



TABLE 4 MICHIGAN OIL AND GAS FIELDS Continued

FIELD NAME	POOL CLASSIFICATION	ACTIVE OIL FIELD OR POOL			ABANDONED OIL FIELD OR POOL			ACTIVE GAS FIELD OR POOL			ABANDONED GAS FIELD OR POOL			GAS STORAGE RESERVOIR			UNDEVELOPED GAS STORAGE RESERVOIR		
		COUNTY TOWNSHIP PRODUCING SECTIONS	YEAR OF DISC.	PRODUCING FORMATION OR POOL	DEPTH IN FEET	PAY ZONE THICKNESS IN FEET AND LITHOLOGY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL OR GAS WELLS TO COMP. ABAND. PRODUCING IN 1 9 6 8	SHUT IN OR SHUT DOWN	PRODUCED THROUGH 1968	CUMULATIVE THROUGH 1968	RECOVERY PER ACRE DRILLED (BBL.S.)	BRINE PRODUCTION DISPOSAL SURFACE	TOTAL BRINE PRODUCTION SURFACE	RECOVERY PER ACRE DRILLED (BBL.S.)	BRINE PRODUCTION DISPOSAL SURFACE	TOTAL BRINE PRODUCTION SURFACE	
SHREVEY	●	OCEANA	1951	TRAVERSE	1743 3 L	43.0	DUNDRE	2534	20 0 0 6	1,797	227,667	350	650	60	0	0	60		
SHRELDAN	☉	BENONA TWP., 14N-10W, SECTION 16; MUSKOGEE	1955	MICHIGAN STRAY	1375 2 S		DUNDRE	3904	5 0 0 1		271,374	480							
SHRELDAN, SEC. 27	●	SHRELDAN TWP., 12N-14W, SECTIONS 13, 14	1951	TRAVERSE	2204 1 L		TRAVERSE	2205	1 ABANDONED 1955	648		10	63						
SHERMAN	●	ISABELLA	1956	DUNDRE	5650 4 D	42.0	STAVANIA	4994	88 0 0 5	5,437	4,715,197	1020	4623	240	0	240			
SHERMAN TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	ISABELLA	1959	TRAVERSE	5080 17 D	44.8	DUNDRE	3635	3 ABANDONED 1947	1,364		20	60						
SHERMAN, SEC. 18	●	SHERMAN TWP., 15N-6W, SECTION 18			3217 4 L		DUNDRE												
SIX LAKES	☉	REFER TO TABLE 5 DEVELOPED GAS STORAGE RESERVOIRS																	
SHESIS	●	CLARE-CLAMEN	1955	TRAVERSE	3102 6 L	38.4	STAVANIA	6036	4 0 0 2	361	42,578	40	1064	0	1	1			
SHESIS TWP., 14N-10W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 14N-10W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1950	DUNDRE	3840 7 D	39.6	DUNDRE	5950	2 0 1 1	743	3,430	80	43						
SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1942	DETROIT RIVER SZ	4844 4 D	47.4													
SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1953	RICHFIELD	5080 17 D	44.8	DUNDRE	3635	3 ABANDONED 1947	1,364		20	60						
SHERMAN, SEC. 18	●	SHERMAN TWP., 15N-6W, SECTION 18			3217 4 L		DUNDRE												
SIX LAKES	☉	REFER TO TABLE 5 DEVELOPED GAS STORAGE RESERVOIRS																	
SHESIS	●	CLARE-CLAMEN	1955	TRAVERSE	3102 6 L	38.4	STAVANIA	6036	4 0 0 2	361	42,578	40	1064	0	1	1			
SHESIS TWP., 14N-10W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 14N-10W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1950	DUNDRE	3840 7 D	39.6	DUNDRE	5950	2 0 1 1	743	3,430	80	43						
SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1942	DETROIT RIVER SZ	4844 4 D	47.4													
SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	●	SHESIS TWP., 15N-6W, SECTIONS 29, 32, 33, 34; BROMFIELD TWP., 14N-6W, SECTIONS 3, 4, 5	1953	RICHFIELD	5080 17 D	44.8	DUNDRE	3635	3 ABANDONED 1947	1,364		20	60						
SHERMAN, SEC. 18	●	SHERMAN TWP., 15N-6W, SECTION 18			3217 4 L		DUNDRE												
SOUTH BRANCH	☉	CRANFORD	1948	RICHFIELD	4203 12 D		DETROIT RIVER	4436	1 1 0 1	(Shut-In)	0	40							
SOUTH BRANCH TWP., 25N-17W, SECTION 32	●	SOUTH BRANCH TWP., 25N-17W, SECTION 32			4203 12 D		DETROIT RIVER	4436	1 1 0 1	(Shut-In)	0	40							
SPRINGPORT	●	JACKSON	1960	TRENTON-BLACK RIVER	4656 12* D	46.5	PRAIRIE DU CHIEN	5950	2 0 1 1	743	3,430	80	43						
SPRINGPORT TWP., 18N-10W, SECTIONS 11, 14	●	JACKSON TWP., 18N-10W, SECTIONS 11, 14			4656 12* D	46.5	PRAIRIE DU CHIEN	5950	2 0 1 1	743	3,430	80	43						
ST. CHARLES	●	SAGINAW	1957	TRAVERSE	2305 3 L	51.6	TRAVERSE	2308	1 ABANDONED 1947	13,250		10	1325						
ST. CHARLES TWP., 10N-28E, SECTION 26	●	SAGINAW TWP., 10N-28E, SECTION 26			2305 3 L	51.6	TRAVERSE	2308	1 ABANDONED 1947	13,250		10	1325						
ST. CLAIR, SEC. 18	☉	ST. CLAIR TWP., 10N-28E, SECTION 26			2305 3 L	51.6	TRAVERSE	2308	1 ABANDONED 1947	13,250		10	1325						
ST. CLAIR TWP., 5N-17E, SECTION 18	●	ST. CLAIR TWP., 5N-17E, SECTION 18			2305 3 L	51.6	TRAVERSE	2308	1 ABANDONED 1947	13,250		10	1325						
ST. HELEN	●	ROSCOMON	1941	RICHFIELD	4180 11 D	43.3	SALINA	5440	99 0 14 54	79,981	3,916,494	3960	989	0	25	25			
ST. HELEN TWP., 24N-24W, SECTIONS 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32	●	ROSCOMON TWP., 24N-24W, SECTIONS 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32			4180 11 D	43.3	SALINA	5440	99 0 14 54	79,981	3,916,494	3960	989	0	25	25			
ST. MARY'S LAKE	●	WASCON	1968	TRAVERSE	1641 3 L		TRAVERSE	1644	1 1 0 1	1,656	1,656	20	83	0	0	0			
ST. MARY'S LAKE TWP., 17N-17W, SECTION 35	●	WASCON TWP., 17N-17W, SECTION 35			1641 3 L		TRAVERSE	1644	1 1 0 1	1,656	1,656	20	83	0	0	0			
STANDARD	●	AREMAC	1946	RICHFIELD	4108 3 D	35.4	RICHFIELD	4210	9 ABANDONED 1967	147,062		360	409						
STANDARD TWP., 18N-10W, SECTIONS 10, 11, 15	●	AREMAC TWP., 18N-10W, SECTIONS 10, 11, 15			4108 3 D	35.4	RICHFIELD	4210	9 ABANDONED 1967	147,062		360	409						
STANTON	●	MONTICAMI	1951	TRAVERSE	2916 7 DL	43.0	DUNDRE	3492	17 0 0 11	18,334	908,390	340	2671	360	0	360			
STANTON TWP., 11N-7W, SECTIONS 26, 27, 34, 35	●	MONTICAMI TWP., 11N-7W, SECTIONS 26, 27, 34, 35			2916 7 DL	43.0	DUNDRE	3492	17 0 0 11	18,334	908,390	340	2671	360	0	360			
STANVILLE	●	ST. CLAIR	1967	NIAGARAN	2336 5 D		NIAGARAN	2336	3 2 0 3	27,272	34,440	120	290	0	0	0			
STANVILLE TWP., 3N-10E, SECTION 9	●	ST. CLAIR TWP., 3N-10E, SECTION 9			2336 5 D		NIAGARAN	2336	3 2 0 3	27,272	34,440	120	290	0	0	0			
STERLING	●	AREMAC	1946	TRAVERSE	1970 5 L	36.2	RICHFIELD	4205	22 0 0 16	5,753	243,598	220	1109	3	0	11			
STERLING TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	●	AREMAC TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23			1970 5 L	36.2	RICHFIELD	4205	22 0 0 16	5,753	243,598	220	1109	3	0	11			
STERLING TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	●	AREMAC TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	1947	DUNDRE	2872 17 L	33.6						200	1,956	0	14	14			
STERLING TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	●	AREMAC TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	1952	DETROIT RIVER SZ	3918 5	41.1						200	1,956	0	14	14			
STERLING TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	●	AREMAC TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	1950	RICHFIELD	5153 8 D	37.6						1600	927	0	2	2			
STERLING TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23	●	AREMAC TWP., 19N-18E, SECTIONS 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23			5153 8 D	37.6						1600	927	0	2	2			
STORY LAKE	●	OCEANA	1949	"BERIA"	930 1 SL	48.0	NIAGARAN	3937	2 ABANDONED 1965										
STORY LAKE TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16	●	OCEANA TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16			930 1 SL	48.0	NIAGARAN	3937	2 ABANDONED 1965										
STORY LAKE TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16	●	OCEANA TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16	1946	TRAVERSE	1630 19 L	44.9						1940	4877	2000	1	2001			
STORY LAKE TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16	●	OCEANA TWP., 13N-18W, SECTIONS 9, 10, 11, 14, 15, 16			1630 19 L	44.9						1940	4877	2000	1	2001			
SOMERFIELD	●	MORICE-LENAHE	1958	TRENTON-BLACK RIVER	1940 10 DL		TRENTON-BLACK RIVER	2382	2 ABANDONED 1964										
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			1940 10 DL		TRENTON-BLACK RIVER	2382	2 ABANDONED 1964										
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	1953	TRAVERSE	2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	1953	TRAVERSE	2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	1953	TRAVERSE	2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	1953	TRAVERSE	2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	1953	TRAVERSE	2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2996	345	0	345			
SOMERFIELD TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24	●	MORICE-LENAHE TWP., 7N-6E, SECTION 30; DEARBFIELD TWP., 7N-5E, SECTION 24			2853 1 L	44.5	DUNDRE	3366	35 0 2 20	17,268	1,048,985	350	2						



TABLE 5 DEVELOPED GAS STORAGE RESERVOIRS

FIELD NAME	COUNTY TOWNSHIP PRODUCING SECTIONS	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE DEPTH IN FEET	OIL THICKNESS AND LITHOLOGY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL OR GAS WELLS			OIL PRODUCTION - BBL. PRODUCED IN 1968	GAS PRODUCTION - Mcf. PRODUCED IN 1968	RECOVERY PER ACRE DRIILLED ACRES (BBL.)	BRINE PRODUCTION	
								TO COMP. END IN	ABAND. PRODUCING IN	SHUT IN AT END OF				CUMULATIVE THROUGH 1968	PRODUCED IN 1968
⊕ AUSTIN	MECOSTA	1933	MICHIGAN STRAY	1380	14 S	DETROIT RIVER	4043	5	0	93	6,109,033	3970			
⊕ BELLE RIVER MILLS	ST. CLAIR	1961	SALINA-NIAGARAN	2215	305 D	CLINTON	2694	3	0	37	0	1,212	22,397,941	840	
⊕ CHAMBERY LAKE	CLARE-MISSAUBIE	1943	MICHIGAN STRAY	1321	10 S	RICHFIELD	5202	0	0	171	7,237,451	7000			
⊕ CROTON	BEHAVIO	1951	MARSHALL	917	4 S	SALINA	3993	0	0	7	1,320,835	860			
⊕ FREDMAN-LINCOLN	CLARE	1938	MICHIGAN STRAY	1500	10 S	DETROIT RIVER	3957	0	0	81	18,099,490	6600			
⊕ GOODWELL	BEHAVIO	1943	MICHIGAN STRAY	1142	20 S	DETROIT RIVER	3562	0	0	63	5,872,670	3020			
⊕ HAMILTON, NORTH	CLARE	1952	NICHIGAN STRAY - MARSHALL	1487	8 S	RICHFIELD	5395	13	0	61	5,450,065	3040			
⊕ HOWELL	LIVINGSTON	1935	SALINA	3920	9 D	ST. PETER 56	5958	0	0	69	23,678,120	2400			
⊕ IHA	ST. CLAIR	1953	SALINA-NIAGARAN	2276	33 D	CLINTON	2632	0	0	15	3,496,666	680			
⊕ LENOX	MACOMB	1960	SALINA-NIAGARAN	2794	46 D	CLINTON	3018	0	0	11	0	2,565	2,152,679	300	
⊕ MARION (Winterfield)	CLARE-OSCEOLA	1940	MICHIGAN STRAY	1344	15 S	SYLVANIA	5100	0	0	82	20,081,234	10720			
⊕ NORPVILLE	WAYNE-WASHTENAW	1954	TRENTON-BLACK RIVER	1395	70 D	CAMERO-ORONOVICIAN	5850	0	2	70	78,313	19,126,876	2827		
⊕ ORIENT	OSCEOLA	1945	MICHIGAN STRAY	1508	11 S	SYLVANIA	5307	0	0	51	5,350,856	2600			
⊕ OTHERS	ALEXANDER	1956	SALINA	2650	12 D	TRENTON	4060	0	0	186	14,615,048	6660			

TABLE 5 DEVELOPED GAS STORAGE RESERVOIRS Continued

FIELD NAME	COUNTY TOWNSHIP PRODUCING SECTIONS	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE DEPTH IN FEET	OIL THICKNESS AND LITHOLOGY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL OR GAS WELLS			OIL PRODUCTION - BBL. PRODUCED IN 1968	GAS PRODUCTION - Mcf. PRODUCED IN 1968	RECOVERY PER ACRE DRIILLED ACRES (BBL.)	BRINE PRODUCTION		
								TO COMP. END IN	ABAND. PRODUCING IN	SHUT IN AT END OF				CUMULATIVE THROUGH 1968	PRODUCED IN 1968	DISPOSAL SUBSURFACE
⊕ RAY	MACOMB	1961	SALINA-NIAGARAN	2945	101 D	NIAGARAN	3273	1	0	31	0	1,689	1,803,780	26,393,054	660	
⊕ REED CITY	OSCEOLA-LAKE	1940	MICHIGAN STRAY	1217	12 S	ST. PETER 56	8560	0	0	78	0	7,642,245	4880			
⊕ RIVERSIDE	MISSAUBIE	1940	MICHIGAN STRAY	1455	7 S	DURDEE	3993	0	0	97	5,188,401	3680				
⊕ SALEM	ALLEGAN	1937	SALINA	2725	2 D	TRENTON	3792	0	0	81	0	2,973	11,310,630	4560		
⊕ SHAVER (Summer - New James)	GRANT-MOYNAH	1935	MICHIGAN STRAY	1020	11 S	DURDEE	3536	0	1	48	0	11,114,966	3920			
⊕ SIX LAKES	ISABELLA	1924	MICHIGAN STRAY	1270	25 S	DETROIT RIVER	3790	0	1	868	0	51,606,719	11480			
⊕ WENFIELD	MONTECALM	1935	MICHIGAN STRAY	1125	8 S	DETROIT RIVER	3405	0	0	8	0	4,856,132	3840			
⊕ WOODVILLE (Hopedale)	BEHAVIO	1943	MICHIGAN STRAY	1195	13 S	DETROIT RIVER	3405	0	0	41	0	2,683,259	2240			

NOT INCLUDED WITH ABOVE FIELDS IS ONE SMALL RESERVOIR LOCATED NEAR MARSHVILLE, ST. CLAIR CO. GAS IS STORED IN A SALT CAVERN AT A DEPTH OF ABOUT 2050 FT. GAS CAPACITY OF THE CAVERN, IN SALINA SAULT, IS ABOUT 341 MMCF AT A WELLHEAD PRESSURE OF 1100 PSI.

TABLE 6 UNDEVELOPED GAS STORAGE RESERVOIRS

FIELD NAME	COUNTY TOWNSHIP PRODUCING SECTIONS	YEAR OF DISC.	PRODUCING FORMATION OR POOL	PAY ZONE DEPTH IN FEET	OIL THICKNESS AND LITHOLOGY A.P.I.	DEEPEST FORMATION OR POOL TESTED	DEPTH IN FEET	NUMBER OF OIL OR GAS WELLS			OIL PRODUCTION - BBL. PRODUCED IN 1968	GAS PRODUCTION - Mcf. PRODUCED IN 1968	RECOVERY PER ACRE DRIILLED ACRES (BBL.)	BRINE PRODUCTION	
								TO COMP. END IN	ABAND. PRODUCING IN	SHUT IN AT END OF				CUMULATIVE THROUGH 1968	PRODUCED IN 1968
⊖ BROOMFIELD-DEERFIELD	ISABELLA	1930	MICHIGAN STRAY	1355	5 S	SYLVANIA	4994	91	0	6	12	13,069,069	8080		
⊖ COLDWATER	ISABELLA	1945	MICHIGAN STRAY	1390	10 S	SYLVANIA	5090	15	0	0	12	7,352,605	2400		
⊖ EMORE-RICHARD	MONTECALM	1936	MICHIGAN STRAY	1300	6 S	DURDEE	3700	47	0	11	7,160	8,949,053	6800		
⊖ EVART	OSCEOLA	1941	MICHIGAN STRAY	1410	7 S	DETROIT RIVER	4457	33	0	7	4,995,722	5120			
						TOTALS		106	0	6	42	7,100	31,266,149		



TABLE 9 GAS PLANT OPERATIONS BY PLANT OR FIELD, 1968 (All figures in MCF)

Plant or Field	Input Totals	Plant Fuel	Lease Fuel	Storage and/or Repressuring Recycling	Line Loss	Vented	Extraction Loss	To Pipe Line	L.P.G. Recovery Gallons
*Albion-Scipio	11,868,941	1,089,670	0	0	0	81,163	977,993	9,720,115	29,507,448
*Beaver Creek	570,923	23,019	103,500	0	0	9,640	4,353	430,411	117,000
Belle River Mills	16,712,362	287,656	0	11,282,356	0	0	684,568	4,457,782	21,302,034
Belle River Mills	plant functions as a combined recycling and storage operation.								
Boyd	13,188,981	207,651	161,097	2,536,418	153,359	27,936	508,307	9,594,213	17,156,019
Boyd Plant,	serving 10 fields receives both dry and oil well gas.								
*Hamilton	216,139	17,192	41,109	0	0	0	5,439	152,399	139,626
*Hanover	93,814	4,450	0	0	0	0	13,421	75,943	4,200
*Norwich East	635,560	63,311	61,379	148,375	0	0	0	362,495	0
Reed City	18,320,824	301,624	0	0	0	0	345,872	17,673,328	9,949,609
Reed City plant	serves a combination storage and repressuring operation in an oil reservoir.								
*Rose City	362,238	7,741	0	0	0	0	0	354,497	0
*St. Helen	672,795	29,710	56,282	0	0	0	2,703	584,100	67,533
Willow Run	161,372,263	516,698	0	0	0	0	739,889	160,115,676	25,366,517
Totals	224,014,840	2,548,722	423,367	13,967,149	153,359	118,739	3,282,545	203,520,959	103,609,986

\* Receives and processes oil well gas only.

NOTE: The above table is the record of those plants which are serving oil field operations, or which are extracting natural gas liquids from designated dry gas sources (Bell River Mills and Willow Run). Transmission and dry gas storage facilities are excluded.

TABLE 10 GAS PLANT OPERATIONS BY MONTH - 1968 (All figures in MCF)

Month	Input Totals	Plant Fuel	Lease Fuel	Storage and/or Repressuring Recycling	Line Loss	Vented	Extraction Loss	To Pipe Line	L.P.G. Recovery Gallons
January	23,206,225	220,496	38,738	17,484	16,196	4,865	308,714	22,599,732	10,305,989
February	21,149,995	200,993	36,620	18,037	21,817	4,682	276,276	20,591,570	8,918,325
March	22,218,687	218,166	31,449	1,073,473	9,034	4,327	323,107	20,559,131	10,354,233
April	17,256,229	203,227	30,334	1,509,670	9,677	2,616	280,389	15,220,316	8,975,129
May	14,710,934	202,312	29,879	1,709,612	1,672	2,306	267,367	12,497,786	8,341,106
June	19,419,916	216,141	31,109	1,633,522	34,187	37,539	257,713	17,209,705	8,019,193
July	15,125,151	214,924	33,736	1,981,577	5,623	21,161	256,105	12,612,025	8,002,969
August	19,038,728	225,719	46,360	1,820,702	11,360	19,685	266,861	16,648,041	8,388,640
September	11,137,906	194,327	54,738	1,846,890	9,296	14,295	226,652	8,791,708	7,089,832
October	15,575,015	214,503	25,608	1,399,636	10,030	2,136	253,932	13,669,170	8,383,878
November	21,130,990	210,603	31,397	952,346	12,948	2,253	264,427	19,657,016	8,302,260
December	24,045,064	227,311	33,399	4,200	11,519	2,874	301,002	23,464,759	9,484,255
Totals	224,014,840	2,548,722	423,367	13,967,149	153,359	118,739	3,282,545	203,520,959	103,609,986

TABLE 11 PRIMARY SUPPLY LOCATIONS AND STORAGE FACILITIES FOR LIQUIFIED PETROLEUM GAS

Company	Plant Location		Type of Facility	Facility Capacity Gallons of LPG
	County	Locality		
Bay Refining Company	Bay	Bay City	Refinery Storage	95,200
Dow Chemical Company	Midland	Midland	Chemical Plant (Underground)	4,410,000
Leonard Refineries, Inc.	Gratiot	Alma	Refinery Storage	120,000
Marathon Oil Company	Hillsdale	Mosherville	Natural Gas Processing Plant	300,000
Cities Service Oil Company	Kent	Lowell	Underground Storage	31,920,000
Skelly Oil Company	Kent	Alto	Underground Storage	10,957,000
Consumers Power Company	Macomb	New Baltimore	Natural Gas Processing Plant	150,000
Michigan Consolidated Gas Co.	St. Clair	St. Clair	Natural Gas Processing Plant	450,000
Michigan Consolidated Gas Co.	Washtenaw	Ypsilanti	Natural Gas Processing Plant	450,000
Mobil Oil Company	Wayne	Trenton	Underground Storage	15,201,000
Sun Oil Company	Wayne	Wayne	Underground Storage	24,000,000
Marathon Oil Company	Wayne	Wayne	Underground Storage	(1)
Phillips Petroleum Company	Wayne	Wyandotte	Underground Storage	8,400,000
Wyandotte Chemical Corp.	Wayne	Wyandotte	Underground Storage	4,500,000

TOTAL PRIMARY STORAGE BY COUNTY, GALLONS LPG	
Bay	95,200
Gratiot	120,000
Hillsdale	300,000
Kent	42,877,000
Macomb	150,000
Midland	4,410,000
St. Clair	450,000
Washtenaw	450,000
Wayne	52,101,000
Combined Primary Storage	100,953,200

TOTAL PRIMARY STORAGE, GALLONS LPG	
Refinery Storage	215,200
Gas Plant Storage	1,350,000
Underground Storage	99,388,000
Combined Primary Storage	100,953,200

LPG underground storage reservoirs are in man-made caverns dissolved from Salina Group (Silurian) salt beds. The depth to storage reservoir salt beds varies with locality within the state.

(1) Three caverns abandoned because of surface industrial expansion. Rewashing 3 new caverns of 200,000 barrel capacity each, scheduled for completion in 1969

\* \* MICHIGAN OIL REFINERIES \* \*

COMPANY	REFINERY LOCATION	NOMINAL CAPACITY* BBLs. DAY
Bay Refining, Division Dow Chemical Company	Bay City	15,000
Crystal Refining Company	Carson City	6,200
Lakeside Refining Company	Kalamazoo	3,500
Leonard Refineries, Inc.		
Leonard Division	Alma	29,000
Roosevelt Division	Mt. Pleasant	7,500
Marathon Oil Company	Detroit	50,000
Naph-Sol Refining Company (Abandoned, 1968)	Muskegon	(1) (10,000)
Osceola Refining Company	West Branch	5,000
Petroleum Specialties, Inc.	Flat Rock (Inactive)	6,500
Socony Mobil Oil Company	Trenton	40,700
	Total Refinery Capacity	163,400

(1) Not included in total refinery capacity.

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

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 prior to 1937 are incomplete. This table shows the reported amount of produced brine and the method of disposal from 1937 to present. Most oil field brine is now returned to subsurface formations. Small quantities are used for dust control or ice and snow removal on county roads in local areas. A small amount of brine is also disposed in burning pits. Brine production and disposal figures should not be considered entirely accurate.

**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 man-made 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. Brine disposal well permits are issued for these wells.

**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" does not include oil or gas wells converted to service wells.

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

Permit		Pre-Cambrian Total Depth	Year Completed	
26112	Berrien Co. Berrien Twp.	4604 (-3800) 5647 (-4843)	1965	
23478	Charlevoix Co. Peane Twp.	4718 (-3977) 4803 (-4062)	1961	Age Biotite Feldspar Rb-Sr K-Ar 1100 1090 1110
23435	Charlevoix Co. Peane Co.	4566 (-3888) 5383 (-4705)	1961	
10448	Lenawee Co. Riga Twp.	3865 (-3150) 3902 (-3186)	1944	
11221	Monroe Co. Berlin Twp.	3342 (-2745) 3377 (-2780)	1945	
7702	Monroe Co. Ida Twp.	3595 (-2926) 5495 (-4826)	1954	
25494	Monroe Co. Summerfield Twp.	3637 (=2951) 3671 (-2985)	1964	
27199	Presque Isle Co. North Allis Twp.	5877 (-5069) 5940 (-5132)	1968	
BD139	St. Clair Co. Casco Twp.	4605 (-3989) 4627 (-4011)	1964	
25780	St. Clair Co. Clay Twp.	4152 (-3572) 4188 (-3608)	1965	Age Biotite Rb-Sr 1020
196	St. Clair Co. St. Clair Twp.	4730 (-4080) 4770 (-4110)	1929	
10792	Washtenaw Co. Salem Twp.	6075 (-5189) 6094 (-5208)	1944	
10141	Washtenaw Co. Salem Twp.	6374 (-5459) 6410 (-5495)	1944	Age Biotite Rb-Sr 950
11341	Washtenaw Co. Superior Twp.	5670 (-4852) 5692 (-4874)	1945	Age Biotite Rb-Sr 1050
BD146	Wayne Co., City of Woodhaven	3704 (-3095) 3752 (-3143)	1969	
10430	Wayne Co. Huron Twp.	3985 (-3360) 4046 (-3321)	1944	
DEEPEST EXPLORATORY WELL DRILLED IN MICHIGAN				
25099	Ogemaw Co. Foster Twp.	9766 (-8290) 12,966 (-11520)	Cambrian	Trenton

# TRENDS IN MICHIGAN OIL PRODUCTION

## PRINCIPAL PRODUCING FORMATIONS

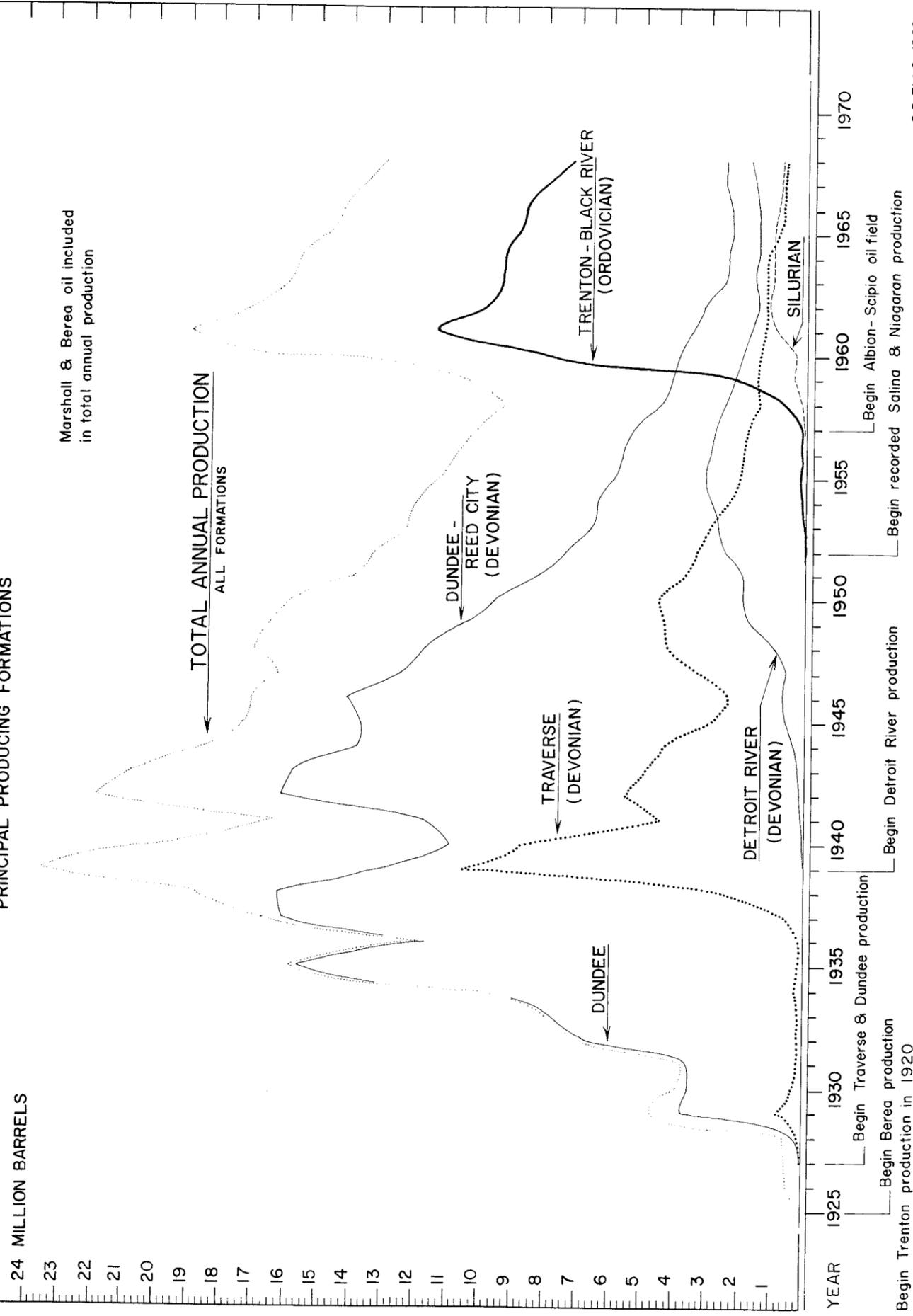


TABLE 12. OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1968 AND PRIOR YEARS

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

Y E A R	MISSISSIPPIAN		DEVONIAN		SILURIAN		ORDOVICIAN	Total Barrels Oil All Formations
	Marshall	Berea	Traverse	Dundee-Reed City	Salina-Niagara	Trenton-Black River		
1925 Through 1929								5,767,787
1930 Through 1934		318,171	995,439	31,870,671				33,184,281
1935 Through 1939	7,411 (Cumulative)	310,313	13,814,816	72,339,293	14,000		43,565	86,529,398
1940 Through 1944	22,040 (Cumulative)	229,262	27,856,377	67,939,211	727,418		348,477	97,122,785
1945 Through 1949	17,283 (Cumulative)	166,687	16,914,771	62,438,443	4,302,309		106,510	83,946,003
1950 Through 1954	9,068 (Cumulative)	125,089	16,974,863	38,058,703	11,878,669	43,091	225,180	67,314,663
1955 Through 1959	8,183 (Cumulative)	110,639	8,788,785	25,618,934	13,716,790	568,085	3,108,341	51,920,757
1960 Through 1964	6,090 (Cumulative)	84,222	6,777,853	15,725,957	8,260,636	4,611,123	48,022,216	83,488,097
1965	1,290	17,046	923,300	2,343,628	1,538,696	976,836	8,927,427	14,728,223
1966	1,007	15,741	799,745	2,372,040	1,513,847	900,480	8,690,239	14,273,099
1967	1,051	18,821	707,385	2,527,607	1,602,212	797,594	8,009,515	13,664,185
1968	822	31,569	667,189	2,516,164	1,782,464	704,547	7,271,649	12,974,404

TABLE 13. CUMULATIVE OIL PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1968 AND PRIOR YEARS

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

Y E A R	MISSISSIPPIAN		DEVONIAN			SILURIAN		ORDOVICIAN		Total Barrels Oil All Formations
	Marshall	Berea	Traverse	Dundee- Reed City	Detroit River	Salina- Niagaran	Trenton- Black River			
	1938	1925	1927	1927	1939	1952	1935			
1925 Through 1929		876,559	873,777	4,017,451.					5,767,787	
1930 Through 1934		1,194,730	1,869,216	35,888,122.					38,952,068	
1935 Through 1939	7,411	1,505,043	15,684,032	108,227,415	14,000		43,565		125,481,466	
1940 Through 1944	29,451	1,734,305	43,540,409	176,166,626	741,418		392,042		222,604,251	
1945 Through 1949	46,734	1,900,992	60,455,180	238,605,069	5,043,727		498,552		306,550,254	
1950 Through 1954	55,802	2,026,081	77,430,043	276,663,772	16,922,396	43,091	723,732		373,864,917	
1955 Through 1959	63,985	2,136,720	86,218,828	302,282,706	30,640,186	611,176	3,832,073		425,785,674	
1960 Through 1964	70,075	2,220,942	92,996,681	318,008,663	38,900,822	5,222,299	51,854,289		509,273,771	
1965 Through 1966	71,365	2,237,988	93,919,981	320,352,291	40,439,518	6,199,135	60,781,716		524,001,994	
1966	72,372	2,253,729	94,699,726	322,724,331	41,953,365	7,099,615	69,471,955		538,275,093	
1967	73,423	2,272,550	95,407,111	325,251,938	43,555,577	7,897,209	77,481,470		551,939,278	
1968	74,245	2,304,119	96,074,300	327,768,102	45,338,041	8,601,756	84,753,119		564,913,682	

### TRENDS IN MICHIGAN GAS PRODUCTION PRINCIPAL PRODUCING FORMATIONS

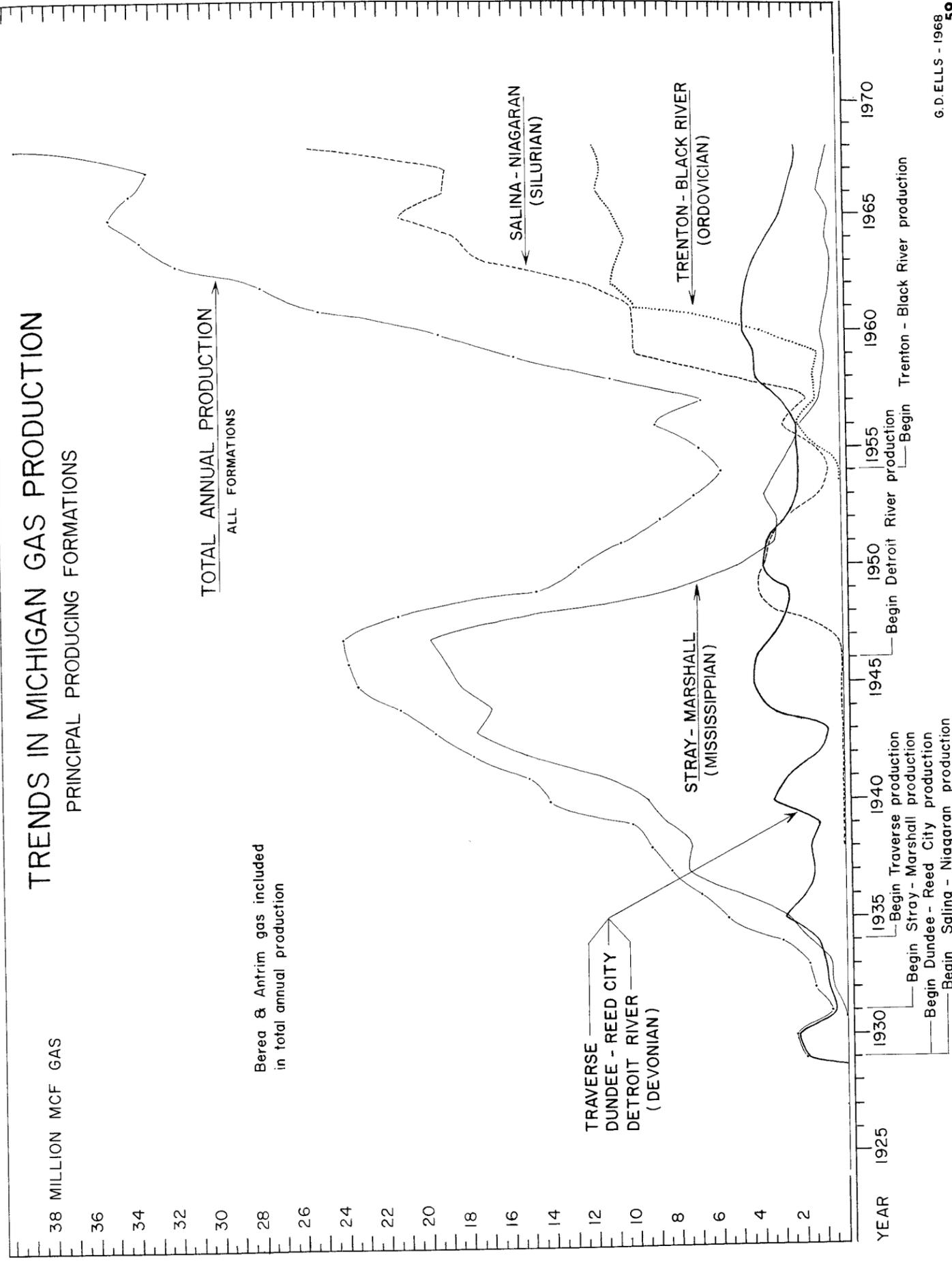


TABLE 14. GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1968 AND PRIOR YEARS

Y E A R	CENOZOIC		MISSISSIPPIAN				DEVONIAN				SILURIAN		Total MCF Gas All Formations											
	Glacial Drift	1949	Stray- Marshall	Berea	Antrim Shale	Traverse	Dundee- Reed City	Detroit River	Salina- Niagara	Trenton- Black River	1929	1954												
														First Year of Recorded Gas Production by Formation										
														1936	1947	1934	1929	1946	1929	1954				
1925 Through 1929													1,887,732	74,867	1,962,599									
1930 Through 1934			3,001,963			3,744	6,034,206						61,578		9,101,491									
1935 Through 1939			30,769,471	1,391,076		69,894	8,862,165						6,331		41,098,937									
1940 Through 1944			70,498,989	5,860,831		3,716,132	7,647,510						79,983		87,803,445									
1945 Through 1949	8,020	80,217,680	1,467,460	52,495	1,414,004	15,710,636	793,763	7,393,744					107,057,802											
1950 Through 1954	8,020	18,033,449	916,202	55,626	1,913,497	5,361,578	6,997,257	11,316,082	10,725				44,604,416											
1955 Through 1959	8,020	6,834,419	148,085	56,686	266,623	2,287,066	12,539,252	20,117,524	6,609,393				48,859,048											
1960 Through 1964	8,020	2,874,824	42,020	156,485	876,356	1,117,064	19,252,334	66,799,392	45,443,994				136,562,469											
1965	8,020	404,485	114,926	15,889	105,848	27,135	2,626,290	21,027,896	10,797,899				35,120,368											
1966	8,020	963,211	192,529	985	84,458	31,054	2,299,643	18,992,758	11,555,377				34,120,015											
1967	8,020	736,901	184,751	6,950	148,281	47,516	1,908,777	18,844,819	11,363,645				33,241,640											
1968	8,020	393,299	177,575	31,644	115,611	13,231	1,858,049	25,367,506	11,728,248				39,685,163											

TABLE 15. CUMULATIVE GAS PRODUCTION BY GEOLOGIC SYSTEM AND FORMATION - 1968 AND PRIOR YEARS

Y E A R	CENOZOIC		MISSISSIPPIAN				DEVONIAN				SILURIAN		Cumulative MCF All Formations											
	Glacial Drift	1949	Stray- Marshall	Berea	Antrim Shale	Traverse	Dundee- Reed City	Detroit River	Salina- Niagara	Trenton- Black River	1929	1954												
														First Year of Recorded Gas Production by Formation										
														1936	1947	1934	1929	1946	1929	1954				
1925 Through 1929													1,887,732	74,867	1,962,599									
1930 Through 1934			3,001,963			3,744	7,921,938						136,445		11,064,090									
1935 Through 1939			33,771,434	1,391,076		73,638	16,784,103						142,776		52,163,027									
1940 Through 1944			104,270,423	7,251,907		3,789,770	24,431,613						222,759		139,966,472									
1945 Through 1949	8,020	202,521,522	8,719,367	52,495	5,203,774	40,142,249	793,763	7,616,503					247,024,274											
1950 Through 1954	8,020	209,355,971	9,635,569	108,121	7,117,271	45,503,827	7,791,020	18,932,585	10,725				291,628,690											
1955 Through 1959	8,020	212,230,795	9,783,654	164,807	7,383,894	47,790,893	20,330,272	39,050,109	6,620,118				340,487,738											
1960 Through 1964	8,020	214,728,691	9,825,674	321,292	8,260,250	48,907,957	39,582,606	105,849,501	52,064,112				477,050,207											
1965	8,020	212,635,280	9,940,600	337,181	8,366,098	48,935,092	42,208,896	126,877,397	62,862,011				512,170,575											
1966	8,020	213,598,491	10,133,129	338,166	8,450,556	48,966,146	44,508,539	145,870,155	74,417,388				546,290,590											
1967	8,020	214,335,392	10,317,880	345,116	8,598,837	49,013,662	46,417,316	164,714,974	85,781,033				579,532,230											
1968	8,020	214,728,691	10,495,455	376,760	8,714,448	49,026,893	48,275,365	190,082,480	97,509,281				619,217,393											

TABLE 16. CUMULATIVE OIL AND GAS PRODUCTION BY COUNTY THROUGH 1968

COUNTY	NUMBER OF WELLS		CUMULATIVE PRODUCTION		COUNTY	NUMBER OF WELLS		CUMULATIVE PRODUCTION	
	Oil	Gas	Barrels	Oil		Oil	Gas	Barrels	Oil
Allegan	1,304	89	19,128,093	30,212,460	Ogemaw	503	21	16,483,712	7,578,310
Arenac	411	44	45,272,278	6,722,136	Osceola	341	114	52,435,414	45,007,323
Barry	74	0	642,121	0	Oscoda	2	0	33,119	0
Bay	458	1	18,976,819	7,857	Otsego	1	26	2,990	368,931
Berrien	9	0	29,757	0	Ottawa	473	19	8,585,153	2,713,432
Calhoun	223	14	24,449,930	32,622,784	Roscommon	180	14	11,102,201	12,620,920
Cass	30	0	102,058	0	Saginaw	378	2	2,420,662	0
Clare	382	171	34,067,890	56,451,071	Shiawassee	8	0	14,217	0
Clinton	4	0	4,121	0	St. Clair	228	173	7,263,031	97,302,820
Crawford	83	1	5,552,269	14,384,466	Tuscola	151	0	2,380,886	0
Genesee	16	0	106,412	0	Van Buren	722	0	12,022,401	0
Gladwin	736	0	32,677,015	9,834	Washtenaw	10	18	760,090	7,518,343
Griott	46	74	1,105,555	12,936,005	Wayne	12	24	205,241	10,948,906
Hillsdale	244	1	40,365,707	33,517,689	Wayne	12	24	205,241	10,948,906
Huron	5	0	56,992	0	Wayne	1	4	4,814	924,719
Ionia	9	0	381,328	0	51 Counties			564,913,682	*619,217,396
Isabella	653	161	52,421,725	32,988,820					
Jackson	134	3	18,164,470	18,433,315					
Kalamazoo	18	0	28,868	0					
Kalkaska	22	7	1,263,218	2,133,910					
Kent	461	6	9,553,771	3,729,099					
Lake	32	1	2,239,083	182,438					
Lapeer	20	0	254,582	92,616					
Lenawee	3	70	12,196	132,291					
Livingston	1	19	1,676	23,741,734					
Macomb	5	44	33,772	31,938,054					
Mason	124	7	4,591,621	297,116					
Mecosta	126	196	9,859,234	30,893,785					
Midland	898	2	66,182,123	12,444,916					
Missaukee	175	63	13,749,595	13,714,893					
Monroe	45	0	708,121	0					
Montcalm	378	221	17,708,093	52,568,536					
Montmorency	3	1	7,688	0					
Muskegon	439	122	7,855,042	9,759,149					
Newaygo	199	46	8,690,370	13,132,193					
Oakland	6	4	30,983	13,737					
Oceana	327	7	14,925,175	1,172,788					

\*Does not include 3,050,143 MCF of unassigned gas from early records.

The cumulative gas figure shown on Table 15 does not include the above unassigned gas.

TABLE 17. OIL AND GAS FIELD BRINE PRODUCTION AND DISPOSAL - 1968 AND PRIOR YEARS

Year	Method of Disposal or Use (Barrels per day)			Total	Year	Records Prior to 1937 are Incomplete			Total		
	Pits	Roads	Chemical Co.			Year	Pits	Roads		Chemical Co.	
1937	8,342	-	10,375	21,849	40,206	1957	1,245	1,162	0	193,223	195,630
1938	6,748	-	8,920	31,211	46,879	1958	1,368	1,089	0	176,774	179,231
1939	4,901	-	7,466	48,579	60,946	1959	1,038	944	0	170,623	172,605
1940	5,206	-	6,726	68,822	74,754	1960	1,019	1,512	0	168,466	170,997
1941	3,540	-	8,452	78,484	90,476	1961	910	1,060	0	155,855	157,855
1942	4,725	-	8,082	83,722	96,529	1962	982	657	0	147,789	149,428
1943	4,963	-	8,170	89,207	102,340	1963	866	3,130	0	145,700	149,696
1944	3,964	-	8,778	102,090	114,832	1964	896	4,245	0	143,831	148,972
1945	2,352	-	8,992	107,973	119,317	1965	775	3,299	0	141,028	145,102
1946	2,307	-	9,151	121,385	132,843	1966	704	2,998	0	140,680	144,382
1947	1,883	-	8,579	132,844	143,346	1967	-	3,988	0	140,985	144,973
1948	1,495	-	8,430	148,497	158,422	1968	-	3,347	0	147,691	151,038
1949	1,541	-	8,568	162,172	172,781						
1950	1,212	-	6,949	180,018	188,179						
1951	1,623	-	7,630	190,074	199,327						
1952	1,425	147	1,500	204,216	207,288						
1953	1,233	175	460	188,949	190,817						
1954	1,374	120	614	191,970	194,078						
1955	1,560	161	609	200,031	202,361						
1956	1,389	697	2	194,475	196,563						

TABLE 18. CUMULATIVE WELL COMPLETIONS BY COUNTY THROUGH 1968 (Sheet 1 of 2)

County	Area of County (including in- land water)	Classification of Completed Wells (New Hole)					Total Com- pletions	Approximate Well Density (All Classes) Wells: Sq. Miles
		Square Miles	Acres	(does not include reworked wells)				
				Oil Wells	Gas Wells	Service Wells GS - OBS - SMD LPG		
Alcona	694	444,160				20	1:35	
Allegan	837	535,680		89	174	1,685	5:1	
Alpena	590	377,600				10	1:59	
Antrim	520	332,800		1		30	1:17	
Arenac	369	236,160	406	44		398	2:1	
Barry	571	365,440	74			128	1:3	
Bay	451	288,640	458	1		215	1:1	
Benzie	342	218,880				2	1:171	
Berrien	584	373,760	9			70	1:7	
Branch	517	330,880				45	1:11	
Calhoun	716	458,240	223	13		265	1:2	
Cass	505	323,200	30			123	1:3	
Charlevoix	451	288,640				11	1:41	
Cheboygan	798	510,720				15	1:53	
Chippewa	1,651	1,056,640			406	4	1:413	
Clare	577	369,280	382	171		358	2:1	
Clinton	573	366,720	4			78	1:7	
Crawford	566	362,240	83	1	3	22	1:5	
Delta	1,202	769,280				1	1:1200	
Eaton	572	366,080				22	1:26	
Emmet	477	305,280				3	1:159	
Genesee	649	415,360	16			41	1:11	
Gladwin	512	327,680	736			261	2:1	
Grand Traverse	490	313,600		3		11	1:35	
Gratiot	566	362,240	46	74	19	259	1:1	
Hillsdale	604	386,560	245	1		437	1:1	
Huron	824	527,360	5			75	1:10	
Ingham	560	358,400	9			17	1:33	
Ionia	578	369,920				79	1:7	
Iosco	563	360,320				26	1:25	
Isabella	573	366,720	653	161		470	2:1	
Jackson	717	458,880	135	3		243	1:2	
Kalamazoo	580	371,200	18			106	1:5	
Kalkaska	573	366,720	22	7		44	1:8	
Kent	868	555,520	461	6	1	346	1:1	
Lake	577	369,280	32	1	8	143	1:3	

TABLE 18. CUMULATIVE WELL COMPLETIONS BY COUNTY THROUGH 1968 Continued (Sheet 2 of 2)

Lapeer	662	423,680	20			59	79	1:8
Leeelanau	374	239,360				9	9	1:42
Lenawee	760	486,400	3	70		102	175	1:4
Livingston	583	373,120	1	19	55	76	151	1:4
Luce	929	594,560				2	2	1:465
Mackinac	1,081	691,840				2	2	1:541
Macomb	481	307,840	5	44	12	264	325	1:2
Manistee	568	363,520		1		29	30	1:19
Mason	505	323,200	124	7		278	409	1:1
Mecosta	570	364,800	126	196	183	391	896	2:1
Midland	523	334,720	899	2		273	1,176	2:1
Missaukee	572	366,080	175	63	102	200	540	1:1
Monroe	564	360,960	45			112	157	1:4
Montcalm	720	460,800	378	221	181	570	1,350	2:1
Montmorency	567	362,880	3	1		17	21	1:27
Muskegon	519	332,160	442	119	70	379	940	2:1
Newaygo	867	554,880	199	46		371	686	1:1
Oakland	899	575,360	6	4		62	72	1:13
Oceana	541	346,240	327	7		489	823	2:1
Ogemaw	580	371,200	503	21	1	167	692	1:1
Osceola	585	374,400	341	114	127	352	934	2:1
Oscola	568	363,520	2			10	12	1:47
Otsego	538	344,320	1	26		31	58	1:13
Ottawa	572	366,080	473	19	2	489	983	2:1
Presque Isle	678	433,920				10	10	1:68
Roscommon	573	366,720	180	14		103	297	1:2
Saginaw	814	520,960	378	2		173	553	1:1
Sanilac	961	615,040				50	50	1:20
Schoolcraft	1,229	786,560				2	2	1:615
Shiawassee	540	345,600	8			53	61	1:9
St. Clair	751	480,640	228	173	21	756	1,178	2:1
St. Joseph	518	331,520	151	1		15	15	1:35
Tuscola	820	524,800	722			102	254	1:3
Van Buren	615	393,600	10	18	5	995	1,717	3:1
Washtenaw	723	462,720	12	24	16	99	133	1:6
Wayne	625	400,000	1			54	131	1:5
Wexford	570	364,800	1	4		54	59	1:10
Totals:		11,114	1,792	1,378	36	13,263	27,583	

Total includes gas storage, observation, salt water disposal, water injection wells, and brine wells.

TABLE 19. PERMITS, DISCOVERIES, WELL COMPLETIONS, WELLS AT END OF YEAR, 1968 AND PRIOR YEARS (Sheet 1 of 2)

Year	Permits Issued	Classification of Well Completions					Total Completions	Fields or Pools Discovered		Wells at End of Year									
		Oil Wells		Service Wells				Oil Wells	Gas Wells	Oil Wells	Gas Wells	GS	Inj.*	P.M.	LPG*				
		Oil Wells	Gas Wells	GS-OBS-SWD	LPG	Dry Holes													
1925	0	3				3	1												
1926	0	89				105	1												
1927	16	218	3			267	1	1											
1928	283	79	30			158	1												
1929	576	324	22			483	1												
1930	257	154	19			331	2	3											
1931	111	59	17			128	1	1											
1932	184	109	10			183	1		634										
1933	429	223	10			318	3	1	645										
1934	444	272	47			469	3	2	831										
1935	700	319	101			641	1	5	977										
1936	777	333	206			807	6	5	1,167										
1937	973	622	66			985	6	1	1,360										
1938	996	580	27			1,018	17	2	1,778										
1939	1,465	845	56			1,479	8	2	2,141										
1940	1,121	557	59			1,181	8	13	2,684										
1941	1,044	441	97			951	7	8	2,928										
1942	570	297	74			682	14	4	3,158										
1943	627	233	47			635	12	8	3,324										
1944	741	246	64			710	10	2	3,386										
1945	755	271	57	6		801	11	11	3,433										
1946	822	223	53	86		823	19	10	3,536										
1947	886	318	43	148		896	10	4	3,520										
1948	918	371	32	77		917	10	5	3,532										
1949	999	439	22	73		1,007	21	2	3,554										
1950	901	336	28	47		884	18	4	3,818										
1951	744	227	20	43	1	757	16	6	3,954										
1952	694	261	30	51	2	714	14	5	3,911										
1953	824	258	18	110	1	747	11	6	3,979										
1954	573	214	15	2	2	571	18	18	4,089										
1955	484	204	13	1	1	291	12	2	4,167										
1956	476	196	12	28		227	12	2	4,089										
1957	461	176	40	35	3	207	12	5	4,167										
1958	481	166	20	36	4	227	10	7	4,167										
1959	727	257	47	72	4	272	8	7	4,089										
1960	904	372	19	79	1	441	7	4	4,089										
1961	849	207	57	74	3	476	13	10	4,555										
1962	711	148	62	53	4	474	5	7	4,619										
1963	704	135	72	56	2	384	7	4	4,603										
1964	583	82	48	126		376	6	4	4,598										
1965	494	53	34	107		291	6	7	4,588										
1966	430	56	45	11	2	290	8	3	4,368										
1967	405	69	38	26		287	8	2	4,315										
1968	378	70	12	30*	6	251	9	4	4,273										

Incomplete records from 1925 through 1930

\*LPG injection and extraction wells in LPG storage facilities.

TABLE 19. PERMITS, DISCOVERIES, WELL COMPLETIONS, WELLS AT END OF YEAR, 1968 AND PRIOR YEARS Continued (Sheet 2 of 2)

1955	484	204	13	1	1	291	12	2	4,223										
1956	476	196	12	28		227	12	2	4,191										
1957	461	176	40	35	3	207	12	5	4,233										
1958	481	166	20	36	4	227	10	7	4,201										
1959	727	257	47	72	4	272	8	7	4,327										
1960	904	372	19	79	1	441	7	4	4,555										
1961	849	207	57	74	3	476	13	10	4,619										
1962	711	148	62	53	4	474	5	7	4,603										
1963	704	135	72	56	2	384	7	4	4,598										
1964	583	82	48	126		376	6	4	4,588										
1965	494	53	34	107		291	6	7	4,368										
1966	430	56	45	11	2	290	8	3	4,315										
1967	405	69	38	26		287	8	2	4,273										
1968	378	70	12	30*	6	251	9	4	4,372										

\*Includes 2 wtr. Inj. and 1 BDW



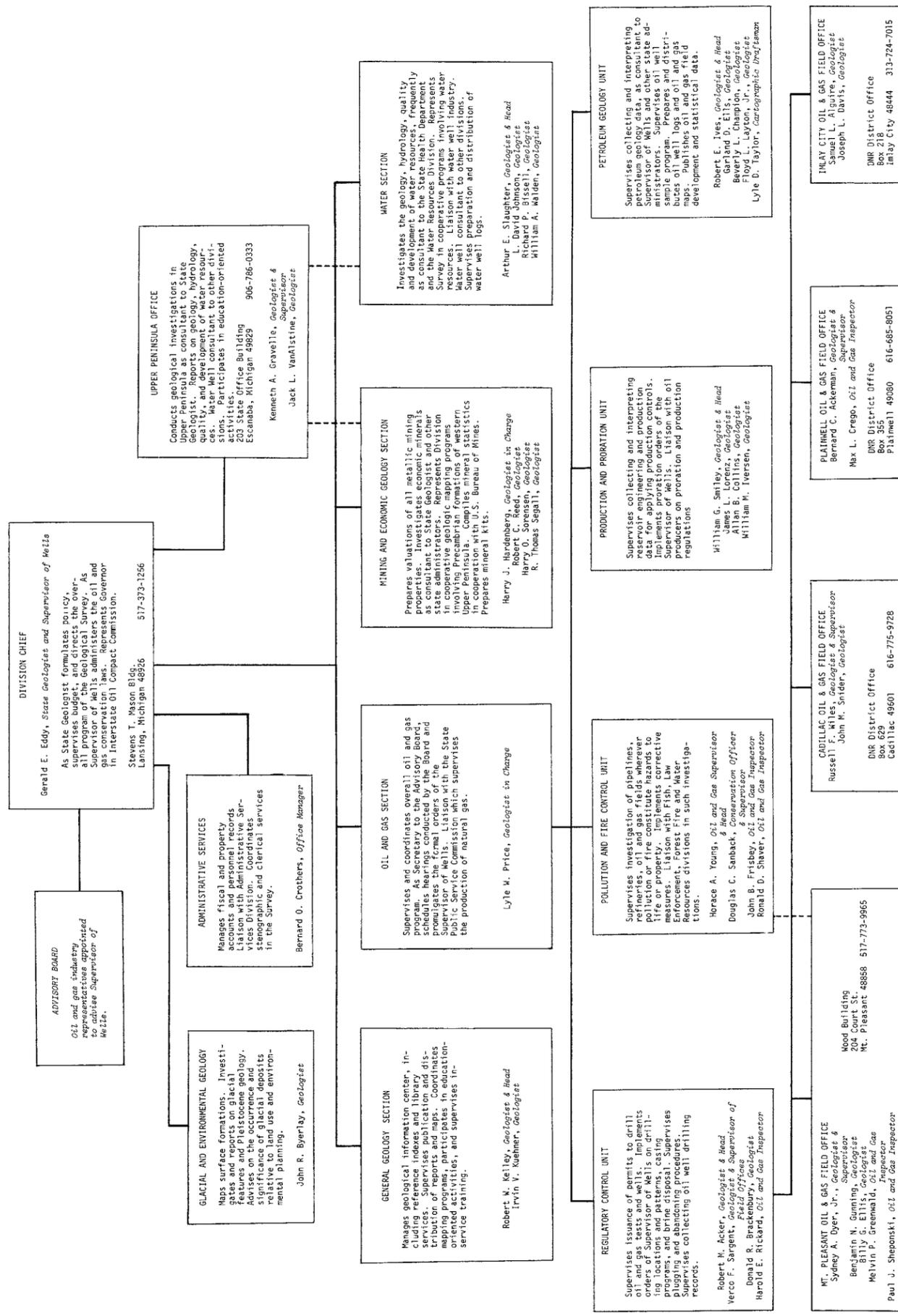
## INDEX

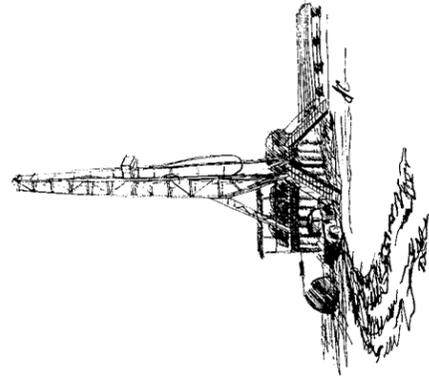
ABBREVIATIONS. . . . .	Page 72
ADVISORY BOARD, OIL AND GAS. . . . .	Inside front cover
AREA OF COUNTIES	
Acres. . . . .	64-65
Square miles . . . . .	64-65
BRINE	
Disposal method or use . . . . .	21, 49, 63
Production by field. . . . .	21-45
--by formation . . . . .	21-45
--by year. . . . .	63
COMMISSION OF NATURAL RESOURCES, MEMBERS	
. . . . .	Inside front cover
COMPLETIONS, NUMBER OF	
--by counties in 1968. . . . .	6-7
--by counties through 1968 . . . . .	64-65
--by year, 1968 and prior years. . . . .	66-67
Development wells in 1968. . . . .	5
Exploratory wells in 1968. . . . .	5
Gas storage wells in 1968. . . . .	5
DEEP TESTS IN 1968 . . . . .	11-16
DISCOVERY WELLS IN 1968	
Number of fields or pools discovered by years . . . . .	66-67
DRILLED FOOTAGE IN 1968. . . . .	5
EXPLORATORY WELLS DRILLED IN 1968, NUMBER OF	
--by district. . . . .	18
--by month . . . . .	18
FIELDS	
Gas & oil, active, abandoned, locations . . . . .	21-45
General distribution (2 insert maps)	
Storage, gas . . . . .	46
Storage, gas, undeveloped. . . . .	47
Storage, gas, location . . . . .	46
GAS, NATURAL	
Production in 1968 . . . . .	8
--by counties in 1968. . . . .	10
--by counties, cumulative. . . . .	62
--by districts in 1968 . . . . .	8
--by fields, cumulative. . . . .	21-45
--by geologic formation. . . . .	59-60

(Gas, Natural continued)	Page
--by months in 1968. . . . .	8
--by years . . . . .	59-61
--oil well gas . . . . .	21-45
Valuation in 1968. . . . .	8
Imports for. . . . .	8
INJECTION WELLS. . . . .	49
LIQUID PETROLEUM GAS	
Number of LPG storage wells. . . . .	64-65
Primary storage facilities . . . . .	52
Production or extraction . . . . .	50-51
OIL	
Oil and Gas Hearings, Number . . . . .	17
Oil gravity. . . . .(see oil field tables)	
Oil imports and exports. . . . .	8-9
Production	
--by counties in 1968. . . . .	10
--by districts in 1968 . . . . .	8
--by fields. . . . .	21-45
--by geologic formation. . . . .	58
Valuation in . . . . .	8
PERMITS	
Issued in 1968 . . . . .	3
--by districts in 1968 . . . . .	5
--by months in 1968. . . . .	18
--by years . . . . .	66-67
POOLS, OIL AND GAS (See fields)	
REFINERIES . . . . .	53
STATE ACREAGE UNDER LEASE. . . . .	16
STRATIGRAPHIC CHART. . . . .	68
WELL DENSITY BY COUNTY . . . . .	64-65

## ABBREVIATIONS

A.A.P.G.	American Assoc. Petrol. Geol.	Marshall Formation
A.P.I.	American Petroleum Institute	Thousand Cubic Feet
(A) I.P.	(Acid) Initial Production or Potential	Thousand Cubic Feet Gas Per Day
A-1 Carb.	A-1 Carbonate	Michigan formation
A-2 Carb.	A-2 Carbonate	Mississippian
Bb1s.	Barrels	Mt. Simon ss.
B.B.	Bois Blanc formation	New Field Wildcat
B.D.	Brine Disposal	(Natural) Initial Production or Potential
BWD	Brine Disposal Well	Niagaran
BOPD	Barrels Oil Per Day	Nontechnical
B.R.	Black River	Observation Well
Camb.	Cambrian	Out Post Well
"Camb."	Unidentified Cambrian	Ordovician
Cat.	Cataract formation	Old Well Drilled Deeper
c.f.p.b.	Cubic feet per barrel	Prairie du Chien formation
C.H.	Cabot Head formation	Pennsylvanian
Cinn.	Cincinnati	Pilot Water
Cl.	Clinnton formation	Pressure Maintenance
Col.	Coldwater formation	Producing Formation
Compl.	Completion	Reed City formation
Coop.	Cooperative	Reworked Well
D & A	Dry and Abandoned	Richfield formation
Dev.	Devonian	Saginaw formation
D.R.	Detroit River formation	Salina-Niagaran
D.R. SZ	Detroit River Sour Zone	Shut Down
Dres.	Dresbach formation	Seismograph
Dd., DD.	Dundee	Show Oil and Gas
Dd.-R.C.	Dundee-Reed City	St. Peter formation
DPT	Deeper Pool Test	Michigan Stray formation
E.C.	Eau Claire formation	Subsurface geology
Explor.	Exploratory	Service Well
Fran.	Franconia formation	Salt Water Disposal
Geo. Test	Geological Test	Sylvania formation
G.O.R.	Gas-Oil Ratio	Sour Zone (In Detroit River)
Grav.	Gravity Gravimeter	Thickness
GS	Gas Storage	(Treatment) Initial Production or Potential
GSW	Gas Storage Service Well	Traverse
Gw	Glenwood	Trempealeu formation
Incs.	Includes	Trenton-Black River
Inj.	Injection	Unitized
L.P.G.	Liquid Petroleum Gas	

 TECHNICAL STAFF and ORGANIZATION CHART  
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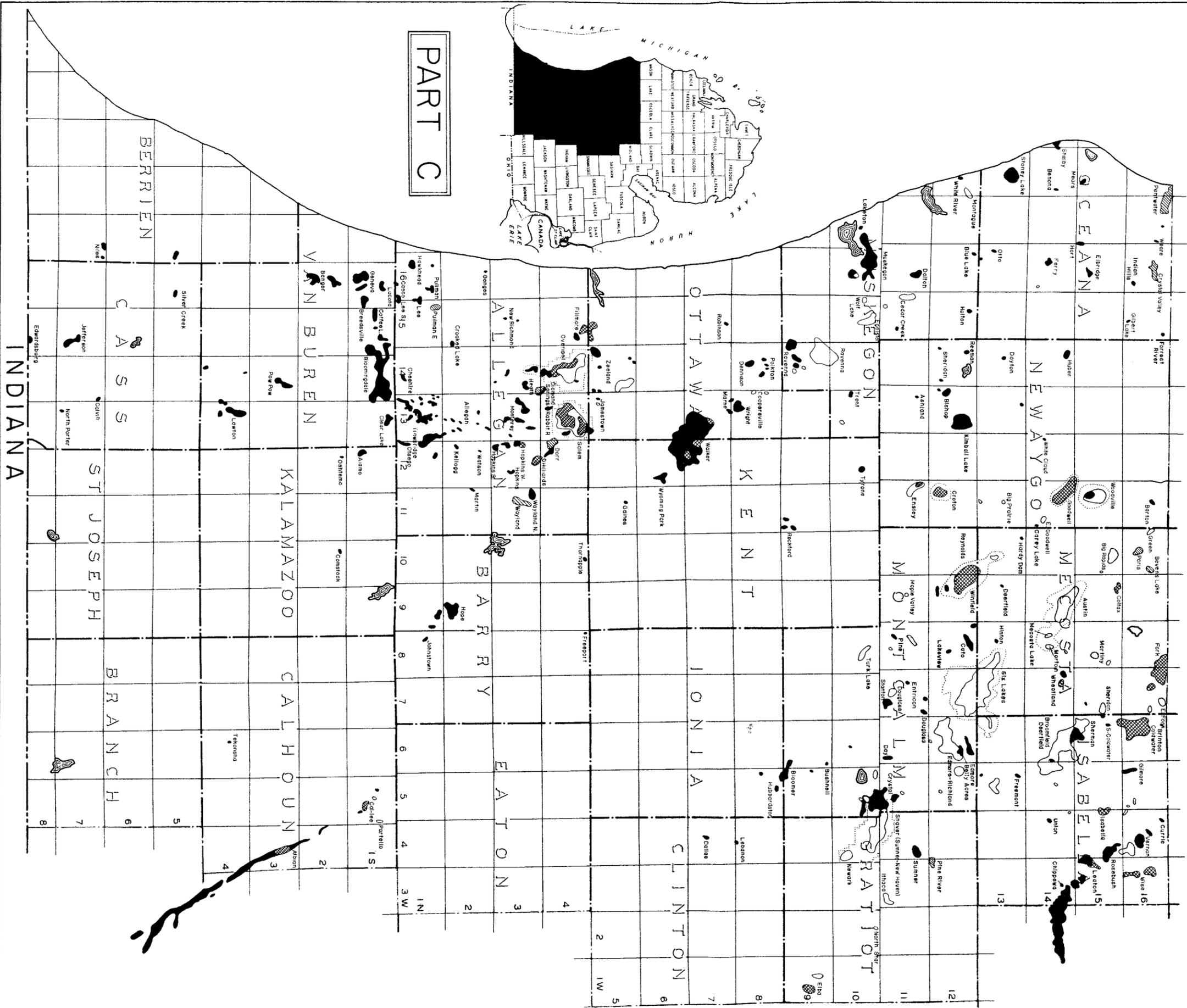


# MICHIGAN OIL AND GAS FIELDS SOUTHERN PENINSULA

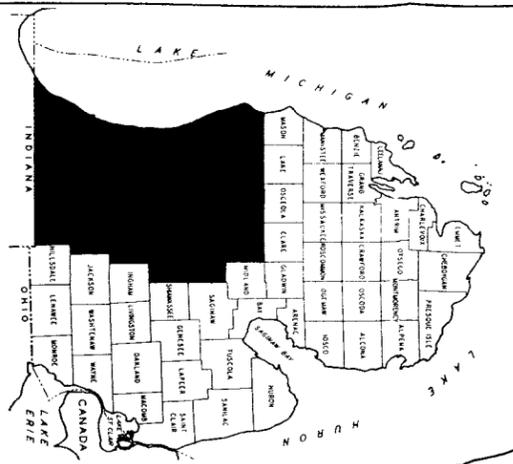
## EXPLANATION

- OIL FIELDS
- SINGLE POOL
- GAS FIELDS
- Falmouth
- Orient
- General outline of storage area
- 2 OR MORE POOLS
- DEVELOPED GAS STORAGE AREA
- 2 OR MORE OIL AND GAS POOLS
- Croyton
- Headquarters

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



PART C



# MICHIGAN OIL AND GAS FIELDS SOUTHERN PENINSULA



## EXPLANATION

- OIL FIELDS
- SINGLE POOL
- Beaver Creek
- 2 OR MORE POOLS
- COMBINATION OIL AND GAS FIELDS
- 2 OR MORE OIL AND GAS POOLS
- Gas Fields
- Headquarters
- Cuyler
- Falmouth
- DEVELOPED GAS STORAGE AREA
- General outline of storage area

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

PART D

