcraft	1,229	786,560	Northern Peninsula County			2	2	1:615
Shiawassee	540	345,600	9			58	66	1:8
St. Clair	751	480,640	266	194	114 16	922	1,512	2:1
St. Joseph	518	331,520				24	24	1:22
Tuscola	820	524,800	184	5		130	319	1:3
Van Buren	615	393,600	749		1	1,024	1,774	3:1
Washtenaw	723	462,720	10	18	5 1	120	154	1:5
Wayne	625	400,000	12	24	20 30	54	140	1:4
Wexford	570	364,800	14	19		105	138	1:4
73 Counties	47,342	Totals:	13,178	2,209	2,167 60	17,476	35,346	

TABLE 30 OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1982 AND PRIOR YEARS

These data include estimates for multiple pay wells and leases when an accurate breakdown was not available

YEAR	MISSISSIPPIAN		DEVONIAN			SILURIAN	ORDOVICIAN		Total Barrels Oil All Formations
	Stray-Marshall	Berea	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	Prairie du Chien	
	First Year of Recorded Oil Production by Formation								
	1938	1925	1927	1927	1939	1952	1935	1960	
1925 Through 1929 (Cumulative-5 year interval)	0	876,559	873,777	4,017,451	0	0	0	0	5,767,787
1930 Through 1934 (Cumulative-5 year interval)	0	381,171	995,439	31,870,671	0	0	0	0	33,184,281
1935 Through 1939 (Cumulative-5 year interval)	7,411	310,313	13,814,816	72,339,293	14,000	0	43,565	0	86,529,398
1940 Through 1944 (Cumulative-5 year interval)	22,040	229,262	27,856,377	67,939,211	727,418	0	348,477	0	97,122,785
1945 Through 1949 (Cumulative-5 year interval)	17,283	166,687	16,914,771	62,438,443	4,302,309	0	106,510	0	83,946,003
1950 Through 1954 (Cumulative-5 year interval)	9,068	125,089	16,974,863	38,058,703	11,878,669	43,091	225,180	0	67,314,663
1955 Through 1959 (Cumulative-5 year interval)	8,183	110,639	8,788,785	25,618,934	13,716,790	568,085	3,108,341	0	51,920,757
1960 Through 1964 (Cumulative-5 year interval)	6,090	84,222	6,777,853	15,725,957	8,260,636	4,611,123	48,022,216	7,614	83,488,097
1965 Through 1969 (Cumulative-5 year interval)	5,293	113,898	3,831,321	12,186,197	8,387,775	4,195,694	39,132,615	228	67,852,793
1970 Through 1974 (Cumulative-5 year interval)	4,553	97,444	2,669,026	9,115,667	10,992,939	25,986,136	20,288,822	0	69,174,372
1975 Through 1979 (Cumulative-5 year interval)	4,536	108,273	2,191,034	7,203,284	12,074,546	126,012,182	9,649,045	0	157,215,550
1980	925	55,596	457,813	1,506,950	2,827,265	27,697,663	1,262,251	0	33,808,463
1981	1,068	110,178	460,657	1,273,415	2,942,586	26,596,115	1,128,100	0	32,512,119
1982	1,418	176,608	480,438	1,495,947	3,088,530	25,022,687	1,044,424	139	31,310,191

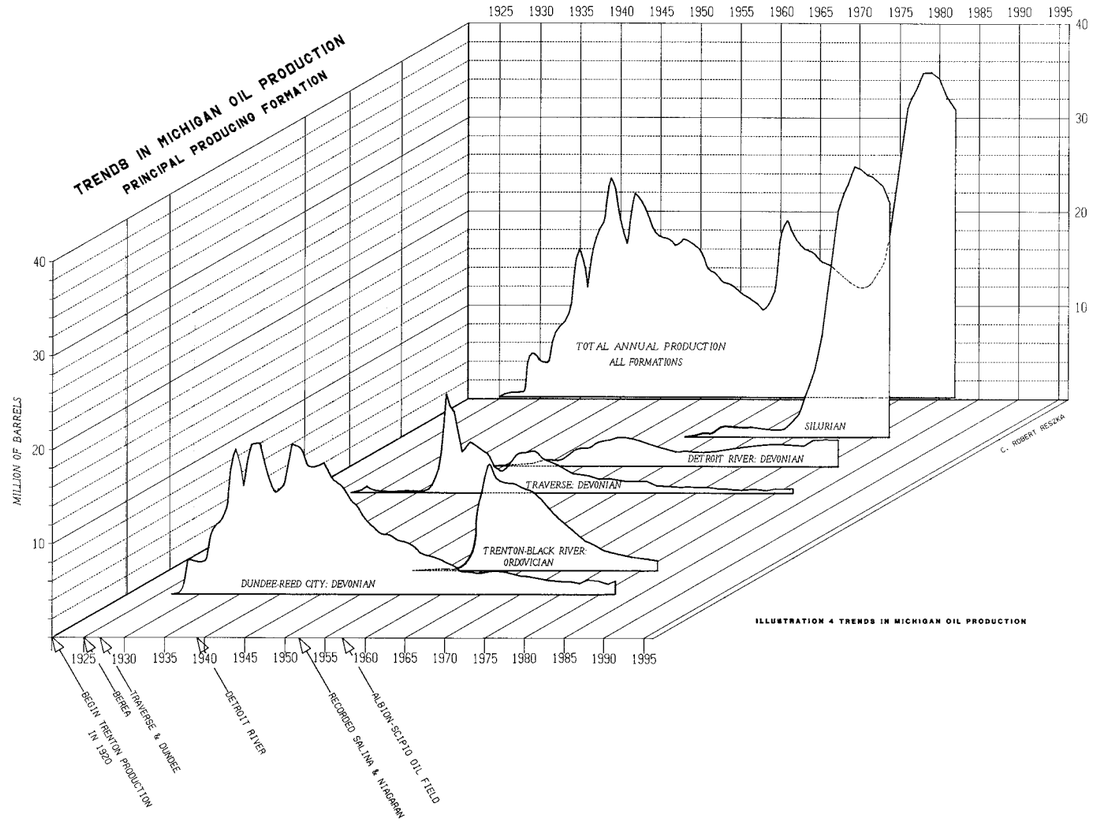


ILLUSTRATION 4 TRENDS IN MICHIGAN OIL PRODUCTION

TABLE 31 GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1982 AND PRIOR YEARS

YEAR	CENOZOIC	MISSISSIPPIAN		DEVONIAN				SILURIAN	ORDOVICIAN		Total MCF Gas All Formations
	Glacial Drift	Stray-Marshall	Berea	Antrim Shale	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	Praire du Chien	
	First Year of Recorded Gas Production by Formation										
	1949	1931	1936	1947	1934	1929	1946	1929	1954	1982	
1925 Through 1929 (Cumulative-5 year interval)	0	0	0	0	0	1,887,732	0	74,867	0	0	1,962,599
1930 Through 1934 (Cumulative-5 year interval)	0	3,001,963	0	0	3,744	6,034,206	0	61,578	0	0	9,101,491
1935 Through 1939 (Cumulative-5 year interval)	0	30,769,471	1,391,076	0	69,894	8,862,165	0	6,331	0	0	41,098,937
1940 Through 1944 (Cumulative-5 year interval)	0	70,498,989	5,860,831	0	3,716,132	7,647,510	0	79,983	0	0	87,803,445
1945 Through 1949 (Cumulative-5 year interval)	8,020	80,217,680	1,467,460	52,495	1,414,004	15,710,636	793,763	7,393,744	0	0	107,057,802
1950 Through 1954 (Cumulative-5 year interval)	0	18,033,449	916,202	55,626	1,913,497	5,361,578	6,997,257	11,316,082	10,725	0	44,604,416
1955 Through 1959 (Cumulative-5 year interval)	0	6,834,419	148,085	56,686	266,623	2,287,066	12,539,252	20,117,524	6,609,393	0	48,859,048
1960 Through 1964 (Cumulative-5 year interval)	0	2,874,824	42,020	156,485	876,356	1,117,064	19,252,334	66,799,392	45,443,994	0	136,562,469
1965 Through 1969 (Cumulative-5 year interval)	0	2,636,857	814,223	220,305	454,198	150,659	10,649,603	106,149,601	57,253,914	0	178,329,360
1970 Through 1974 (Cumulative-5 year interval)	0	157,966	391,050	760,309	265,850	219,781	8,342,041	148,999,929	53,573,311	0	212,710,237
1975 Through 1979 (Cumulative-5 year interval)	0	357,934	220,994	680,817	77,255	236,494	6,625,152	617,530,506	40,691,633	0	663,983,600
1980	0	21,313	28,849	375,883	620,738	15,118	1,885,846	149,445,361	5,944,814	0	158,337,922
1981	0	8,228	34,802	355,809	644,611	1,675	2,051,953	140,823,661	5,678,680	0	149,599,419
1982	0	10,028	0	313,722	501,058	0	3,733,987	130,979,556	5,413,183	1,180,492	142,132,026

CHANGES IN GAS VOLUMETRIC MEASUREMENT

IN AN ATTEMPT TO OBTAIN NATIONAL UNIFORMITY OF DATA, ALL ANNUAL AND CUMULATIVE GAS PRODUCTION FIGURES FOR MICHIGAN WERE CONVERTED TO A STANDARD BASE PRESSURE FOR VOLUMETRIC MEASUREMENT OF 14.73 POUNDS PER SQUARE INCH IN 1978. THIS CONVERSION AND SUBSEQUENT ADJUSTMENT OF GAS PRODUCTION FIGURES RESULTED IN SLIGHT CHANGES IN CUMULATIVE PRODUCTION VOLUMES IN THOSE FIELDS WHICH HAD BEEN MEASURED AT VARYING PRESSURE BASES IN PRIOR YEARS.

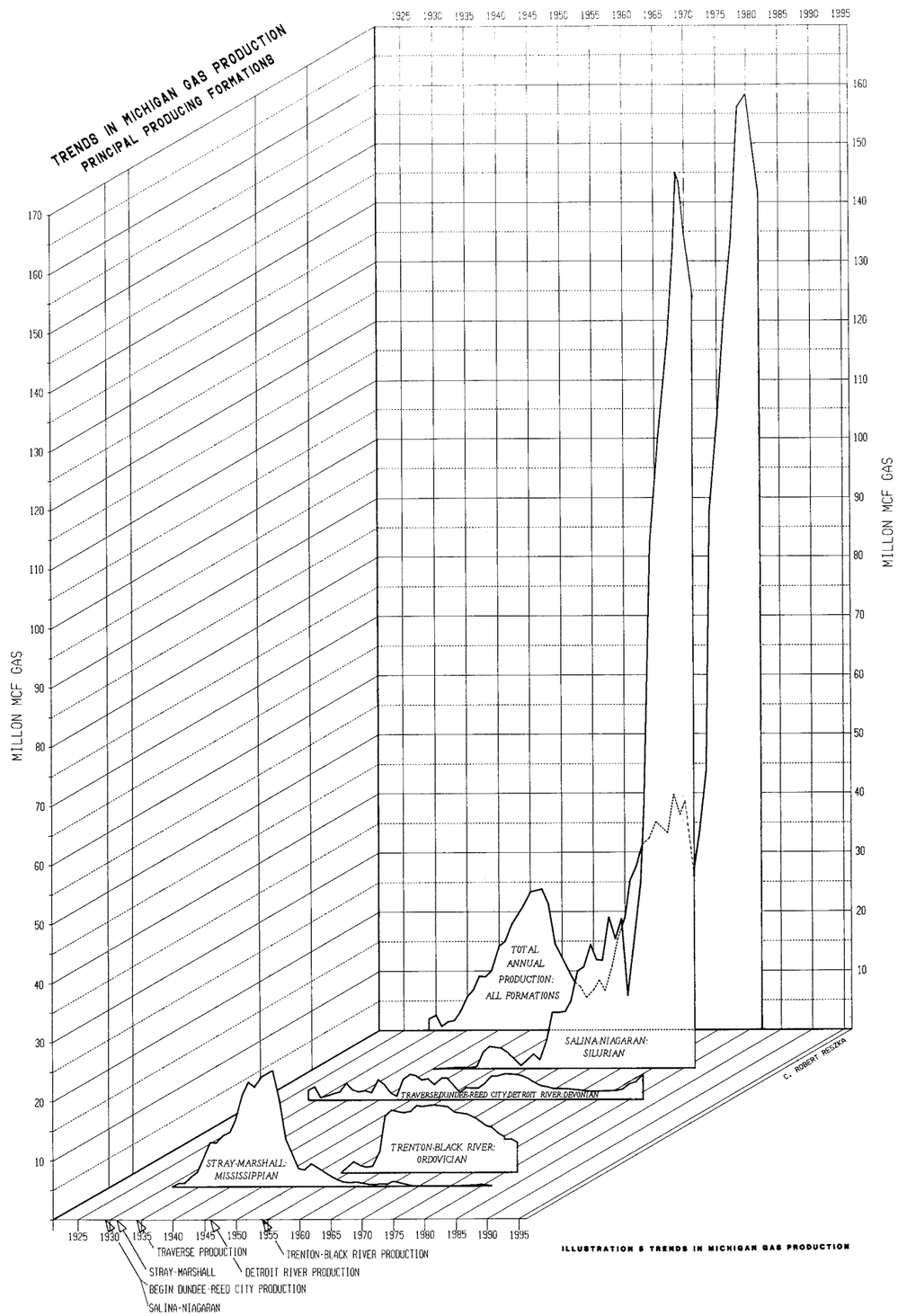


ILLUSTRATION 6 TRENDS IN MICHIGAN GAS PRODUCTION

TABLE 32 CUMULATIVE OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1982 AND PRIOR YEARS

These data include estimates for multiple pay wells and leases when an accurate breakdown was not available

YEAR	MISSISSIPPIAN		DEVONIAN			SILURIAN	ORDOVICIAN		Total Barrels Oil All Formations
	Stray-Marshall	Berea	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	Prairie du Chien	
	First Year of Recorded Oil Production by Formation								
	1938	1925	1927	1927	1939	1952	1935	1960	
1925 Through 1929 (Cumulative-5 year interval)	0	876,559	873,777	4,017,451	0	0	0	0	5,767,787
1930 Through 1934 (Cumulative-5 year interval)	0	1,194,730	1,869,216	35,888,122	0	0	0	0	38,952,068
1935 Through 1939 (Cumulative-5 year interval)	7,411	1,505,043	15,684,032	108,227,415	14,000	0	43,565	0	125,481,466
1940 Through 1944 (Cumulative-5 year interval)	29,451	1,734,305	43,540,409	176,166,626	741,418	0	392,042	0	222,604,251
1945 Through 1949 (Cumulative-5 year interval)	46,734	1,900,992	60,455,180	238,605,069	5,043,727	0	498,552	0	306,550,254
1950 Through 1954 (Cumulative-5 year interval)	55,802	2,026,081	77,430,043	276,663,772	16,922,396	43,091	723,732	0	373,864,917
1955 Through 1959 (Cumulative-5 year interval)	63,985	2,136,720	86,218,828	302,282,706	30,639,186	611,176	3,832,073	0	425,784,674
1960 Through 1964 (Cumulative-5 year interval)	70,075	2,220,942	92,996,681	318,008,663	38,900,822	5,222,299	51,843,880	18,203	509,273,771
1965 Through 1969 (Cumulative-5 year interval)	75,368	2,334,840	96,848,002	330,194,860	47,288,597	9,417,993	90,975,949	18,797	577,126,564
1970 Through 1974 (Cumulative-5 year interval)	79,668	2,077,719	83,788,468	311,232,618	102,632,670	35,417,637	111,297,000	18,797	646,555,321
1975 Through 1979 (Cumulative-5 year interval)	84,204	2,529,548	106,665,092	341,229,283	70,867,445	161,459,651	120,946,266	18,797	803,792,444
1980	85,129	2,585,144	107,122,905	342,736,233	73,694,710	189,157,314	122,208,517	18,797	837,600,907
1981	86,197	2,695,322	107,583,562	344,009,648	76,637,296	215,753,429	123,336,617	18,797	870,113,026
1982	87,615	2,871,646	108,062,465	345,505,595	79,725,826	240,776,116	124,381,041	19,101	901,429,405

Some formations show a loss in cumulative production from 1973 to 1975. This is due to recently initiated changes in the method of crediting production to each respective formation in multiple-pool fields.

TABLE 33 CUMULATIVE GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1982 AND PRIOR YEARS

YEAR	CENOZOIC	MISSISSIPPIAN		DEVONIAN				SILURIAN	ORDOVICIAN		Total MCF Gas All Formations
	Glacial Drift	Stray-Marshall	Berea	Antrim Shale	Traverse	Dundee-Reed City	Detroit River	Salina-Niagaran	Trenton-Black River	Praire du Chien	
	First Year of Recorded Gas Production by Formation										
	1949	1931	1936	1947	1934	1929	1946	1929	1954	1982	
1925 Through 1929 (Cumulative-5 year interval)	0	0	0	0	0	1,887,732	0	74,867	0	0	1,962,599
1930 Through 1934 (Cumulative-5 year interval)	0	3,001,963	0	0	3,744	7,921,938	0	136,445	0	0	11,064,090
1935 Through 1939 (Cumulative-5 year interval)	0	33,771,434	1,391,076	0	73,638	16,784,103	0	142,776	0	0	52,163,027
1940 Through 1944 (Cumulative-5 year interval)	0	104,270,423	7,251,907	0	3,789,770	24,431,613	0	222,759	0	0	139,966,472
1945 Through 1949 (Cumulative-5 year interval)	8,020	184,488,103	8,719,367	52,495	5,203,774	40,142,249	793,763	7,616,503	0	0	247,024,274
1950 Through 1954 (Cumulative-5 year interval)	8,020	202,521,522	9,635,569	108,121	7,117,271	45,503,827	7,791,020	18,932,585	10,725	0	291,628,690
1955 Through 1959 (Cumulative-5 year interval)	8,020	209,355,971	9,783,654	164,807	7,383,894	47,790,893	20,330,272	39,050,109	6,620,118	0	340,487,738
1960 Through 1964 (Cumulative-5 year interval)	8,020	212,230,795	9,825,674	321,292	8,260,250	48,907,957	39,582,606	105,849,501	52,064,112	0	477,050,207
1965 Through 1969 (Cumulative-5 year interval)	8,020	214,867,652	10,639,897	541,597	8,714,448	49,058,616	50,232,209	211,999,102	109,318,026	0	655,379,567
1970 Through 1974 (Cumulative-5 year interval)	8,020	213,298,888	11,249,818	1,284,841	9,233,011	48,568,150	60,395,689	357,050,974	162,958,467	0	864,047,858
1975 Through 1979 (Cumulative-5 year interval)	8,180	213,656,822	10,990,672	1,965,658	9,048,289	41,517,206	75,000,346	974,584,054	207,444,618	0	1,534,877,591
1980	8,180	213,678,135	11,019,521	2,341,541	9,669,027	41,532,324	76,886,192	1,124,029,415	213,389,432	0	1,693,215,513
1981	8,180	213,686,363	11,054,323	2,697,350	10,313,638	41,533,999	78,938,145	1,264,853,076	219,068,112	0	1,842,153,026
1982	8,180	213,696,391	12,212,221	3,047,602	10,814,696	41,533,999	82,672,132	1,395,832,632	224,481,295	1,180,492	1,985,479,640

Does not include 3,050,143 Mcf of unassigned gas from early records.

Some formations show a loss in cumulative production from 1973 to 1975. This is due to recently initiated change in the method of crediting production to each respective formation in multiple-pool fields.

TABLE 34 PERMITS, DISCOVERIES, WELL COMPLETIONS, WELLS AT END OF YEAR, 1982 AND PRIOR YEARS

Year	Permits Issued	Classification of Well Completions Fields or Total Completions: Oil Wells	Gas Wells	Service Wells GS-OBS-SWD	Service Wells LPG	Dry Holes	Total Completions	Pools Discovered Oil	Pools Discovered Gas	Wells at End of Year: Oil Wells	Gas Wells	GS OBS	Inj.* P.M.	Inj.* LPG*
1925	0	3					3	1						
1926	0	89				16	105		1					
1927	16	218	3			46	267	1	1					
1928	283	79	30			49	158	1						
1929	576	324	22			137	483							
1930	257	154	19			158	331	2	3					
1931	111	59	17			52	128		1	634	64			
1932	184	109	10			64	183	1		645	72			
1933	429	223	10			85	318	3	1	831	70			
1934	444	272	47			150	469	3	2	977	117			
1935	700	319	101			221	641	1	5	1,167	212			
1936	777	333	206			268	807	6	5	1,360	402			
1937	973	622	66			267	985	6	1	1,778	442			
1938	996	580	27			411	1,018	17	2	2,141	448			
1939	1,465	845	56			578	1,479	8	2	2,684	485			
1940	1,121	557	59			565	1,181	8	13	2,928	510			
1941	1,044	441	97			413	951	7	8	3,158	577	13		
1942	570	297	74			331	682	14	4	3,324	631	13		
1943	627	233	47			355	635	12	8	3,386	639	13		
1944	741	246	64			400	710	10	2	3,433	651	13		
1945	755	271	57	6		467	801	11	11	3,536	663	19		
1946	822	223	53	86		461	823	19	10	3,520	547	226		
1947	886	318	43	148		387	896	10	4	3,532	534	409		
1948	918	371	32	77		437	917	10	5	3,554	502	482		
1949	999	439	22	73		473	1,007	21	2	3,818	471	554		
1950	901	336	28	47		473	884	18	4	3,954	471	610		
1951	744	227	20	43	1	466	757	16	6	3,911	417	673		1
1952	694	261	30	51	2	370	714	14	5	3,979	388	732		3
1953	824	258	18	110	1	360	747	11	6	4,089	313	901		4
1954	573	214	15	2	2	338	571	18		4,167	316	903		6
1955	484	204	13	1	1	291	510	12	2	4,223	321	904		7
1956	476	196	12	28		227	463	12	2	4,191	310	932		7
1957	461	176	40	35	3	207	461	12	5	4,233	335	977		10
1958	481	166	20	36	4	227	453	10	7	4,201	345	1,025		14
1959	727	257	47	72	4	272	652	8	7	4,327	323	1,094		18
1960	904	372	19	79	1	441	912	7	4	4,555	249	1,337	242	19
1961	849	207	57	74	3	476	817	13	10	4,619	292	1,420	260	22
1962	711	148	62	53	4	474	741	5	7	4,603	300	1,531	287	26
1963	704	135	72	56	2	384	650	7		4,598	367	1,601	287	28
1964	583	82	48	126		376	632	6	4	4,588	404	1,632	288	28
1965	494	53	34	107		291	485	6	7	4,368	424	1,859	341	28
1966	430	56	45	11	2	290	404	8	3	4,315	429	1,896	233	30
1967	405	69	38	26		287	420	8	2	4,273	481	1,921	333	30
1968	378	70	12	30	6	251	369	9	4	4,372	414	2,010	394	36
1969	379	73	9	26		239	347	7	3	4,349	410	2,034	---	36
1970	425	50	16	108	3	211	388	11	7	4,324	418	2,119	---	39
1971	425	83	31	83	13	186	396	28	13	4,323	418	2,299	---	52
1972	423	84	38	64	2	186	374	34	23	4,313	450	2,377	---	54
1973	445	81	47	67	0	173	369	38	37	4,334	491	2,462	---	54
1974	503	134	61	54	2	235	484	55	39	4,376	488	2,494	---	56
1975	653	167	40	38	0	330	575	55	19	---	---	---	---	56
1976	645	120	57	50	0	333	560	30	36	---	---	---	---	56
1977	692	136	70	49	1	341	597	35	36	---	---	---	---	57
1978	690	146	57	74	0	325	602	29	25	---	---	---	---	57
1979	649	173	58	68	0	290	589	42	28	---	---	---	---	---
1980	856	208	51	57	0	416	732	41	21	---	---	---	---	---
1981	1,048	252	43	34	0	450	779	51	18	---	---	---	---	---
1982	1,052	370	57	34	0	505	966	54	34	---	---	---	---	---

Incomplete records from 1925 through 1930

*LPG injection and extraction wells in LPG storage facilities.

TABLE 35 STATE OIL AND GAS REVENUE

Years	Royalty	Rental	Bonus	Application and Assignment Fees	Total Income
1927-1931	$ 85,262.60	$ 43,821.60	$ 27,707.50	$ 1,204.00	$ 157,995.70
1932-1936	209,125.99	205,349.64	87,211.25	4,506.00	506,192.88
1937-1941	1,302,355.65	724,330.32	515,705.83	7,367.00	2,549,758.80
1942-1946	1,645,462.42	2,021,512.76	601,065.34	3,759.00	4,271,799.52
1947-1951	1,813,632.16	2,256,913.51	1,307,470.34	4,398.00	5,382,414.01
1952-1956	2,727,410.47	1,989,342.96	257,186.50	3,028.00	4,976,967.93
1957-1961	1,879,927.18	769,593.64	475,840.80	3,702.00	3,129,063.62
1962-1966	1,259,162.06	1,476,949.69	409,809.00	4,982.00	3,150,902.75
1967-1971	2,160,038.71	3,258,021.87	2,168,524.59	6,009.00	7,592,594.17
1972-1976	31,650,974.98	5,998,725.51	18,339,236.24	9,979.00	55,998,915.73
1977	13,327,908.44	1,190,619.60	357,005.74	3,069.00	14,878,602.78
1978	18,244,756.02	1,131,238.25	14,483.00	1,733.00	19,392,210.27
1979	24,269,564.28	1,100,306.53	1,414,667.00	1,047.00	26,785,584.81
*1980	24,488,630.88	1,015,879.01	-2,982.64	1,679.00	25,503,206.25
*1981	44,912,755.96	1,216,258.42	32,277,235.00	1,860.00	78,408,109.38
*1982	45,802,471.95	908,025.09	10,304,780.00	17,715.00	57,032,992.04
Total	182,779,438.75	25,306,888.40	68,554,945.49	76,037.00	309,717,310.64

*Figures compiled on a State fiscal year basis; prior years compiled on a calendar year basis.

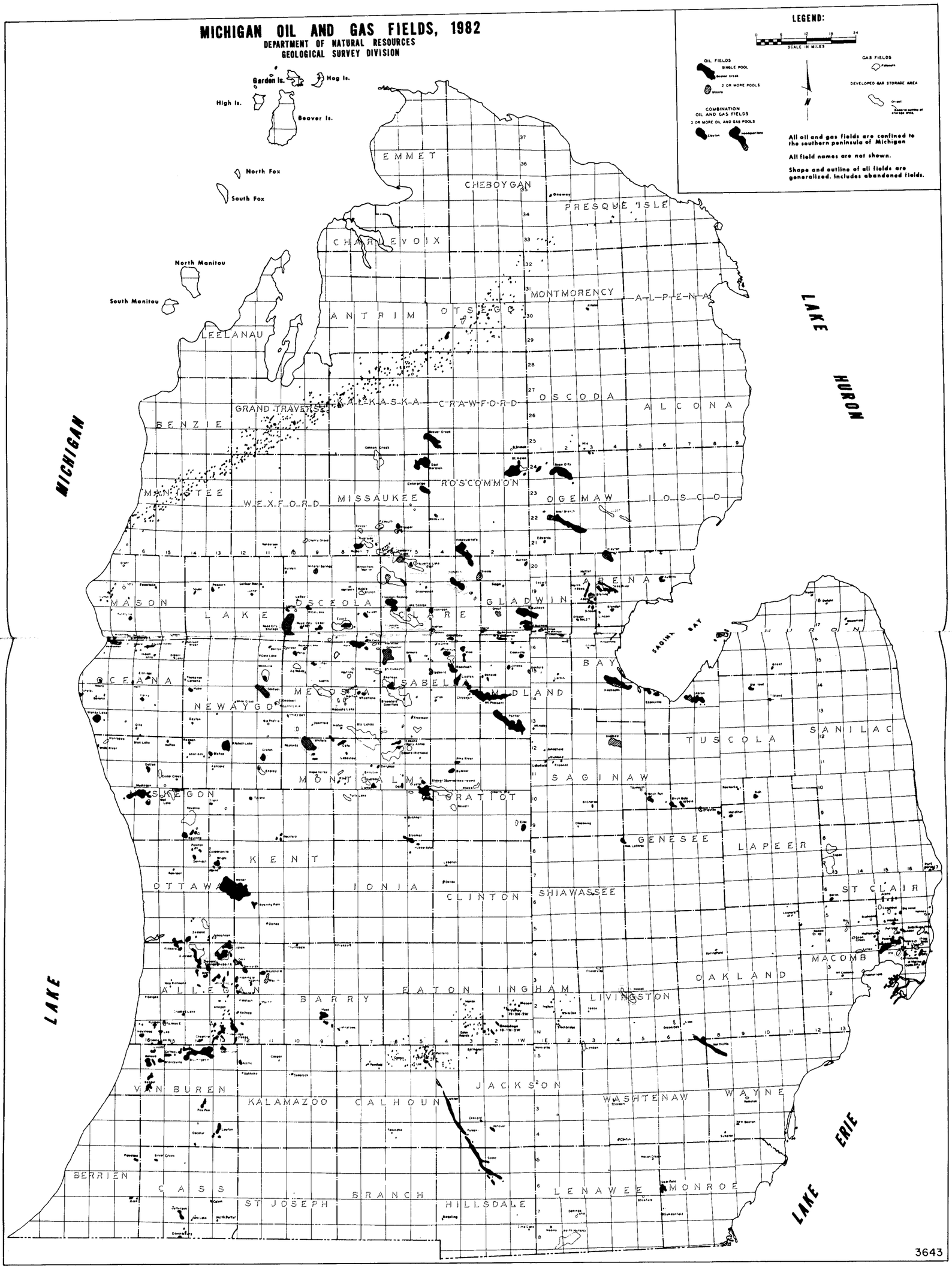

MICHIGAN OIL AND GAS FIELDS, 1982
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
LEGEND:
SCALE IN MILES
OIL FIELDS
SINGLE POOL
2 OR MORE POOLS
COMBINATION OIL AND GAS FIELDS
2 OR MORE OIL AND GAS POOLS
GAS FIELDS
DEVELOPED GAS STORAGE AREA
All oil and gas fields are confined to the southern peninsula of Michigan
All field names are not shown.
Shape and outline of all fields are generalized. Includes abandoned fields.
Garden Is.
Hog Is.
High Is.
Beaver Is.
North Fox
South Fox
North Manitou
South Manitou
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
SAGINAW BAY
EMMET
CHEBOYGAN
PRESQUE ISLE
CHARLEVOIX
MONTMORENCY
ALPENA
ANTRIM
OTSEGO
LEELANAU
GRAND TRAVERSE
KALKASKA
CRAWFORD
OSCODA
ALCONA
BENZIE
ROSCOMMON
OGEMAW
IOSCO
MANISTEE
WEXFORD
MISSAUKEE
ARENA
MASON
LAKE
OSCEOLA
CLARE
GLADWIN
OCEANA
MECOSTA
ISABELLA
MIDLAND
NEWAYGO
TUSCOLA
SANILAC
MONTCALM
SAGINAW
MUSKEGON
GRATIOT
GENESEE
LAPEER
KENT
OTTAWA
IONIA
CLINTON
SHIAWASSEE
ST CLAIR
MACOMB
OAKLAND
ALLEGAN
BARRY
EATON
INGHAM
LIVINGSTON
VAN BUREN
KALAMAZOO
CALHOUN
JACKSON
WASHTENAW
WAYNE
BERRIEN
CASS
ST JOSEPH
BRANCH
HILLSDALE
LENAWEE
MONROE
3643

ILLUSTRATION 7
GEOLOGICAL SURVEY ADMINISTRATIVE DISTRICT BOUNDRIES

The dots shown on the map are the general location of Michigan Department of Natural Resources (DNR) Geological Survey district and area field offices. These districts are arranged for administrative and regulatory purposes. Although they are often called oil and gas districts they should not be confused with the statistical reporting districts shown in Illustration 1.

The following listing of telephone numbers is included for your reference.

Michigan DNR Geological Survey Division
Box 30028 (4th Floor Mason Bldg.)
Lansing, Michigan 48909

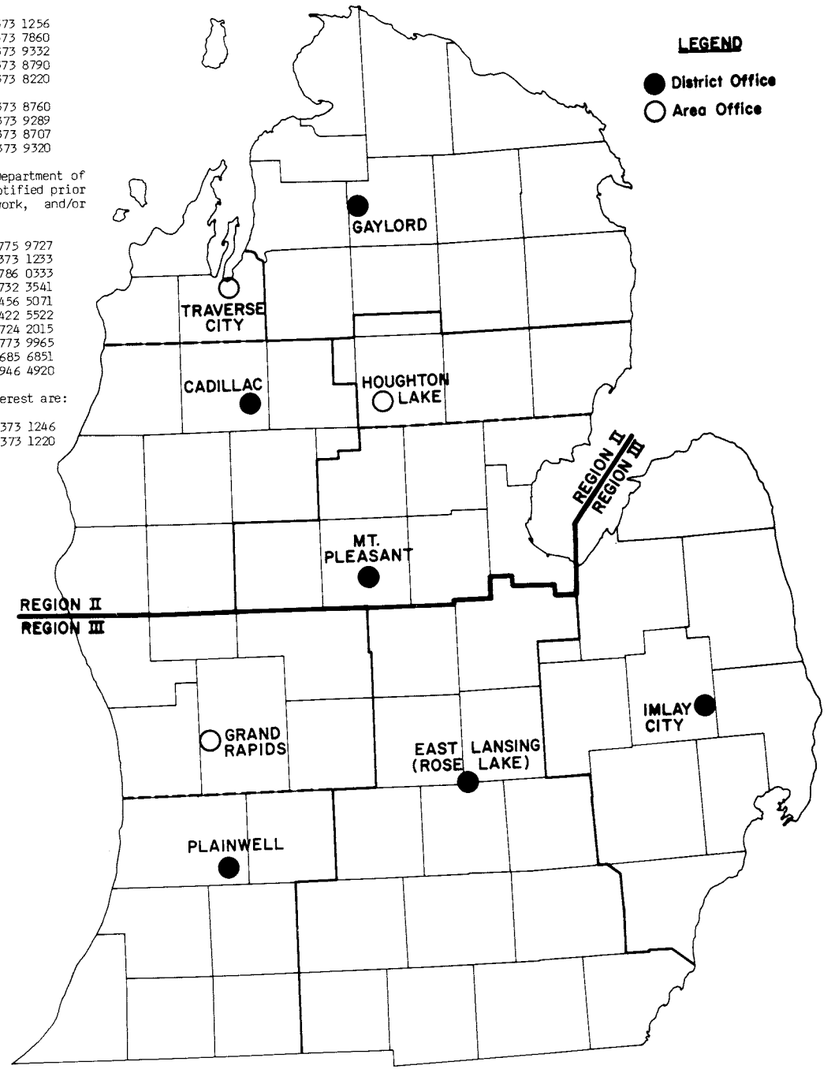
State Geologist	517 373 8014
Compliance	517 373 8741
Information & Technical Services	517 373 1256
Maps and Graphics	517 373 9236
Microfilm	517 373 7836
Planning & Fiscal Control	517 373 1256
Economic and Environmental Geology Section	517 373 1256
Groundwater	517 373 7860
Mine Reclamation	517 373 9332
Mining & Economic Geology	517 373 8790
Petroleum Geology	517 373 8220
Oil and Gas Section	517 373 8760
Mineral Wells	517 373 9289
Production & Proration	517 373 8707
Regulatory Control	517 373 9320

The nearest Field Office of the Michigan Department of Natural Resources Geological Survey must be notified prior to the commencement of any drilling, rework, and/or plugging operations.

Cadillac	616 775 9727
East Lansing	517 373 1233
Escanaba	906 786 0333
Gaylord	517 732 3541
Grand Rapids	616 456 5071
Houghton Lake	517 422 5522
Imlay City	313 724 2015
Mt. Pleasant	517 773 9965
Plainwell	616 685 6851
Traverse City	616 946 4920

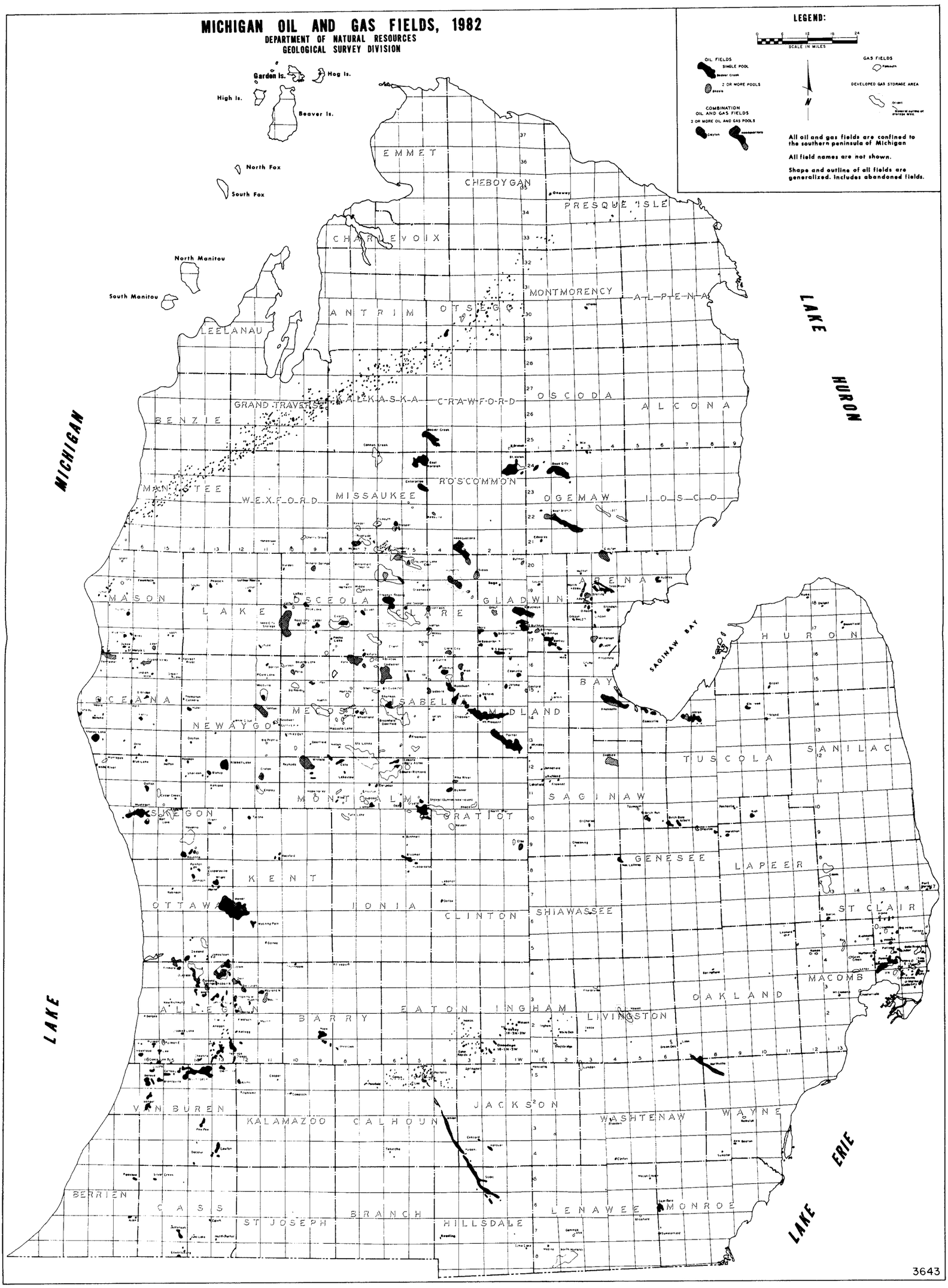
Other DNR telephone numbers that may be of interest are:

Lands Division	517 373 1246
DNR Information Services Center	517 373 1220



MICHIGAN OIL AND GAS FIELDS, 1982

DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION



3643