

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION  
OF THE STATE OF MONTANA

# Oil and Gas Conservation Division

Thomas L. Judge, Governor



ANNUAL REVIEW FOR THE YEAR 1974

Relating to

**OIL AND GAS**

Volume 18

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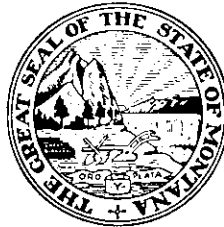
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## Annual Review for the Year 1974 Volume 18

### INTRODUCTION

Oil production in Montana during 1974 totaled 34,553,962 barrels. This is approximately a one-fifth percent decline in production as compared with 1973. The following factors are responsible for the maintaining of production in 1974 at essentially the 1973 level.

1. The effect of secondary recovery programs at Bell Creek and Fred and George Creek Fields where 1974 production increased by 1,320,423 barrels over that of 1973.
2. The discovery of additional reserves at Little Wall Creek, Sioux Pass and Sumatra Fields where 1974 production increased by 593,122 barrels of oil over that produced in 1973.
3. The Howard Coulee, Sheepherder, Lone Butte, Big Muddy Creek, Rosebud, Gumbo Ridge and Northeast Raymond Fields, all discovered in 1974 added 143,720 barrels of oil to 1974 production. Production from two zones was established at Big Muddy Creek and Northeast Raymond Fields.

The discoveries in central Montana at Gumbo Ridge and Sheepherder Fields are highly significant. The discovery of commercial Tyler sand accumulation at Gumbo Ridge Field, 12 miles northeast of Sumatra Field, is important in that it demonstrates that production from Tyler sands is possible in areas removed from the known producing trends.

The discovery of Tyler A sand production at Sheepherder Field, located on the downthrown side of a long, east-west trending fault that characterizes the north flank of Ragged Point Field, points to the need for intensive exploration of Tyler sands along the downthrown side of this fault north of Stensvad and Sumatra Fields.

Production of natural gas decreased from 57,740,000 MCF in 1973 to 50,391,667 MCF in 1974. This was a decrease of 7,348,333 MCF and was due primarily to decreased production at Tiger Ridge Field, down 9,677,470 MCF from 1973.

There were 21 new gas discoveries and 7 new oil discoveries completed during 1974. Of 449 development wells drilled, 179 found gas and 58 found oil. Total wells drilled in 1974 was 742 compared to 719 drilled in 1973. There were 13 new pool discoveries completed during 1974.

Exploratory drilling for oil and gas decreased by 29% in 1974 as compared to 1973, while development well drilling increased by 32% in 1974. Approximately 339,000 more feet of hole was drilled in 1974 than in 1973.

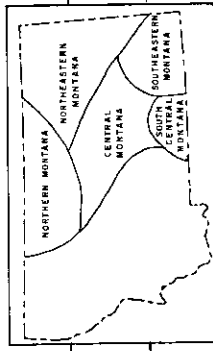
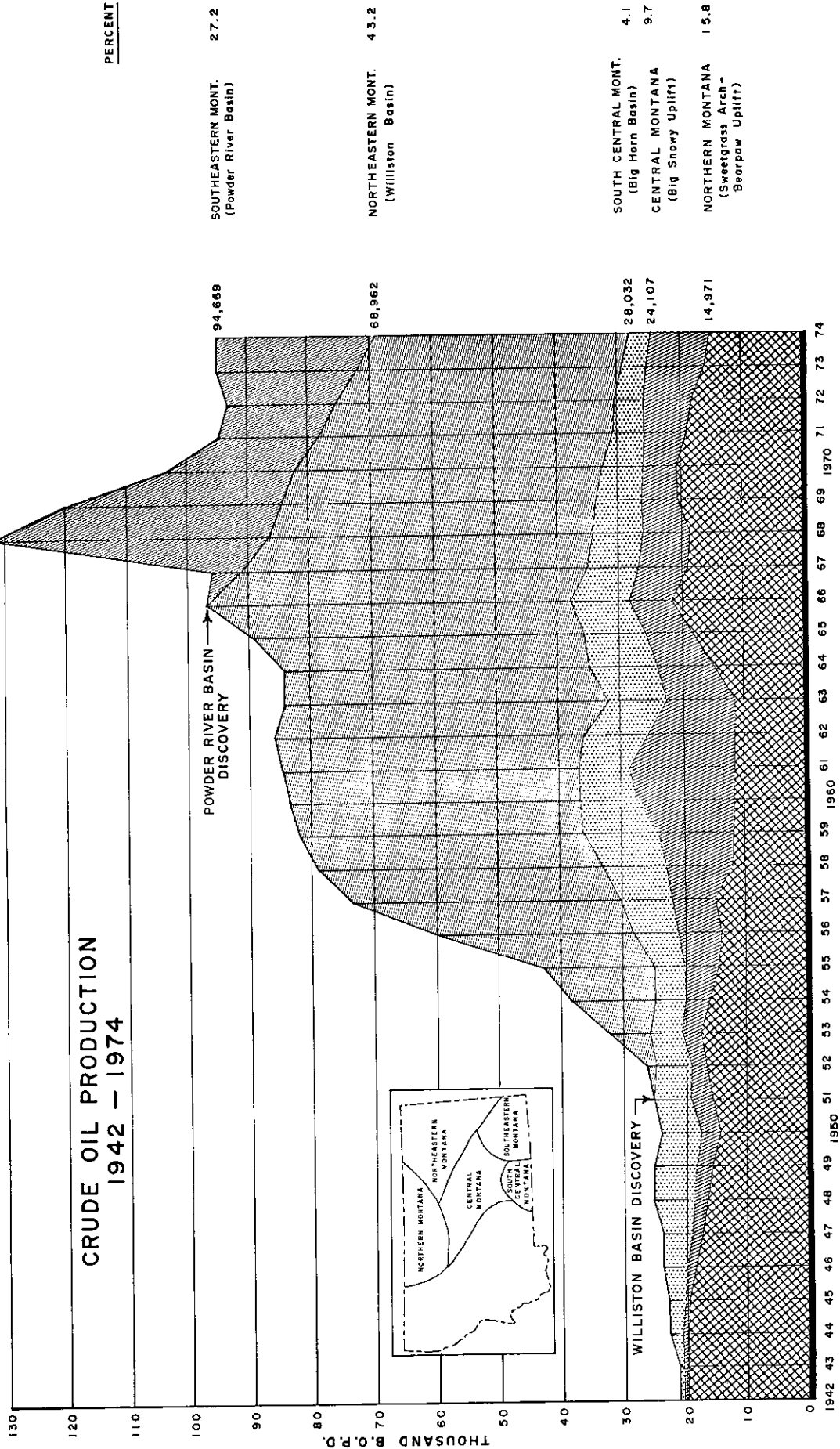
### FIVE YEAR SUMMARY

	1970	1971	1972	1973	1974
Production, Northern Montana—Bbbls. ....	7,680,831	7,292,476	6,646,908	5,948,826	5,464,319
South Central—Bbbls. ....	2,329,187	2,028,304	1,742,749	1,515,088	1,432,528
Central—Bbbls. ....	1,915,273	2,274,124	2,817,045	3,238,967	3,334,759
Williston Basin—Bbbls. ....	18,110,147	17,042,703	16,361,771	15,735,703	14,939,292
Powder River Basin—Bbbls. ....	7,843,259	5,961,116	6,335,666	8,181,598	9,383,064
TOTAL .....	37,878,697	34,598,723	33,904,139	34,620,182	34,553,962
No. of Producing Wells, Northern Montana .....	1,806	1,768	1,856	1,708	1,802
South Central.....	92	96	83	83	86
Central.....	200	212	224	245	267
Williston Basin.....	743	748	706	709	712
Powder River Basin.....	371	321	265	248	233
TOTAL.....	3,212	3,145	3,134	2,993	3,100
Average Daily Production/Well—BOPD,					
Northern Montana.....	11.6	11.3	9.8	9.5	8.3
South Central.....	69.3	57.9	57.4	50.0	45.6
Central.....	26.2	29.4	34.4	36.2	34.2
Williston Basin.....	66.8	62.4	63.3	60.8	57.4
Powder River Basin.....	57.9	50.9	65.3	90.4	110.3
STATE AVERAGE.....	32.3	30.1	29.6	31.7	30.5
Development Wells Drilled, Oil Wells.....	60	49	79	46	58
Gas Wells.....	30	36	97	165	179
Dry Holes.....	63	34	87	100	212
TOTAL.....	153	119	263	311	449
Exploratory Wells Drilled, Oils Wells.....	12	3	7	6	7
Gas Wells.....	11	22	19	36	21
Dry Holes.....	272	323	435	366	265
TOTAL.....	295	348	461	408	293
TOTAL WELLS DRILLED .....	488	467	724	719	742
TOTAL FOOTAGE DRILLED .....	1,969,583	1,735,222	2,300,075	1,834,288	2,173,519
AVERAGE DEPTH OF ALL WELLS.....	4,396	3,716	3,177	2,551	2,929

**SUMMARY OF DRILLING BY COUNTIES — 1974  
STATE OF MONTANA**

County	Wildcats				Development				Total Wells	Footage Drilled	Average Depth
	Dry	Oil	Gas	Dry	Oil	Gas	Wells				
								Dry			
Big Horn.....	6	0	0	0	0	0	6	23,686	3,948		
Blaine.....	31	0	6	38	3	27	105	208,694	1,987		
Carbon.....	9	0	0	1	2	1	13	57,895	4,453		
Carter.....	6	0	1	0	0	0	7	10,420	1,489		
Cascade.....	2	0	0	0	0	0	2	4,697	2,349		
Chouteau.....	12	0	0	17	0	18	47	94,163	2,003		
Custer.....	2	0	0	0	0	1	3	7,765	2,588		
Daniels.....	1	0	0	0	0	0	1	9,211	9,211		
Dawson.....	3	0	0	0	0	0	3	21,443	7,147		
Fallon.....	0	0	0	2	2	0	4	38,054	9,514		
Fergus.....	11	0	1	2	0	0	14	30,483	2,177		
Garfield.....	10	0	0	0	0	0	10	59,783	5,978		
Glacier.....	2	0	0	9	10	2	23	69,697	3,030		
Golden Valley.....	4	0	0	0	0	0	4	11,694	2,924		
Hill.....	16	0	1	43	0	27	87	154,550	1,776		
Lewis & Clark.....	2	0	0	0	0	0	2	14,302	7,152		
Liberty.....	7	0	2	14	1	9	33	99,154	3,005		
McCone.....	9	0	0	0	0	0	9	72,913	8,101		
Musselshell.....	20	2	0	26	13	0	61	234,839	3,850		
Petroleum.....	3	0	0	2	1	0	6	17,586	2,931		
Phillips.....	25	0	4	16	0	69	114	185,362	1,626		
Pondera.....	3	0	2	3	1	0	9	22,532	2,504		
Powder River.....	1	0	0	0	0	1	2	8,940	4,470		
Richland.....	4	1	0	0	2	0	7	88,054	12,579		
Roosevelt.....	9	1	0	0	1	0	11	106,685	9,699		
Rosebud.....	20	2	0	8	10	0	40	194,409	4,860		
Sheridan.....	1	1	0	1	2	0	5	38,900	7,780		
Stillwater.....	5	0	0	4	0	12	21	47,992	2,285		
Sweetgrass.....	1	0	0	0	0	0	1	5,686	5,686		
Teton.....	11	0	0	2	4	0	17	44,677	2,628		
Toole.....	12	0	4	19	4	9	48	95,792	1,996		
Treasure.....	1	0	0	0	0	0	1	2,395	2,395		
Valley.....	10	0	0	4	0	3	17	49,667	2,922		
Wheatland.....	1	0	0	0	0	0	1	1,750	1,750		
Wibaux.....	1	0	0	0	2	0	3	29,580	9,860		
Yellowstone.....	4	0	0	1	0	0	5	10,069	2,014		
<b>TOTALS.....</b>	<b>265</b>	<b>7</b>	<b>21</b>	<b>212</b>	<b>58</b>	<b>179</b>	<b>742</b>	<b>2,173,519</b>	<b>2,929</b>		

# CRUDE OIL PRODUCTION 1942 - 1974



POWDER RIVER BASIN  
DISCOVERY

WILLISTON BASIN DISCOVERY

130  
120  
110  
100  
90  
80  
70  
60  
50  
40  
30  
20  
10  
0

THOUSAND B.O.P.D.

1942 43 44 45 46 47 48 49 1950 51 52 53 54 55 56 57 58 59 1960 61 62 63 64 65 66 67 68 69 1970 71 72 73 74

**GAS PRODUCTION DATA — 1974**

Field	County	Producing Formations	1974 Production M.C.F.
<b>Natural Gas:</b>			
Big Coulee .....	Golden Valley & Stillwater .....	Lakota & Morrison .....	1,070,160
Black Coulee .....	Blaine .....	Eagle .....	194,030
Black Jack .....	Liberty .....	Sunburst, Swift & Blackleaf .....	323,470
Bowdoin .....	Phillips & Valley .....	Bowdoin & Phillips .....	4,925,075
Bowes .....	Blaine .....	Eagle .....	372,346
Canadian Coulee, North .....	Hill & Liberty .....	Sawtooth .....	211,178
Cedar Creek .....	Fallon .....	Judith River & Eagle .....	9,299,045
Cut Bank & Reagan .....	Glacier & Toole .....	Cut Bank & Madison .....	2,350,799
Dry Creek .....	Carbon .....	Eagle, Frontier & Greybull .....	406,956
Ethridge .....	Toole .....	Bow Island & Swift .....	438,078
Flat Coulee .....	Liberty .....	Kbl, Ksb, Jsw, Kbi .....	99,694
Gold Butte .....	Toole .....	Bow Island .....	91
Grandview .....	Liberty .....	Bow Island & Madison .....	98,578
Hardin .....	Big Horn .....	Frontier .....	31 327
Keith Block .....	Liberty .....	Bow Island & Sawtooth .....	806,748
Kevin-Sunburst .....	Toole .....	Sunburst & Sun River .....	387,896
Kicking Horse .....	Toole .....	Sun River .....	140,791
Lake Basin .....	Stillwater .....	Kf, Ke, Kvi, Ktc .....	983,843
Liscom Creek .....	Custer .....	Shannon .....	511,067
Middle Butte .....	Toole .....	Blackleaf .....	21,360
Mt. Lilly .....	Liberty .....	Madison .....	115,714
Plevna .....	Fallon .....	Judith River .....	69,616
Rapelje .....	Stillwater .....	Judith River, Claggett, Eagle, & Virgelle .....	78,363
Sherard .....	Blaine & Chouteau .....	Eagle .....	2,537,311
South Devon .....	Toole .....	Bow Island .....	237,299
Tiger Ridge .....	Blaine & Hill .....	Judith River & Eagle .....	19,452,541
Trail Creek .....	Liberty & Toole .....	Sunburst .....	72,367
Utopia .....	Liberty .....	Ellis, Sawtooth, & Madison .....	269,852
West Butte .....	Toole .....	Sawtooth & Madison .....	555,715
Whitlash .....	Liberty .....	Bow Island, Kootenai, & Swift .....	504,856
<b>Associated Gas:</b>			
Bell Creek .....	Powder River .....	Muddy .....	545,078
Brush Lake .....	Sheridan .....	Red River .....	2,893
Cabin Creek .....	Fallon .....	Interlake & Red River .....	743,336
Elk Basin .....	Carbon .....	Tensleep .....	601,687
Fairview .....	Richland .....	Red River .....	590,687
Fred & George Creek .....	Toole .....	Sunburst & Swift .....	22,318
Pine .....	Dawson, Prairie, Fallon & Wibaux .....	Interlake & Red River .....	571,855
Richland Area .....	Richland & Roosevelt .....	Mmc, Dw, Si, Orr .....	585,427
Tule Creek .....	Roosevelt .....	Nisku .....	162,220
TOTAL ALL FIELDS .....			50,391,667

**REFINING — 1974**

	Year 1974 Total Bbls.
Big West Oil Company	1,458,882
Continental Oil Company	16,751,706
Diamond Asphalt Company	0
Farmers Union Central Exchange, Inc.	11,192,158
Exxon Company	14,367,027
Jet Fuel Refinery	0
Phillips Petroleum Company	2,136,263
Spruce Oil Company	613,210
Westco Refining Company	1,533,530
	48,052,776

**Refining Five Year Comparison**

1970	1971	1972	1973	1974
42,330,220	44,996,860	48,464,721	50,967,206	48,052,776

## SUMMARY OF SECONDARY RECOVERY PROJECTS - JANUARY 1, 1975

Field, Formation	Operator	Type of Project	Injection Pattern	Date Injections Commenced	Cumulative Injections 1000's Bbls. or MCF	Dec. 1974 Avg. Daily Inj. Rate Bbls. or MCF	No. of Injection Wells	Source of Injection Media and Remarks
Ash Creek, Shannon	McDermott	Waterflood	Peripheral	10-15-64	961	148	3	Parman
Bell Creek, Unit "A", Muddy	Gary	Waterflood	Peripheral	7- 1-70	50,493	28,668	25	Madison
Bell Creek, Unit "B", Muddy	Gary	Waterflood	Peripheral	11- 1-70	14,588	10,513	12	Madison
Bell Creek, Ranch Creek, Muddy	Gary	Waterflood	Peripheral	7- 1-71	17,408	12,038	13	Madison
Bell Creek, Unit "C", Muddy	Gary	Waterflood	Peripheral	12- 1-71	6,105	6,516	6	Madison
Bell Creek, Unit "D", Muddy	Gary	Waterflood	Peripheral	8-72	8,555	6,809	14	Madison
Bell Creek, Unit "D", Muddy	Gary	Waterflood	Peripheral	8-72	5,708	6,812	15	Madison
Big Well, Tyler B	Texaco, Inc.	Waterflood	Peripheral	8-20-66	14,438	3,547	2	Produced, Amsden & Tyler
Border, New, Cut Bank	BGG Co.	Waterflood	Random	6- 1-73	94	171	1	Madison
Border, Old, Cut Bank	BGG Co.	Waterflood	Random	6- 1-73	292	609	4	Madison
Bowes, Sawtooth	Texaco, Inc.	Waterflood	Random	5-23-61	3,407	456	3	Madison
Cabin Creek, Siluro-Ord.	Shell	Waterflood	Semi-Peripheral	6-12-59	131,520	39,000	31	Produced & Fox Hills
Cat Creek, East Dome, Swift	Hoss	Waterflood	Semi-Peripheral	7-30-70	171	302	4	Third Cat Creek
Cat Creek, 1st & 2nd CC (Unit 1)	Farmers Union	Waterflood	Semi-Peripheral	10-10-62	9,616	2,258	7	Third Cat Creek
Cat Creek, 1st & 2nd CC (Unit 2)	Farmers Union	Waterflood	Semi-Peripheral	12- 1-59	17,093	715	5	Third Cat Creek
Cat Creek, Mosby, Swift	Farmers Union	Waterflood	Random	7-67	2,943	1,115	5	Third Cat Creek
Cat Creek, Mosby, Amsden	Farmers Union	Waterflood	Random	6- 1-71	38	18	1	Third Cat Creek
Cut Bank, Marina, Cut Bank	BGG Co.	Waterflood	5-Spot	6-72	904	1,159	9	Madison
Cut Bank, Tweedy, Cut Bank	BGG Co.	Waterflood	5-Spot	6-72	589	429	4	Madison
Cut Bank NE, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	6- 2-63	12,587	1,235	9	Madison
Cut Bank NW, Cut Bank	Phillips	Waterflood	5-Spot	1-30-62	13,808	1,660	15	Madison
Cut Bank SE, Cut Bank	Union	Waterflood	5-Spot	5-63	27,486	5,910	49	Madison
Cut Bank SW, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	4-62	46,346	8,821	44	Madison
Cut Bank SW, Cut Bank	Phillips	Waterflood	5-Spot	9-62	62,810	18,376	107	Madison
Cut Bank, Lander A	Phillips	Waterflood	Random	4-65	1,335	223	2	Madison
Cut Bank, Lander	Texaco, Inc.	Waterflood	Random	7-64	6,260	1,330	6	Eagle
Cut Bank, McGuinness, Moulton	Union	Waterflood	Random	12-62	3,307	935	1	Madison
Cut Bank, Cut Bank	Tesoro	Waterflood	5-Spot	9- 1-71	1,937	2,645	18	Madison
Cut Bank, Two Medicine, Cut Bank	Miami	Waterflood	Random	12-67	36,197	8,937	98	Madison
Cut Bank, West Wilcox, Moulton	Decalta	Waterflood	Random	2-71	698	600	0	Madison-Shut In 7-1-74.
Cut Bank, Moulton, Moulton	Union	Waterflood Gas Injection	Random Random	11-69 5-15-71	13,433 Shut-In	4,727 --	7 --	Water inj. into Madison Gas inj. into Moulton
Darling, State, Moulton	BGG Co.	Waterflood	Random	2-67	2,168	900	1	Madison
Darling, NE Unit, Moulton	Ralph Fair	Waterflood	Random	2-68	3,923	1,214	4	Produced Water
Darling, South Swenson, Moulton	BGG Co.	Waterflood	Random	2-67	6,713	1,513	3	Madison
Dwyer, Ratcliffe	Phillips	Waterflood	Peripheral	10-68	1,172	572	5	Madison
Elk Basin, Embar-Tensleep	Amoco	Gas Injection	Random	12-72	2,245	312	1	Purchased Gas
Elk Basin, Frontier	Amoco	Waterflood	Random	1926	1,821	1,855	2	Madison
Elk Basin, Unit 2, Tensleep	Amoco	Waterflood	Random	1949	1,843	503	1	Produced Water
Elk Basin, Madison	Amoco	Waterflood	Peripheral	1962	49,298	16,496	8	Produced Water
Elk Basin NW, Tensleep	Atlantic-Richfield	Waterflood	Semi-Peripheral	5-67	2,844	2,409	2	Madison
Fairview, NW Unit, Red River	Superior	Gas Injection	Crestal	10-25-67	2,065	1,650	1	Purchased Gas
Flat Coulee, Swift	Cardinal	Waterflood	Peripheral	2- 1-72	2,141	1,941	15	Eagle
Flat Lake, Ratcliffe	Chevron	Waterflood	Random	6- 1-71	8,313	5,510	11	Produced Water
Frannie, Tensleep	Continental	Waterflood	Random	9-70	1,405	934	1	Produced Water
Fred & George, Sunburst	Fulton	Waterflood	Random	7-70	9,578	6,449	2	Madison & Eagle
Gas City, Red River	Shell	Waterflood	Semi-Peripheral	10-31-69	6,034	3,075	7	Mission Canyon
Goose Lake, Ratcliffe	Cotton Petroleum	Waterflood	Semi-Peripheral	1-73	1,656	4,532	4	Produced Water
Jim Coulee, Tyler B	McAlester Fuel	Waterflood	Semi-Peripheral	6- 1-72	2,365	3,114	4	Third Cat Creek
Keg Coulee, NW Unit, Tyler B	Ada Oil	Waterflood	Semi-Peripheral	8-31-66	4,572	1,490	2	Madison
Keg Coulee, East, Tyler	Continental	Waterflood	Semi-Peripheral	12-24-69	3,230	908	3	Third Cat Creek
Keg Coulee, South, Tyler	BGG Co.	Waterflood	Semi-Peripheral	1- 1-70	1,369	1,347	2	Madison
Kelley, Tyler	McAlester Fuel	Waterflood	Random	7-69	1,283	610	3	Third Cat Creek
Kevin-Sunburst, Madison	Lon Cromley	Waterflood	Random	9-63	917	250	0	Madison-Shut-In 7-1-74.
Kevin-Sunburst, Madison	BGG Co.	Waterflood	Random	8-64	5,033	2,840	6	Madison
Kevin-Sunburst, Madison	Texaco, Inc.	Waterflood	Semi-Peripheral	8-64	7,889	1,309	10	Madison
Little Beaver, Red River	Shell	Waterflood	Semi-Peripheral	8- 7-66	20,442	7,680	13	Madison
Little Beaver East, Red River	Shell	Waterflood	Semi-Peripheral	4-65	8,508	4,221	6	Madison
Lookout Butte, Red River	Shell	Waterflood	Semi-Peripheral	4-67	16,628	6,430	12	Minnelusa
Lookout Butte, Madison	Shell	Waterflood	Semi-Peripheral	2-69	1,465	923	1	Minnelusa
Monarch, Silurian	Shell	Waterflood	Random	12- 1-73	30	967	0	Sil.-Ord. - Shut-in.
Pennel, Red River	Shell	Waterflood	Random	6-28-69	34,243	25,061	45	Dakota and Produced
Pine, South, Red River	Shell	Waterflood	Semi-Peripheral	3-59	116,497	39,104	36	Fox Hills and Produced
Pine, North, Red River	Shell	Waterflood	Semi-Peripheral	3-68	11,675	3,883	11	Lodgepole
Prichard Creek, Sunburst	Fulton Producing	Waterflood	Random	4-73	229	500	1	Eagle - Shut-In
Ragged Point, Tyler	BGG Co.	Waterflood	Semi-Peripheral	12- 3-66	5,415	1,520	8	Third Cat Creek
Reagan, Madison	Union	Gas Injection	Random	8-61	4,268	595	2	Gas Injection
Red Creek, Cut Bank	Exxon	Waterflood	5-Spot	6-65	8,773	2,996	6	Madison
Richey, SW, Interlake	Atlantic-Richfield	Waterflood	Random	12-65	2,104	177	1	Fox Hills
Stensvad, Tyler	Ada Oil	Waterflood	Semi-Peripheral	2-63	24,712	2,935	5	Madison
Sumatra West, Tyler	Continental	Waterflood	Semi-Peripheral	10-68	10,688	3,691	9	Madison
Sumatra Central, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	35,167	25,461	19	Madison
Sumatra NE, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	2,823	1,797	5	Madison
Sumatra SE, Tyler	BGG Co.	Waterflood	Semi-Peripheral	12- 1-69	5,574	3,537	6	Madison
Willow Creek, North, Tyler B	Resources Investment	Waterflood	Random	6- 1-72	94	179	1	Produced

## OIL AND GAS DISCOVERIES IN 1974

County	Operator-Well Name and Location	Field	Total Depth	Initial Oil, B/D	Potential Gas, MCF	Producing Formation	Date Completed
Blaine	Fuelco, 21-24-19 USA, SE NW SW 21-24N-19E	Unnamed	1,960		451	Eagle	11-19-74
	Fuelco, 16-23-18 State, SW NE 16-23N-18E	Unnamed	1,452		1,388	Eagle	11- 3-74
	Fuelco, 26-24-18 USA, SE NW SW 26-24N-18E	Unnamed	1,649		1,949	Claggett	10-28-74
	Wise Oil, 86-18 USA, NW SE 18-26N-18E	Unnamed	2,029		896	Eagle	11- -74
	Wise Oil, 6-28 USA, SE NW 28-25N-19E	Unnamed	1,595		6,695	Eagle	12-20-74
	Marquis Petroleum, 29-15 USA, SW SE 29-24N-20E	Unnamed	1,680		Shut-in	Eagle	12- 8-74
Carter	Wheelless Drilling, 10-14 USA, N½ SE SW 10-9S-56E	Unnamed	2,225		95	Muddy	7-17-74
Fergus	Fuelco, 31-23-19 USA, NE SW SE 31-23N-19E	Unnamed	1,830		338	Eagle	-74
Hill	J. Burns Brown, 29-1 Long Est., NW½ 29-33N-15E	Unnamed	1,650		150	Eagle	8- 1-74
Liberty	Luff, 1-6 USA, SE SE 6-37N-6E	Unnamed	3,235		30	Blackleaf	7-25-74
	McCarthy, Hedges 1, NE SW 34-36N-7E	Unnamed	3,540		630	Blackleaf	9-27-74
Musselshell	Gas Producing Enterprises, 41-19 BN, NE NE 19-11N-28E	Howard Coulee	4,440	264		Tyler A	4-10-74
	Exeter et al, 6-3 Anderson-DeJaegher, SE NW 3-11N-30E	Shepherd	5,050	363		Tyler A	9-26-74
Phillips	Midlands Gas, 17-61 USA, NW SE NW 17-36N-31E	Unnamed	1,669		2,500 1,300	Bowdoin Phillips	9- -74
	Midlands Gas, 0530 USA, NW SE NW 5-33N-30E	Unnamed	1,839		13	Bowdoin	8-20-74
	Midlands Gas, 1831 USA, NW SE NW 18-33N-31E	Unnamed	1,600		Shut-in	Bowdoin	5-28-74
	Pan Canadian, 5 USA, SW NE 28-30N-31E	Unnamed	2,582		Shut-in	Bowdoin	3-27-74
Pondera	Balcron, 1 Leavitt, SW NE NE 4-29N-1W	Unnamed	680		Shut-in	Bow Island	11-21-74
	Balcron, 1 McCracken, NE SE 13-29N-2W	Unnamed	730		Shut-in	Bow Island	12-18-74
Richland	UV Industries, 1-19 Gardner, NW SE 19-25N-57E	Lone Butte	12,553	304 +	328	Red River	7-18-74
Roosevelt	Anadarko, A-1 Barry-Rogney, NE SE 28-29N-55E	Big Muddy Creek	11,963	650 596	348 754	Interlake Red River	12-18-74
Rosebud	McAlester Fuel, 3-9 Hank Bros., NE SE 3-10N-32E	Rosebud	5,034		225	Tyler B	8- 6-74
	Gas Producing Enterprises, 35-13-33 BN, SW NW 35-13N-33E	Gumbo Ridge	5,051	167		Tyler B	12-27-74
Sheridan	Oil Development, 1 LaGrange, NE SE 10-36N-54E	NE Raymond	10,280	356 198		Red River Winnipegosis	3-22-74
Toole	Batts Oil & Gas, 1 Larsen, NW½ 12-32N-3E	Unnamed	2,360		290	Bow Island	2-25-74
	Western Natural Gas, 13-11 Diehl, SW SW 11-36N-1E	Unnamed	2,385		225	Sunburst	5- -74
	Balcron, 1 Wilmer Trust, N½ NE½, 20-29N-1E	Unnamed	743		60	Blackleaf	10- 9-74
	Kenneth Luff, 1-1 Peterschick, SW NE 1-34N-2E	Unnamed	2,286		1,949	Blackleaf	7-31-74

## SIGNIFICANT EXTENSIONS AND NEW PAY ZONES IN 1974

Blaine	Montana Power, 9-9 Sprinkle, NE SE 9-31N-19E	Bowes	500		15	Judith River	4-17-74
Fallon	Juniper Petroleum, 21-31 BN, NE NW 31-10N-59E	Cupton	9,447	92	400	Red River	9-15-74
Hill	Nyvatek Oil, 1 Velk, SW NW 7-33N-17E	Coal Coulee	1,610		3,300	Eagle	5-14-74
Liberty	Montana Power, 13-36 State, NE SW 36-37N-5E	Black Jack	3,097		52	Sawtooth	6- -74
Musselshell	Sage Oil, 1 Jones, SE SE 34-11N-27E	Little Wall Creek	3,835	335		L. Tyler	9-14-74
	Sage Oil-W.R. Grace, 1-35 BN, NW SW 35-11N-27E	Little Wall Creek	3,935	207	16	Tyler B	2-13-74
Stillwater	CIG Exploration, 29-4-20 Brickley, SE NW NW 29-4N-20E	Big Coulee	3,075		887 951	Frontier Third Cat Creek	4-23-74
	Concept Resources, 11-A-3 Gorr, E½ SW½ 3-2N-20E	Rapelje	758		200	Judith River	-74
Toole	Candel Oil, 1 Ashiem, NE NW 20-37N-1E	Unnamed	1,790		10	Bow Island	6-19-74
	Austin-Batts, 2 State, SW NE SW 16-36N-3W	Rattlesnake Coulee	931		Shut-in	Bow Island	8-30-74
	Blair-Sampsel, 16-16 State, NE SE SE 16-36N-2E	Miners Coulee	2,565		5,000	Sunburst Swift (Comm.)	1- 3-74



## OIL AND GAS FIELDS

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>ANTELOPE</b> Swift (U. Jur.)	3	Structural	Water Drive	(Listed as part of Cat Creek Field.)	None
<b>ARCH APEX</b> Bow Island (L. Cret.) Gas Swift (Jurassic) Gas	8 3 (Shut-in)	Strat. Strat.	Volumetric Volumetric	330' from legal subdivision; 2400' from any other drilling or producible gas well producing from the same reservoir; 75' topographic tolerance. (Order 4-60.) (Sometimes called Colorado Blackleaf pool.) (Swift) Statewide.	None
<b>ASH CREEK</b> Shannon (U. Cret.)	3	Structural	Partial Water Drive and Depletion	Spacing waived within utilized portion of field except no well may be drilled closer than 660' from unit boundary. (Order 4-65.)	Waterflood started October, 1964. (Orders 22-64, 15-66.)
<b>BAINVILLE</b> Red River (Ord.)	1 1 (Shut-in)	Structural-Strat.	Depletion-Water Drive	State-wide.	None
<b>BANNATYNE</b> Swift (U. Jur.)	3	Structural	Comb. Water Drive and Volumetric	Center of 10-acre tracts, 50' topographic tolerance. Commingling permitted. (Order 20-58.)	Pilot waterflood of Swift suspended in 1963.
<b>Sun River (U. Miss.)</b>	1 (Shut-in)				
<b>BEARS DEN</b> Sunburst (L. Cret.) Gas Swift (U. Jur.) Oil Sawtooth (Jur.) Gas	2 6 1 (Shut-in)	Structural	Depletion and Gas Cap Drive	State-wide.	None
<b>BELL CREEK</b> Muddy (L. Cret.) Oil & Gas Gas	226 2	Strat.	Depletion	Originally 40-acre spacing units with location 660' from unit boundary with 150' tolerance for topographic reasons only. (Order 37-67, 39-67, 50-67, 1-69, 17-70.) Field now unitized.	Six areas unitized (Unit "A", "B", "C", "D", and "E"). Floods use Madison water. (Orders 7-70, 23-70, 8-71, 26-71, 35-71, 36-71.)
<b>BELL CREEK SOUTHEAST</b> Muddy (L. Cret.) Gas	2	Strat.	Depletion	160-acre spacing units, wells 660' from spacing boundary. (Order 31-72.)	None
<b>BENRUD</b> Nisku (Dev.)	1 1 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted location within a 1320' square in center of quarter section. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BENRUD, EAST</b> Nisku (Dev.)	3	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62, 32-66.)
<b>BENRUD, NORTHEAST</b> Nisku (Dev.)	1	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 32-66.)
<b>BERTHELOTE</b> Sunburst (L. Cret.)	1 (Shut-in)	Strat.	Depletion	40-acre spacing units with well no closer than 330' from lease or property line and no closer than 660' between wells. (Order 18-66.)	None
<b>BIG COULEE</b> 3rd Cat Creek (L. Cret.) Gas Morrison (U. Jur.) Gas	5 1	Structural Structural	Water Drive Water Drive	State-wide.	None
<b>BIG MUDDY CREEK</b> Interlake (Sil.) Red River (Ord.)	1	Structural	Water Drive	One well per 320 acre spacing unit with well no closer than 660 feet from boundary of four east-west units. (Order 4-75.)	None
<b>BIG WALL</b> Amsden (Penn.)	1 1 16 1	Structural Struct- Strat.	Water Drive Depletion	Spaced by old state-wide spacing; 330' from lease or property line, 990' between wells in same reservoir. (Order 12-54.)	Previous disposal into Tyler "A" stopped in 1961. Waterflood of Tyler "B" sand started August, 1966. (Order 22-66.)
<b>BLACK COULEE</b> Eagle (U. Cret.)	4	Structural- Strat.	Water Drive	One well per 320-acre spacing unit, two adjacent quarter sections, direction operator's option. Wells to be at least 990' from unit boundary. (Order 6-73.)	None
<b>BLACKFOOT</b> Cut Bank (L. Cret.) Sun River (Miss.)	4 7 (Shut-in)	Strat. Structural	Depletion Water Drive	One well only per 40-acre spacing unit, 300' tolerance from center of spacing unit. Dual completion in Cut Bank and Madison with administrative approval. (Order 3-57.)	None
<b>BLACK JACK</b> Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas & Oil Blackleaf (U. Cret.) Gas	6 1 1	Strat.	Depletion	One gas well per 160-acres, no closer than 660' from boundary of each unit. (Order 3-69.) Oil: State-wide spacing. Order 3-69 amended to include Blackleaf in spacing and field rules for gas. (Order 4-74.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BORDER</b> Cut Bank (L. Cret.) Oil & Gas	7	Strat.	Depletion	Oil: Unitized into New and Old Border fields. Unitized 6-1-73. (Orders 8-73, 9-73.) Gas: 330' from boundary of legal subdivision. 2,400' between wells in same formation on same lease. 75' topographic tolerance. (Order 7-54.)	Waterflood approved. (Orders 8-73, 9-73.)
<b>BOWDOIN</b> Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas (Shut-in) *Gas wells outside boundary.	307 * 69 39	Structural	Volumetric	One well per quarter section not less than 1000' from lease boundary or less than 2000' from any gas well in same horizon. (Order 29-55.) Unitized 1958. Delineated. (Order 3-72.)	None
<b>BOWES</b> Eagle (U. Cret.) Gas	26	Structural	Volumetric	660' from boundary of legal subdivision, 1320' from other wells in same formation. 75' topographic tolerance. (Order 23-54.)	None
Sawtooth (M. Jur.) Oil (Shut-in)	51 25	Structural	Partial Water Drive	330' from lease or property line, 990' between wells in the same formation. (Order 13-54.)	Pilot waterflood initiated in 1961 and expanded to fieldwide waterflood in 1965. (Order 5-61.) Water from Madison.
<b>BRADLEY</b> Sun River (Miss.)	1 1 (Shut-in)	Structural	Water Drive	State-wide.	None
<b>BRADY</b> Sunburst (L. Cret.)	1 (Shut-in)	Strat.	Depletion Partial Water Drive	10-acre spacing units with 75' topographic tolerance from center of spacing unit. (Order 34-62, 55-62.)	None
<b>BRORSON</b> Mission Canyon (Miss.) Oil & Gas Red River (Ord.) Oil & Gas	4 5	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary (Mission Canyon and Red River). (Order 5-69.) Gas to Brorson Field plant.	None
<b>BRORSON, SOUTH</b> Red River (Ord.) Oil & Gas	3	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary. (Order 26-28.) Gas to Brorson Field plant.	None
<b>BROWN'S COULEE</b> Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	3	Structural	Volumetric	One well per 160-acre unit with well location no closer than 660' from unit boundary. Commingling permitted with administrative approval. (Order 7-74.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>BRUSH LAKE</b> Red River (Ord.) Oil & Gas (Shut-in)	5 2	Structural-Strat.	Depletion Water Drive	320-acre spacing with initial nine spacing units described in (Order 15-71 corrected).	None
<b>BULLWACKER</b> Judith River (U. Cret.) Gas Eagle-Virgelle (U. Cret.) Gas	28	Structural	Volumetric	One well per 320-acre spacing unit with well location no closer than 660' from unit boundary & 990' from field boundary. (Order 26-74.)	None
<b>BURNS CREEK</b> Red River (Ord.)	1	Structural	Depletion Water Drive	State-wide.	None
<b>CABIN CREEK</b> Mission Canyon (Miss.) Oil & Gas (Shut-in)	17 1	Structural	Water Drive Depletion	Spacing waived and General Rules No. 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 36-62.) Many wells produce from both Interlake and Red River by dual completions. Gas through extraction plant.	Waterflood of Siluro-Ordovician reservoir has been expanded to full scale peripheral flood. (Orders 60-62, 30-63.)
<b>CANADIAN COULEE, NORTH</b> Sawtooth (M. Jur.)	2	Structural-Strat.	Volumetric	640-acre spacing unit. Location to be no closer than 1650' to section line. (Order 15-74.)	None
<b>CANAL</b> Red River (Ord.)	1	Structural	Water Drive Depletion	320-acre spacing units consisting of East half and West half of governmental section. (Order 34-70.)	None
<b>CAT CREEK</b> Kootenai (L. Cret.) (3 sands) Morrison (U. Jur.) Ellis (U. Jur.) Amsden (Penn.)	32 4 2 9 7 1	Structural-Strat. Structural-Strat. Structural-Strat. Structural-Strat.	Water Drive Water Drive Depletion- Water Drive Water Drive	220' from lease or property line, 440' from every other well in same formation. (Order 17-55.) Five separate producing areas, East, Antelope, Mosby, West and Landheim Domes. State-wide.	Three Kootenai, two Ellis, and one Amsden waterfloods in progress. (Orders 17-56, 18-59, 13-62, 8-68, 38-70, 11-71.) Water from Third Cat Creek sand. Waterflood modified. (Order 29-74.)
<b>CEDAR CREEK</b> Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	179 60	Structural Structural	Volumetric Volumetric	1200' from legal subdivision line, 2400' from every other well in same formation. (Order 33-54.) 320-acre spacing units. Wells in center of NW <sup>1</sup> / <sub>4</sub> and SE <sup>1</sup> / <sub>4</sub> of each section with 200' topographic tolerance. (Order 1-61.)	None None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>CHELSEA CREEK</b> Nisku (Dev.)	1	Structural	Water Drive	State-wide.	None
<b>CLARK'S FORK</b> Frontier (J. Cret.)	1	Structural-Strat.	Depletion	330' from quarter-quarter section line, 1320' between wells with 75' topographic tolerance. (Order 17-54.)	None
<b>CLARK'S FORK, SOUTH</b> Greybull (L. Cret.) Oil & Gas Shut-in)	1	Structural-Strat.	Depletion-Water Drive	160-acre spacing, location no closer than 330' from quarter section line or 1320' from any other well.	None
<b>COAL COULEE</b> Eagle (J. Cret.) Gas	3	Structural-Strat.	Volumetric	State-wide.	None
<b>CONRAD, SOUTH</b> Dakota (L. Cret.)	1 (Shut-in)	Strat.	Depletion	10-acre spacing units. Wells in center of each unit with 75' topographic tolerance. (Orders 34-62, 31-63.)	None
<b>COW CREEK</b> Charles (Miss.)	2	Structural	Water Drive	80-acre spacing units, direction at option of operator but wells to be in SW $\frac{1}{4}$ and NE $\frac{1}{4}$ of each quarter section. (Order 11-69.)	None
<b>COW CREEK, EAST</b> Kibbey (Miss.)	5 1 (Shut-in)	Structural	Water Drive	40-acre spacing units consisting of quarter-quarter section with permitted well to be at center with 150' topographic tolerance. (Order 35-74.)	None
<b>CULBERTSON</b> Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide in part. Unitized as to SE $\frac{1}{4}$ of Section 32, SW $\frac{1}{4}$ of Section 33, N $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 4, and N $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 5. (Order 29-70.)	None
<b>CUPTON</b> Red River (Ord.)	8	Structural-Strat.	Water Drive	160-acre quarter section spacing units. Location no closer than 660' from spacing unit boundary. (Order 4-72.)	None
<b>CUT BANK</b> Kootenai (L. Cret.) Oil & Gas (Gas only) Madison (Miss.) Oil & Gas (Gas only) (Shut-in)	863 139 28 29	Strat. Strat.	Depletion Water Drive	(Kootenai formation includes Moulton, Sunburst, and Cut Bank sands.) Oil: 330' from legal subdivision line. 650' between wells in same formation. 5-spot on 40-acre tract permitted. 75' topographic tolerance. (Order 10-54.) Gas: 330' from legal subdivision, 2400' between wells in same formation. 75' topographic tolerance. (Order 10-54.) Sections 20, 29, and 32 of Township 36 North, Range 4 West spaced 320-acres (N $\frac{1}{2}$ & S $\frac{1}{2}$ .) (Order 26-70.)	There are 19 waterfloods in progress. Water from Eagle and Madison, or produced. Produced water disposed into Madison formation. (Order 22-A-74.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>DARLING</b> (Included as part of Cut Bank Field)					
<b>DEAN DOME</b> Greybull (L. Cret.) Gas Oil (Shut-in)	1 1	Structural	Water Drive	State-wide. Oil ring below gas cap.	None
<b>DEER CREEK</b> Interlake (Sil.)	1 4	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE 1/4 and SW 1/4 of each quarter section with 75' topographic tolerance. (Orders 23-55 & 14-59.) Commingling of production permitted upon approval of Commission Petroleum Engineer. (Order 18-63.)	Excess produced water is disposed into Dakota and Lakota formations. (Orders 6-56 & 3-58.) Two Silurian wells shut-in.
Red River (Ord.)	2	Structural	Water Drive		
<b>DELPHIA</b> Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
<b>DEVIL'S BASIN</b> Heath (U. Miss.)	3	Structural	Depletion	State-wide.	None
<b>DEVON</b> Blackleaf (U. Cret.) Gas Kootenai (L. Cret.) Oil Depleted	23	Strat. Strat.	Volumetric Depletion	State-wide. State-wide.	None None
<b>DEVON, SOUTH</b> Bow Island (L. Cret.) Gas (Shut-in)	1 9	Strat.	Volumetric	Drilled on state-wide spacing. Utilized for primary production. (Order 28-71, corrected).	None
<b>DRY CREEK</b> Eagle (U. Cret.) Gas Judith River (U. Cret.) Frontier (U. Cret.) Gas Greybull (L. Cret.) Gas, some oil	1 1 7 4	Structural-Strat. Structural-Strat.	Volumetric Volumetric-Depletion	State-wide. Field re-delineated. (Order 8-70.) Six additional gas storage wells, west end of structure.	None
<b>DWYER</b> Ratcliffe (Miss.)	10 4	Structural-Strat.	Water Drive- Volumetric	160-acre spacing units; well location in center of SE 1/4 of spacing unit with 175' topographic tolerance. (Orders 25-60, 29-61.)	Produced water disposed into Dakota formation. (Order 26-63.) Waterflood. (Order 20-68.)
<b>EAST KEITH &amp; KEITH</b> Bow Island (L. Cret.) Gas Dakota (L. Cret.) Sawtooth-Madison (Jur.-Miss.) Gas	7 1 5	Structural	Water Drive	State-wide, except unitized portions spaced by (Order 22-62). Pooling (Order 19-66).	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>ELK BASIN</b> (Mont. Portion) Frontier (U. Cret.)	12	Structural	Gravity Drainage	Rule No. 203 (Spacing) is waived within Unit Area. (Order 10-61.) Gas to Elk Basin gasoline plant.	Frontier: Water injection. (Order 1-72.) Embar - Tensleep: pressure maintenance by crestal gas injection. Waterflood approved in 1966. (Order 5-66.) Madison: Water injection (Order 17-61.)
Embar-Tensleep (Perm., Penn.) Oil and Gas	14 (Shut-in) 19 (Penn.) 13 (Shut-in)	Structural	Gravity Drainage		
Madison (Miss.)	21	Structural	Water Drive		
<b>ELK BASIN, NORTHWEST</b> Frontier (U. Cret.)	4	Structural	Depletion	Spacing waived within unitized portion except that bottom of hole be no closer than 330' from unit boundary and there be at least 1320' surface distance between wells in same formation; 75' topographic tolerance. (Orders 43-63, 28-64.) Gas to Elk Basin gasoline plant.	Frontier: Waterflood in progress. Embar - Tensleep: Waterflood. (Order 3-67.) Madison, produced water.
Embar-Tensleep (Perm., Penn.) Oil and Gas	5 (Shut-in) 4 (Penn.)	Structural	Gravity Drainage		
Madison (Miss.)	2	Structural	Water Drive		
<b>ETHRIDGE AREA</b> Bow Island (L. Cret.) Gas (Shut-in)	3	Strat.	Water Drive	State-wide.	None
Swift (U. Jur.) Gas (Shut-in)	5 1	Strat.	Water Drive	State-wide, except two wells by (Order 28-65).	
<b>FAIRVIEW</b> Winnepigosis (Dev.) Oil & Gas Red River (Ord.) Oil & Gas	1 8	Structural Structural	Water Drive Water Drive	160-acre spacing unit. Well location anywhere in spacing unit but no closer than 660' from unit boundary. (Order 48-65, 1-67, 43-67, 44-67.) Gas to Fairview plant.	Northwest part of field unitized for gas injection. Gas from Fairview and Bronson fields. (Order 11-70.) Salt water disposal into Dakota. (Orders 9-A-71, 24-A-71.)
<b>FERTILE PRAIRIE</b> Red River (Ord.)	2	Structural-Strat.	Water Drive	80-acre spacing units consisting of north-south rectangular units. Well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section with 75' topographic tolerance. (Orders 3-56, 7-62.)	None
<b>FLAT COULEE</b> Bow Island (L. Cret.) Gas (Shut-in)	3 1 (Shut-in)	Structural Strat.	Depletion	330' from boundary of legal subdivision and 1320' from other wells in same reservoir. (Order 16-55.) State-wide, exception (Order 11-66.)	Waterflood unit and redelimitation approved for Swift sandstone. (Orders 13-71, 17-A-71, 22-71.)
Dakota (L. Cret.) Gas (Shut-in)	1 (Shut-in)	Strat.	Depletion		
Swift (Jur.) Gas (Shut-in)	1 (Shut-in)	Strat.	Depletion		
Swift (Jur.) Oil	21	Strat.	Depletion	40-acre spacing units. Well in center of spacing unit with 150' topographic tolerance. (Orders 16-62, 19-63.)	
Sunburst (Jur.) Gas	1	Strat.	Depletion		
Sawtooth (Jur.) Gas (Shut-in)	1	Strat.	Depletion	State-wide.	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>FLAT LAKE</b> Nesson (Miss.)	1	Strat.	Partial Water Drive	160-acre spacing units; well location in center of NE $\frac{1}{4}$ of quarter section with 200' topographic tolerance. Wells no closer than 961' to North Dakota state line and no closer than 1600' to Canadian line. (Orders 10-65 amended, 43-65, 23-66, 33-66.)	Excess salt water disposed into Muddy, Dakota, or Lakota formations. (Orders 39-64, 39-66.)
Ratcliffe (Miss.)	52 5 (Shut-in)	Structural- Strat.	Partial Water Drive		Unit operation for eastern part of field. (Order 7-71.) Unit operation for western part of field. (Order 32-74.)
<b>FLAT LAKE, SOUTH</b> Ratcliffe (Miss.)	6	Structural- Strat.	Partial Water Drive	Same as Flat Lake spacing. (Order 2-67.)	Excess salt water disposed into Muddy, Dakota, or Lakota. (Order 19-67.)
<b>FRANNIE</b> (Mont. Portion) Tensleep (Penn.)	1	Structural	Comb. Water Drive and Gravity Drainage	10-acre spacing units; well location in center of each unit with 100' topographic tolerance. (Order 35-63.)	Unitized for waterflood of Phosphoria-Tensleep formations using produced fluids. (Order 21-70.)
<b>FRED &amp; GEORGE CREEK</b> Sunburst (L. Cret.) Oil & Gas (Shut-in)	14 2 15	Strat. Strat.	Depletion Depletion	Oil: 40-acre spacing units; well location in center of unit with 250' topographic tolerance. (Orders 29-63, 1-65.) State-wide.	Sunburst waterflood initiated July, 1970, using water from Madison, (Order 13-70) and Eagle water. (Order 27-71.)
<b>FROID, SOUTH</b> Red River (Ord.)	1	Structural- Strat.	Depletion	State-wide.	None
<b>FT. GILBERT</b> Red River (Ord.)	2 1 (Shut-in)	Structural- Strat.	Depletion	State-wide.	None
<b>GAGE</b> Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
<b>GAS CITY</b> Red River (Ord.)	17	Structural	Depletion- Water Drive	80-acre spacing units consisting of E $\frac{1}{2}$ and W $\frac{1}{2}$ of quarter sections; well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section; 150' topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingle) and 219 (Dual Completion) are waived in unitized portion of field. (Order 29-62.)	Excess produced water disposed into Judith River formation. (Orders 32-61, 20-64.) Waterflood using produced water and Madison water. (Order 16-69.)
<b>GIRARD</b> Red River (Ord.)	1	Structural- Strat.	Depletion- Water Drive	State-wide.	None



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>GLENDDIVE</b> Red River (Ord.) Oil & Gas (Shut-in)	15 1	Structural-Strat.	Depletion-Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; wells located in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Orders 27-55, 19-62, 58-62, 20-66.)	Excess produced water disposed into Swift, Dakota and Judith River formations. (Orders 16-56, 16-63, 40-A-70.)
<b>GOLD BUTTE</b> Bow Island (L. Cret.) Swift (U. Jur.) Gas	1 1	Structural Structural	Water Drive? Water Drive?	640-acre spacing, well location any quarter-quarter section cornering on center of section. (Order 26-59.) 160-acre spacing; 660' from spacing unit boundary.	None None
<b>GOLDEN DOME</b> Eagle (U. Cret.) Gas	2	Structural-Strat.		Unitized. (Order 17-72.)	None
<b>GOOSE LAKE</b> Ratcliffe (Miss.) Oil & Gas (Shut-in)	29 4	Structural-Strat.	Partial Water Drive		Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.)
<b>GRABEN COULEE</b> Sunburst (L. Cret.) Cut Bank (L. Cret.) Cut Bank-Madison (Dual)	1 28 3	Structural-Strat. Structural-Strat. Structural-Strat.	Depletion Depletion Depletion	40-acre spacing units; well location no closer than 330' from legal subdivision. (Cut Bank and Madison) Oil: 330' from boundary of legal subdivision and 650' from any other well in same reservoir and on same lease. 75' topographic tolerance. (Order 73-62.)	None
<b>GRANDVIEW</b> Bow Island (L. Cret.) Gas (2 Zones) Madison (Miss.) Gas	5 1	Structural Structural	Unknown Unknown	320-acre spacing units aligned in a north-south direction; well locations no closer than 660' to a spacing unit boundary. (Order 49-67.) Dual completion with Bow Island.	None
<b>GUMBO RIDGE</b> Tyler (L. Penn.)	1	Structural-Strat.	Unknown	State-wide.	None
<b>GYPSY BASIN</b> Sunburst (L. Cret.) Oil & Gas Swift (U. Jur.)	1 1	Structural-Strat. Structural-Strat.	Comb. Water Drive and Depletion Comb. Water Drive and Depletion	330' from lease lines and 660' between wells in same formation. Only two wells per quarter-quarter section. (Order 7-66.) Same as Sunburst	Order 6-64 permits injection of excessive gas (produced with oil) into the Sunburst gas cap.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
Sawtooth-Madison (Jur. & Miss.) Oil & Gas	2	Structural-Strat.	Comb. Water Drive and Depletion	(Sawtooth-Madison) Oil: 40-acre spacing units; wells no closer than 330' from lease line. (Order 7-66.) (Sawtooth-Madison) Gas: 160-acre spacing units; well locations in center of any quarter-quarter section in each 160-acre unit, 2340' between gas wells. 150' topographic tolerance. (Order 13-59.)	
<b>HARDIN</b> Frontier (U. Cret.) Gas	17 31	Strat.	Volumetric	State-wide.	None
<b>HAVRE</b> Eagle (U. Cret.)	1	Structural-Strat.	Water Drive Depletion	State-wide. Single well used in town of Havre.	None
<b>HAY CREEK</b> Mission Canyon (Miss.)	1	Structural	Depletion	State-wide.	
Red River (Ord.)	1	Structural	Volumetric Water Drive	320-acre spacing, any two adjacent quarter sections, direction to be determined by operator. Location no closer than 660' from unit boundary. (Orders 15-69, 27-73.) Gas to Bronson plant.	Water disposal into Red River. (Order 20A-70.)
<b>HIAWATHA</b> Tyler (L. Penn.) (2 sands)	4	Structural-Strat.	Depletion	State-wide.	None
<b>HIBBARD</b> Amsden (Penn.)	1	Unknown	Water Drive	State-wide.	None
<b>HOWARD COULEE</b> Tyler (L. Penn.)	1	Structural-Strat.	Unknown	State-wide.	None
<b>INJUN CREEK</b> Tyler (Penn.) Abandoned.	0	Strat.	Depletion	State-wide.	None
<b>IVANHOE</b> Morrison (U. Jur.)	1	Structural-Strat.	Depletion	40-acre spacing unit for production from any one common formation; well location in center of unit with 200' topographic tolerance. (Order 7-60 and 9-56).	Waterflood of Tyler B & C sands discontinued.
Amsden (L. Penn.) (Shut-in)	1	Structural Strat.	Water Drive		
Tyler (L. Penn.)	9	Structural-Strat.	Depletion		

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>JIM COULEE</b> Tyler (L. Penn.)	18	Structural Strat.	Depletion Water Drive	Unitized (Order 18-72.) No well closer than 330' from unit boundary.	Waterflood; produced and Third Cat Creek water.
<b>KEG COULEE</b> Tyler (Penn.) Oil & Gas Shut-in)	21 2	Strat.	Depletion	40-acre spacing in southwest portion of field except that spacing is waived in unitized portion. (Orders 3-64, 4-64, 23-64.) 80-acre spacing in remainder of field with variable pattern. (Order 11-60, 28-62.) Topographic tolerance varies from 100' to 250'. (Orders 11-60, 4-64, 23-64.) Buffer zone waived. (Order 16-65.)	Three waterflood units. (Orders 3-64, 28-66, 10-69, 14-69.) Madison water injected.
<b>KEG COULEE, NORTH</b> Tyler (Penn.)	2	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 150' topographic tolerance. (Order 46-64.) Buffer zone waived. (Order 16-65.)	None
<b>KEITH</b> (see East Keith)					
<b>KELLEY</b> Tyler (Penn.)	3	Strat.	Depletion	State-wide, 250' topographic tolerance. (Order 15-67.)	Waterflood using Third Cat Creek water. (Order 8-69.)
<b>KEVIN-SUNBURST</b> Sunburst (L. Cret.) Oil & Gas Swift (U. Jur.)	37 ?	Strat. Structure	Depletion	9 wells per 40-acre tract; only 3 wells on any side of tract set back at least 220' from line. Field delineated by (Orders 8-54, 28-55.) (Estimated 400 wells shut-in.)	There are five waterfloods in operation, using Madison water. (Orders 9-64, 17-64, 30-64, 36-65, 29-71.)
Sun River (Miss.) Oil & Gas Gas only (Shut-in)	304 12 ?	Structure-Strat.	Depletion		
<b>KICKING HORSE</b> Sun River (Miss.) Gas	1	Structural	Depletion	320-acre spacing with location permitted no closer than 660' from unit boundary and 990' from field boundary. (Order 17-74.) One 640-acre unit. (Order 17-74.)	None
<b>LAIRD CREEK</b> Swift (U. Jur.) Oil & Gas (Shut-in)	11 1	Strat.	Depletion	State-wide. One shut-in gas well.	Unitized and waterflood authorized in Swift for oil production. (Order 25-74.)
<b>LAKE BASIN</b> Telegraph Creek (U. Cret.) Gas Virgelle (U. Cret.) Gas	7	Structural-Strat.	Volumetric	160-acre spacing units to base of Virgelle; wells no closer than 660' from unit boundary and 990' from field boundary. Commingling permitted after administrative approval. (Order 9-74.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>LAKE BASIN, NORTH</b> Eagle, Frontier (U. Cret.) Gas Shut-in)	2 2	Structural	Unknown	640-acre spacing units consisting of one section. Locations 990' from section line. (Order 3-74.)	None
<b>LANDSLIDE BUTTE</b> Sun River (Miss.) (Shut-in)	2 1	Unknown	Water Drive	State-wide.	None
<b>LAREDO</b> Eagle (U. Cret.) Judith River (U. Cret.) (Shut-in) (Shut-in)	21 1	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 990' from unit boundary. (Order 8-74.)	None
<b>LEARY</b> Muddy (L. Cret.)	3	Structural-Strat.	Depletion	80-acre spacing with locations in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section, 200' topographic tolerance. (Order 12-69, 19-70.)	None
<b>LISCOM CREEK</b> Shannon (U. Cret.) Gas	7	Structural-Strat.	Depletion	Spacing, one well per 640 acres, with location no closer than 990' from section boundary. (Order 20-72.)	None
<b>LITTLE BEAVER (Mont. Portion)</b> Red River (Ord.)	23	Structural	Comb. Depletion and Water Drive	Spacing waived and General Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 41-62.)	Waterflood of the Red River was commenced in August, 1967. (Order 3-66.) Minnelusa water.
<b>LITTLE BEAVER, EAST</b> (Montana Portion) Red River (Ord.)	8	Structural	Comb. Depletion and Water Drive	Same as for Little Beaver. (Order 42-62.)	Waterflood of the Red River was commenced in April, 1965. (Order 33-64.)
<b>LITTLE WALL CREEK</b> Tyler (Penn.)	9	Strat.	Depletion Water Drive	State-wide.	None
<b>LODGE GRASS</b> Tensleep (Penn.)	1	Structural-Strat.	Water Drive	160-acre spacing units; well locations vary according to areas; 250' topographic tolerance. (Orders 26-64, 26-65.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>LONE BUTTE</b> Red River (Ord.)	1	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. Not delineated.	None
<b>LONETREE CREEK</b> Red River (Ord.)	6	Structural	Depletion	320-acre spacing, wells 660' from spacing boundary, 2000' between wells. (Order 29-72.)	None
<b>LOOKOUT BUTTE</b> (Includes Coral Creek Unit) Madison (Miss.)	3	Structural	Water Drive	State-wide spacing.	Water disposal into Madison. (Order 68-62.)
Interlake, Red River (Sil.-Ord.)	26	Structural	Comb. Depletion and Water Drive	160-acre spacing, well location in center of SE $\frac{1}{4}$ of each quarter section with 150' topographic tolerance. (Order 21-62.) Coral Creek Unit not subject to spacing rules. Redelineated per (Order 7-63.)	Waterflood of Silurian-Ordovician approved in 1966. (Order 35-66.) Water from Minnelusa.
<b>MASON LAKE</b> Lakota (L. Cret.)	2	Structural	Water Drive	State-wide.	None
<b>MELSTONE</b> Tyler (Penn.)	4	Structural-Strat.	Depletion	State-wide.	None
<b>MIDDLE BUTTE</b> Blackleaf (Cret.) Gas Bow Island (Cret.)	1 2 (Shut-in)	Structural	Volumetric	320-acre spacing units consisting of E $\frac{1}{2}$ & W $\frac{1}{2}$ of each section; well location in center of either of the inside quarter-quarter sections located in E $\frac{1}{2}$ of each spacing unit. 75' topographic tolerance. (Order 3-60.)	None
<b>MINERAL BENCH</b> Duperow (Dev.)	1	Structural	Water Drive	State-wide.	Water disposal into Dakota-Lakota per (Order 18-65.)
<b>MINERS COULEE</b> Sunburst (L. Cret.) Swift (U. Jur.) Madison (Miss.) Sunburst-Swift Gas	2 3 1 1 (Shut-in) (Shut-in) (Shut-in)	Strat. Strat. Strat.?	Depletion Depletion Water Drive	Oil: 40-acre units consisting of quarter-quarter sections; well location no closer than 330' from lease or property line and 660' from any other well. (Order 9-66.) Order 9-66 amended to comply with Order 5-74. Gas: 160-acre spacing with wells 990' from unit boundary. (Order 5-74.)	None
<b>MONARCH</b> Mission Canyon (Miss.)	2	Structural-Strat.	Water Drive	80-acre spacing units consisting of east and west half of quarter section. Well location in SW $\frac{1}{4}$ & NE $\frac{1}{4}$ of quarter section. Location within 660' square at center of quarter section. (Order 18-61.)	Produced water is disposed into the salt water disposal system for the Pennell Field.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
Interlake, Red River (Sil.-Ord.)	10	Structural-Strat.		160-acre spacing units consisting of a quarter section; well location in center of SW $\frac{1}{4}$ of each quarter section with 175' topographic tolerance. (Orders 12-59, 4-63.)	Waterflood initiated 12-1-73. (Order 23-73.)
<b>MOSBY</b> (See Cat Creek)	8 4	Structural-Strat.	Water Drive	Listed as part of Cat Creek.	Waterflood, 2nd Cat Creek sand. (Order 8-68.) Water-flood in Amsden. (Order 11-71.)
<b>MOSSE</b> Greybull (L. Cret.)	4	Structural	Water Drive	Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.)	None
<b>MT. LILLY</b> Madison (Miss.) Gas	2	Structural	Water Drive	640-acre spacing, well location in approximate center of any of the four quarter-quarter sections adjoining center of section; 250' topographic tolerance. (Order 37-63.)	None
<b>NOHLY</b> Red River (Ord.)	2	Structural	Volumetric Water Drive	State-wide.	None
<b>NORTH GUILDFORD</b> Sawtooth (M. Jur.)	1	Structural	Unknown	320-acre specified spacing units. One well per unit 660' from boundary, 2640' between wells. (Order 9-58.)	None
<b>NORTH LAKE BASIN</b> (See Lake Basin, North)					
<b>NORTH WILLOW CREEK</b> (See Willow Creek, North)					
<b>OTIS CREEK</b> Red River (Ord.)	2	Structural	Depletion	State-wide.	None
<b>OTIS CREEK, SOUTH</b> Red River (Ord.)	1	Structural	Depletion	State-wide.	None
<b>OUTLOOK</b> Duperow (Dev.)	2	Structural-Strat.	Water Drive	State-wide.	Produced water is disposed into Dakota and Siluro - Devonian formations. (Orders 16-59, 17-65, 36-66.)
Winnepegosis (Dev.)	3	Structural-Strat.	Water Drive	State-wide.	
Silurian-Devonian	3	Structural-Strat.	Water Drive	160-acre spacing units; well location in center of either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of each quarter section; 175' topographic tolerance. (Order 19-59A.)	
	2	Strat.			

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>OUTLOOK, SOUTH</b> Winnipegosis (Dev.)	1	Structural	Water Drive	160-acre spacing; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of quarter section, 175' topographic tolerance. (Order 19-59A.) Commingling permitted. (Order 45-64.)	Produced water disposed into Muddy and Dakota formations. (Orders 19-59, 17-65.)
<b>OUTLOOK, WEST</b> Winnipegosis (Dev.)	2	Structural	Water Drive	160-acre spacing units consisting of quarter sections; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ with a tolerance of 175'. (Order 7-67.)	Produced water disposed into Dakota formation. (Order 42-66.)
<b>PENNEL</b> Mission Canyon (Miss.)	8	Structural	Depletion-Water Drive	80-acre spacing units consisting of east and west half of quarter section; wells located in center of SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of quarter sections with 150' topographic tolerance. (Order 15-61.)	Produced water is being injected into Dakota, Siluro-Ordovician and Madison formations. (Orders 16-60, 46-62, 68-62, 36-63, 13-64.) Waterflood for Siluro-Ordovician approved Nov. 1968. (Order 24-68.)
Siluro-Ordovician Oil & Gas	100	Structural	Depletion-Water Drive	80-acre spacing units on west side and 160-acre spacing units on east side of pool. Wells to be located in SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of each quarter section (80 acres) and in SE $\frac{1}{4}$ of each quarter section on 160-acre spacing. (Orders 1-56, 8-56, 15-61, 20-62, 4-63, 7-63.) Commingling approved. (Order 59-62.)	
<b>PINE</b> Mission Canyon (Miss.) Oil & Gas	5	Structural	Water Drive	Spacing and General Rules 213, 218 and 219 are waived within the Pine Unit. 80-acre spacing units outside of unit area; well location in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section; 150' topographic tolerance. (Order 37-62.) Gas through extraction plant.	A waterflood program for the south area was started in 1959. A waterflood of the north area was approved in 1967. (Orders 13-68, 1-60, 8-62, 32-67.) Produced water injected into Mission Canyon. (Order 10-A-74.)
Siluro-Ordovician Oil & Gas	108	Structural	Depletion-Water Drive		
<b>PLEVNA</b> Judith River (U. Cret.) Gas	20	Structural	Water Drive	1200' from legal subdivision line; 2400' from other wells on same lease or unit; 75' topographic tolerance. (Orders 34-54, 4-57.)	None
<b>PONDERA</b> Sun River (Miss.) Oil & Gas	301	Structural-Strat.	Depletion-Water Drive	Oil: 220' from legal subdivision, 430' from other wells in same reservoir on same lease; 75' topographic tolerance. Porter Bench Extension: 330' from legal subdivision line; 650' from other wells in same reservoir on same lease or unit; 75' topographic tolerance. (Order 9-54.) Gas: 1320' from legal subdivision; 3700' from other wells on same lease or unit; 75' topographic tolerance. (Order 9-54.) General Rules 207, 211, 219, 221, 223, and 224 do not apply.	Produced water injected into lower Madison. (Orders 11-56, 15-56, 4-65, 4-66, 20-A-71.) A small waterflood project has been in operation since 1959, using Madison water.

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>PONDERA COULEE</b> Sun River (Miss.)	4	Structural	Water Drive	330' from legal subdivision lines or upon a 10-acre spacing pattern; 75' topographic tolerance. (Order 5-62.)	None
<b>POPLAR, EAST</b> Madison (Miss.) (Charles & Mission Canyon fms.)	59	Structural	Water Drive	State-wide spacing; field delineated by (Order 7-55.)	Unitized in 1955. (Order 7-55.) Excess produced water has been injected into the Dakota and Judith River formations. (Orders 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67.)
	3	Structural-Strat.	Water Drive		
Nisku (Dev.)	1	Structural	Water Drive		
<b>POPLAR NORTHWEST</b> Charles (Miss.) ("C" or McGowan Zone)	3	Structural	Water Drive	80-acre spacing units for McGowan or "C" zone consisting of E $\frac{1}{2}$ and W $\frac{1}{2}$ of each quarter section; permitted wells in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of quarter section. All other formations on state-wide spacing. (Order 18-55.)	None
<b>PRAIRIE ELK</b> Charles "C" (Miss.)	1	Unknown	Water Drive	State-wide.	None
<b>PRICHARD CREEK</b> Sunburst (L. Cret.) Oil & Gas	6	Strat.	Depletion	Well locations subject to administrative approval.	None. Unitized as to Sunburst for water injection. (Order 7-73.)
	1				
<b>PUMPKIN CREEK</b> Shannon (U. Cret.) Gas	8	Structural-Strat.	Depletion	State-wide. Delineated. (Order 10-71.)	None
<b>PUTNAM</b> Interlake (Sil.)	1	Structural	Volumetric Water Drive	State-wide.	None. Gas. to McCulloch Gas Processing Corp. Brorson Plant.
Red River (Ord.)	1	Structural	Volumetric Water Drive		
<b>RABBIT HILLS</b> Sawtooth (Jur.)	3	Structural Strat.	Volumetric Water Drive	160-acre spacing unit. Well location 660' from spacing unit boundary. (Orders 17-73, 34-74.)	None
<b>RAGGED POINT</b> Tyler (Penn.)	18	Strat.	Depletion	40-acre spacing units; 75' topographic tolerance. (Order 8-59.) Spacing waived for Tyler "A" sand reservoir within Tyler "A" Sand Unit except no well can be closer than 660' to Unit boundary. (Order 35-65.)	A waterflood project of the Tyler "A" sand was commenced in February, 1966, using Third Cat Creek water. (Order 35-65.)
Kibbey (Miss.)	0	Structural	Water Drive	State-wide spacing. (Order 15-54.) Commingling of production from Tyler and Kibbey permitted in one well per (Order 11-65.)	



Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>RAPELJE</b> Claggett, Eagle, Judith River, Virgelle (U. Cret.)	9	Structural-Strat.	Water Drive	160-acre spacing. Wells no closer than 990' to unit boundary. Commingling after administrative approval. (Order 29-73.)	None
<b>RATTLESNAKE COULEE</b> Sunburst (L. Cret.) Oil & Gas Bow Island (L. Cret.) Gas	2 1	Strat.	Depletion	State-wide.	None
<b>RAYMOND</b> Nisku (Dev.) Duperow (Dev.) Winnipegosis (Dev.) Red River (Ord.)	2 1 3 1	Structural-Strat.	Depletion Water Drive	320-acre spacing units. Wells 660' from spacing unit boundary. (Order 38-72.)	Produced water injected into Dakota formation. (Order 38-A-74.)
<b>RAYMOND, NORTHEAST</b> Winnipegosis (Dev.) (Dual) Red River (Ord.)	1	Structural-Strat.	Depletion Water Drive	160-acre spacing units. Wells 660' from spacing unit boundary. (Order 12-74.)	None
<b>REAGAN</b> Sun River (Miss.) Oil (Shut-in) Gas	44 19 4	Structural	Gas Cap- Water Drive	State-wide. (Order 17-54.)	A pressure maintenance project utilizing gas injection was started in 1961. (Order 21-60.) Water-flood. (Order 27-72.)
<b>REAGAN, WEST</b> Blackleaf (U. Cret.) Gas	10	Strat.	Depletion	State-wide. Injected into Reagan field as secondary recovery agent.	None
<b>RED CREEK</b> Cut Bank (L. Cret.) Oil & Gas (Shut-in) Sun River (Miss.) Oil & Gas (Shut-in)	7 2 12 9	Strat. Structural	Depletion Water Drive	40-acre spacing units; wells in center of spacing unit with 75' topographic or obstruction tolerance; spacing and field rules waived for unitized portion. (Orders 16-58, 73-62, 31-64, 5-70)	Excess produced water injected into Bow Island and Madison. (Orders 22-63, 37-64.) A water-flood project in the Cut Bank sand was initiated in June, 1965, using Madison water.
<b>RED FOX</b> Nisku (Dev.)	1	Structural	Water Drive	Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.)	None
<b>REDSTONE</b> Winnipegosis (Dev.) (Shut-in)	1	Unknown	Water Drive	One well per 160-acre unit, but no closer than 660' from unit boundary.	None
<b>REPEAT</b> Red River (Ord.)	1	Unknown	Water Drive	State-wide.	None

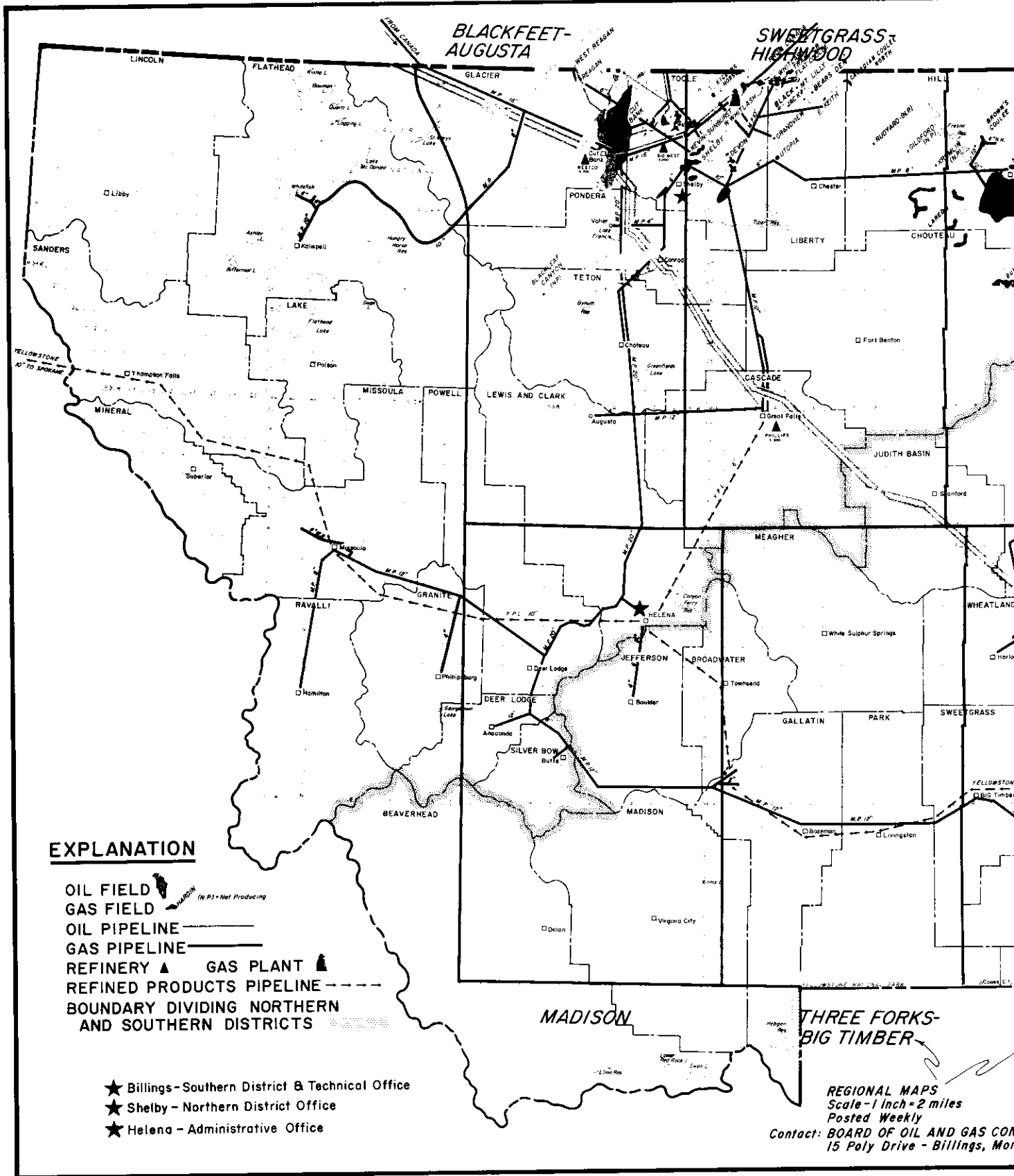
Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>RESERVE</b> Winnipegosis (Dev.)	1	Structural-Strat.	Water Drive	160-acre spacing units; permitted well within 1320' square in center of quarter section. Commingling of Red River and Interlake production permitted on individual well basis. (Orders 34-66, 27-67.)	Excess water injected into Dakota sand. (Order 23-A-67.)
Interlake (Sil.)	1	Structural-Strat.	Water Drive		
Red River (Ord.)	4	Structural-Strat.	Water Drive		
<b>RICHEY</b> Charles (Miss.)	1	Structural	Water Drive	State-wide.	Original 80-acre spacing revoked. (Order 11-73.)
<b>RICHEY, SOUTHWEST</b> Interlake, Dawson Bay (Sil.) (Dev.)	5	Structural	Depletion	160-acre spacing units; wells no closer than 900' from boundary of spacing unit. (Order 25-62.)	A waterflood project in the Interlake and Dawson Bay was started in 1965. (Order 34-65.)
<b>RIRAP COULEE</b> Ratcliffe (Miss.)	1	Structural-Strat.	Depletion	State-wide.	None
<b>ROSCOE</b> Lakota (L. Cret.)	1	Structural	Water Drive	State-wide.	None
<b>ROSEBUD</b> Tyler (L. Penn.)	4	Structural-Strat.	Unknown	State-wide.	None
<b>ROUGH CREEK</b> Muddy (L. Cret.)	1	Structural-Strat.	Depletion	State-wide. Formerly called Duncan Creek.	None
<b>RUDYARD</b> Sawtooth (M. Jur.) Gas	3	Structural	Volumetric	640-acre spacing units consisting of one section; well location in center of NW <sup>1</sup> / <sub>4</sub> of section with 75' topographic tolerance. (Order 2-58.)	None
<b>RUSH MOUNTAIN</b> Winnipegosis (M. Dev.) Red River (Ord.)	1	Structural	Volumetric-Water Drive	State-wide. Dual zone completion in discovery well.	Excess water injected into Dakota sand. (Order 5-A-71.)
<b>SALT LAKE</b> Bakken-Nisku (Miss.-Dev.)	3	Structural	Water Drive	State-wide.	None

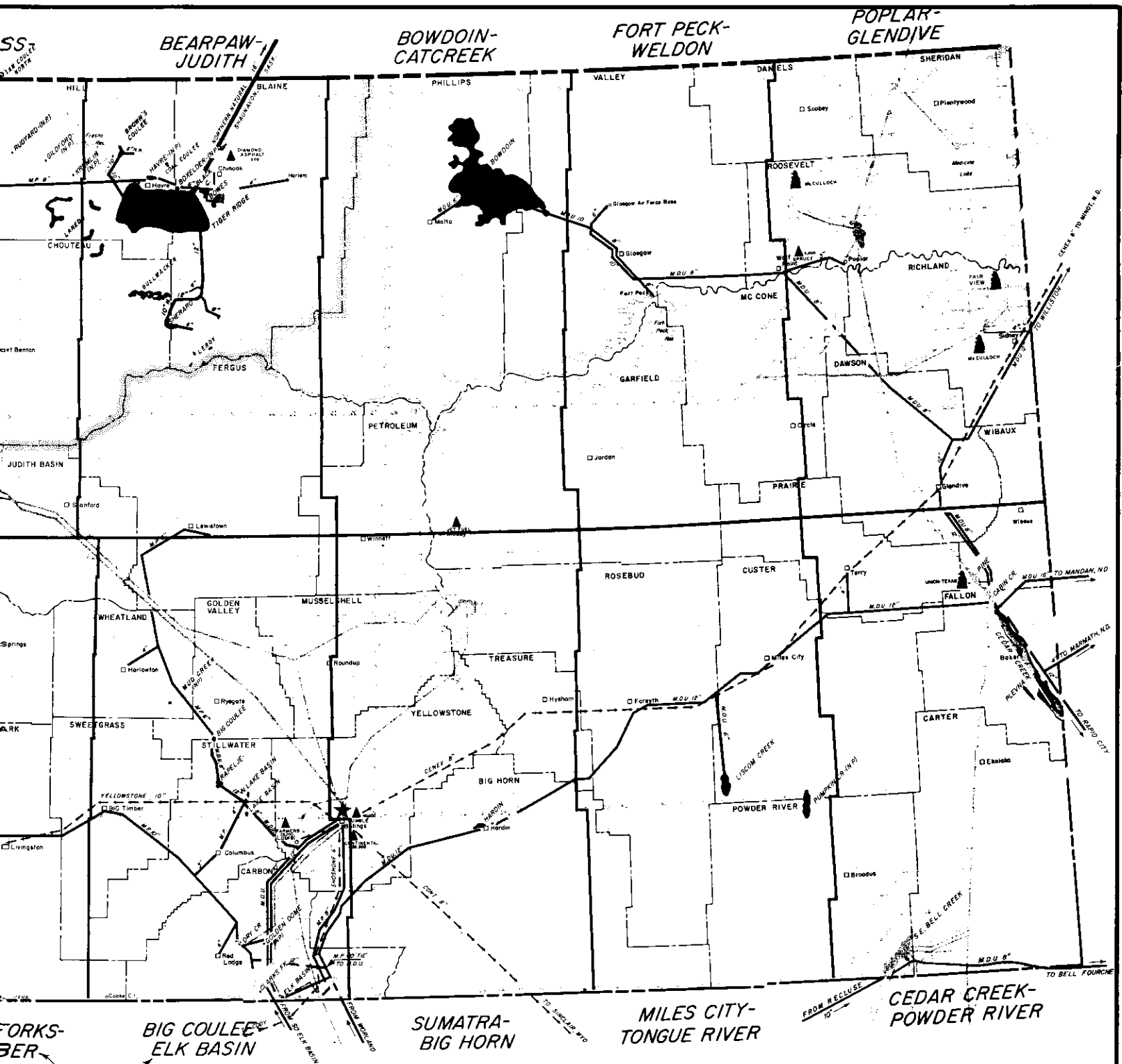
Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>SAND CREEK</b> Interlake, Red River (Sil.) (Ord.)	4 2 (Shut-in)	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Wells located in center of NW¼ and SE¼ of each quarter section. (Order 16-59.) Commingling of production from Interlake and Red River authorized per (Order 49-62.)	Excess produced water is injected into the Swift formation. (Order 9-61.)
<b>SECOND CREEK</b> Red River (Ord.)	2	Structural	Volumetric Water Drive	State-wide.	None
<b>SHEEPHERDER</b> Tyler (L. Penn.)	2	Structural-Strat.	Unknown	State-wide.	None
<b>SHELBY AREA</b> Sunburst (L. Cret.) Gas Swift (Jur.) Gas	33	Structural-Strat.	Depletion	State-wide. Field outline not delineated. A few small Swift sand wells commingled with Sunburst.	None
<b>SHERARD</b> Eagle (U. Cret.) Gas	11 1 (Shut-in)	Structural-Strat.	Volumetric Water Drive	640-acre spacing units; 990' from section line. (Order 1-74.)	None
<b>SHOTGUN CREEK</b> Ratcliffe (Miss.)	1	Structural	Water Drive	State-wide.	None
<b>SIDNEY</b> Mission Canyon (Miss.)	1	Structural	Water Drive	State-wide.	None
<b>SIOUX PASS</b> Interlake (Sil.) Red River (Ord.)	1 2	Structural	Volumetric Water Drive	State-wide.	None
<b>SIOUX PASS, NORTH</b> Interlake (Sil.) Red River (Ord.) Dual Red River (Ord.)	1 2	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. (Order 12-75.)	None
<b>SNYDER</b> Tensleep (Penn.)	3	Structural	Water Drive	10-acre spacing units with center 5-spot permitted; 150' topographic tolerance. (Order 45-62.)	None
<b>SOAP CREEK</b> Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.)	19	Structural	Water Drive	One well per 10-acre spacing unit per producing formation; well location in center of spacing unit with 100' topographic tolerance. (Order 26-60.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>SPRING LAKE</b> Nisku (Dev.)	1	Structural	Depletion	One well per 160-acre spacing unit. Well location anywhere within 840' square in center of spacing unit. (Order 6-63.)	None
Red River (Ord.)	2	Structural	Depletion		
<b>SQUAW COULEE</b> (Now included as part of Tiger Ridge Field.) (Order 10-70.)					
<b>STENSVAD</b> Tyler (Penn.)	8	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 200' tolerance. (Orders 2-59, 7-60.) Wells may be drilled anywhere within waterflood unit boundary, no closer than 660' from unit boundary. (Orders 5-65, A amended.)	A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.)
	9				
<b>SUMATRA</b> Tyler (Penn.) Oil & Gas	94	Strat.	Depletion	40-acre spacing units; well located in center of unit with 75' tolerance. (Order 14-58.)	Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70, 16-72, 24-74.)
<b>TIGER RIDGE</b> Judith River (U. Cret.) Gas	6	Structural-Strat.	Depletion-Water Drive	160-acre spacing; location no closer than 660' to unit boundary. (Order 32-73.) State-wide, for part not unitized. Two units: (Order 11-72 and 41-72.) Wells 990' from unit boundary. Originally one well per section within 2640' square in center of each unit and no closer than 1320' from boundary of unit. Changed to state-wide spacing by (Order 10-70.)	(Orders 17-67, 23-68, 10-70.)
Eagle (U. Cret.) Gas	139	Structural-Strat.	Depletion-Water Drive		
	12				
Sawtooth (Jur.) Oil	1	Structural-Strat.	Water Drive	State-wide.	
<b>TRAIL CREEK</b> Sunburst (L. Cret.) Gas	2	Structural-Strat.	Water Drive-Depletion	One well per 320 acres consisting of S $\frac{1}{2}$ and N $\frac{1}{2}$ of each governmental section but no closer than 990' from spacing boundary. (Order 33-70.)	None
<b>TULE CREEK</b> Nisku (Dev.)	5	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 26-62, 6-65, 11-67.)	Produced water injected into Dakota and Judith River formations. (Orders 12-66, 24-67.)
	1				
<b>TULE CREEK, EAST</b> Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 40-64, 6-65.)	Water injected into Judith River formation. (Order 13-68.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>TULE CREEK, SOUTH</b> Nisku (Dev.)	3	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit.	Authority given to dispose of produced water into Dakota. (Order 44-64.) Into Judith River formation. (Order 29-67.)
<b>UTOPIA</b> Sawtooth (Jur.) Gas Madison (Miss.)	4	Structural	Depletion Water Drive	State-wide. Two wells produced small amount of oil from Swift sand.	None
<b>VIDA</b> Interlake (Sil.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within an 840' square in center of each unit. (Order 39-63.)	Water injected into Lakota formation. (Order 14-68.)
<b>VOLT</b> Nisku (Dev.)	5	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit. (Orders 27-64, 6-65, 32-65.)	Excess produced water is disposed into Judith River. (Order 3-65, 37-A-74.)
Charles "C" (Miss.)	1	Structural	Water Drive	State-wide.	
<b>WAGON BOX</b> Tyler (Penn.)	2	Structural- Strat.	Unknown	State-wide.	None
<b>WEED CREEK</b> Amsden (L. Penn.)	0	Structural	Water Drive	State-wide.	None
<b>WELDON</b> Kibbey (Miss.)	3 9 (Shut-in)	Structural	Partial Water Drive	80-acre spacing unit; each quarter section divided into two separate units running in either a north-south or east-west direction; well location in center of NE 1/4 and SW 1/4 of quarter section with 200' topographic tolerance. (Order 9-65.)	Excess produced water is disposed into the Dakota, Lakota, Morrison, and Charles formations. (Orders 31-65, 47-65, 37-66, 16-67.)
<b>WEST BUTTE</b> Sunburst (L. Cret.) Oil	1	Structural- Strat.	Depletion	State-wide, except W 1/2 Section 16 is considered a single spacing unit.	None
Sawtooth (Jur.) Gas Madison (Miss.) Gas	1	Structural	Water Drive	Sawtooth-Madison gas commingled, unitized. (Order 5-72.) No well closer than 330' from unit boundary.	
<b>WEST REAGAN</b> (See Reagan, West)					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
<b>WHITLASH</b> Bow Island, Kootenai, Swift (Cret.) (Jur.)	44 7 5 4	Structural- Strat.	Volumetric	Gas: 300' from legal subdivision line and 2400' between wells, 75' topographic tolerance. Oil: 330' from legal subdivision line and 650' between wells; 5-spot location at center of 40-acre tract permitted; 75' topographic tolerance. General Rules 207, 211, 219, 221, 223, and 224 suspended. (Orders 16-54, 27-70.)	None
<b>WHITLASH, WEST</b> Sunburst, Swift (Cret.) (Jur.) Sawtooth (Jur.)	1 9 1	Structural- Strat.	Volumetric	Gas: 160-acre spacing units consisting of quarter sections; well location anywhere within a 660' square in center of spacing unit. Oil: 330' from legal subdivision line, 650' between wells in same reservoir on same lease; 5-spot location permitted. (Orders 61-62, 22-65 as amended.)	None
<b>WILLOW CREEK, NORTH</b> Tyler (Penn.) Oil	2	Structural- Strat.	Depletion Water Drive	State-wide.	Pilotflood. (Order 19-72.)
<b>WILLS CREEK, SOUTH</b> Interlake (Sil.)	2	Structural	Partial Water Drive	160-acre spacing units. Well location in center of SE $\frac{1}{4}$ of each unit with 175' topographic tolerance. (Orders 5-64, 30-66.)	Waterflood initiated 12-1-73. (Order 23-73.)
<b>WINNETT JUNCTION</b> Tyler (Penn.)	4	Strat.	Depletion Water Drive	State-wide.	None
<b>WOLF SPRINGS</b> Amsden (Penn.)	2	Structural	Water Drive	80-acre spacing units consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of each quarter section. Well location in center of NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Order 4-56, 9-59.)	None
<b>WOODROW</b> Charles, Duperow, Interlake Red River (Ord.)	1 1 4	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; well locations in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 200' topographic tolerance. (Order 47-62.)	Produced water injected into Dakota (Order 48-62.)
<b>WRIGHT CREEK</b> Muddy (L. Cret.)	5 1	Structural- Strat.	Depletion Water Drive	80-acre spacing consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of quarter section with locations in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 200' tolerance.	None





**MONTANA**  
**OIL AND GAS FIELDS, PIPELINES AND REFINERIES**  
 1974

BOARD OF OIL AND GAS CONSERVATION

ALL MAPS  
 1/4 inch = 2 miles  
 Weekly  
 OFFICE OF OIL AND GAS CONSERVATION  
 Drive - Billings, Montana 59101





PRODUCING OIL FIELDS - 1974

MONTANA BOARD OF OIL AND GAS CONSERVATION

Table with columns: DEPTH, GRAVITY, NET PAY, POROSITY, SW, O.O.I.P., PRODUCTIVE AREA, RECOVERY FACTOR, ULTIMATE RECOVERY, CUMULATIVE PRODUCT, RESERVES, 1974 PRODUCTION, ULTIMATE RECOVERY, and LINE NO.

310,000 34,553,962 94,668

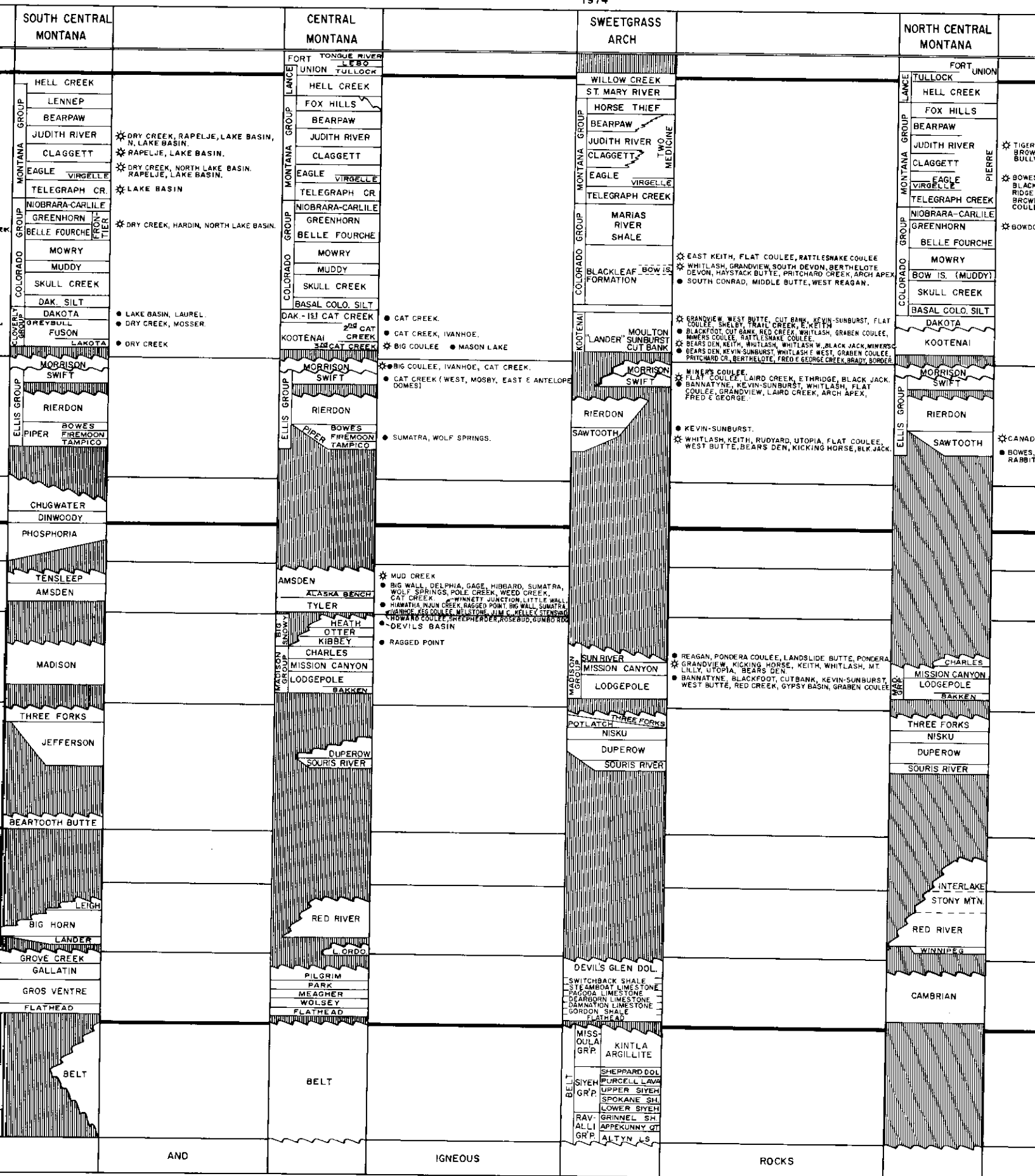
MONTANA BOARD OF OIL AND GAS CONSERVATION

ERA	PERIOD	SOUTHWESTERN MONTANA	CRAZY MOUNTAIN BASIN	BIG HORN BASIN		SOUTH CENTRAL MONTANA			
CENOZOIC	TERTIARY	BEAVERHEAD	TONGUE RIVER	FORT UNION					
			TULLOCK	LANCE					
MESOZOIC	CRETACEOUS	UPPER	LIVINGSTON	HELL CR.	MEETEETSE		HELL CREEK		
			LIVINGTON	LENNEP	MEETEETSE		LENNEP		
			LIVINGTON	BEARPAW	MEETEETSE		BEARPAW		
			LIVINGTON	JUDITH RIVER	MESA VERDE		JUDITH RIVER	★ DRY CREEK, RAPELJE, LAKE BASIN, N. LAKE BASIN.	
			LIVINGTON	CLAGGETT	MESA VERDE		CLAGGETT	★ RAPELJE, LAKE BASIN.	
		LOWER	MONTANA	EAGLE	VIRGELLE	CODY SHALE		EAGLE	★ DRY CREEK, NORTH LAKE BASIN, RAPELJE, LAKE BASIN.
			MONTANA	TELEGRAPH CR.	VIRGELLE	CODY SHALE		TELEGRAPH CR.	★ LAKE BASIN
			MONTANA	NIOBRARA-CARLILE	NIOBRARA-CARLILE	FRONTIER		NIOBRARA-CARLILE	
			MONTANA	FRONTIER	NIOBRARA-CARLILE	FRONTIER	● ELK BASIN, NW ELK BASIN, CLARKS FORK.	FRONTIER	★ DRY CREEK, HARDIN, NORTH LAKE BASIN.
			MONTANA	MOWRY	MOWRY	FRONTIER		MOWRY	
JURASSIC	UPPER	MORRISON	MORRISON	MORRISON		MORRISON			
		SWIFT	SWIFT	SWIFT		SWIFT			
		RIERDON	RIERDON	RIERDON		RIERDON			
		SAWTOOTH	PIPER	GYPSUM SPRING		PIPER			
		SAWTOOTH	PIPER	GYPSUM SPRING		PIPER			
	MIDDLE	THAYNES	CHUGWATER	CHUGWATER		CHUGWATER			
		WOODSIDE	DINWOODY	DINWOODY		DINWOODY			
		DINWOODY	PHOSPHORIA	PHOSPHORIA		PHOSPHORIA			
		PHOSPHORIA	PHOSPHORIA	PHOSPHORIA		PHOSPHORIA			
		PHOSPHORIA	PHOSPHORIA	PHOSPHORIA		PHOSPHORIA			
TRIASSIC	LOWER ?	QUADRANT	TENSLEEP	TENSLEEP	● ELK BASIN, NW ELK BASIN.	TENSLEEP			
		AMSDEN	AMSDEN	AMSDEN	● ELK BASIN, FRANNIE, NW ELK BASIN, SNYDER.	AMSDEN			
		AMSDEN	AMSDEN	AMSDEN	● ELK BASIN	AMSDEN			
		AMSDEN	AMSDEN	AMSDEN		AMSDEN			
		AMSDEN	AMSDEN	AMSDEN		AMSDEN			
	LOWER ?	BIG SNOWY B / OR BRAZER GRP	CHARLES	MADISON	● ELK BASIN, NW ELK BASIN.	MADISON			
		MADISON	MISSION CANYON	MADISON		MADISON			
		SAPPINGTON	LODGEPOLE	MADISON		MADISON			
		THREE FORKS	THREE FORKS	THREE FORKS		THREE FORKS			
		THREE FORKS	THREE FORKS	THREE FORKS	● ELK BASIN	THREE FORKS			
DEVONIAN	UPPER	JEFFERSON	DUPEROW	DUPEROW		JEFFERSON			
		MAYWOOD	SCOURIS RIVER	DUPEROW		JEFFERSON			
		MAYWOOD	SCOURIS RIVER	DUPEROW		JEFFERSON			
		MAYWOOD	SCOURIS RIVER	DUPEROW		JEFFERSON			
		MAYWOOD	SCOURIS RIVER	DUPEROW		JEFFERSON			
	MIDDLE	BEARTOOTH BUTTE	BEARTOOTH BUTTE	BEARTOOTH BUTTE		BEARTOOTH BUTTE			
		BEARTOOTH BUTTE	BEARTOOTH BUTTE	BEARTOOTH BUTTE		BEARTOOTH BUTTE			
		BEARTOOTH BUTTE	BEARTOOTH BUTTE	BEARTOOTH BUTTE		BEARTOOTH BUTTE			
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		BEARTOOTH BUTTE	BEARTOOTH BUTTE	BEARTOOTH BUTTE		BEARTOOTH BUTTE			
SILURIAN	LOWER	BIG HORN	BIG HORN	BIG HORN	● ELK BASIN	BIG HORN			
		BIG HORN	BIG HORN	BIG HORN		BIG HORN			
		BIG HORN	BIG HORN	BIG HORN		BIG HORN			
		BIG HORN	BIG HORN	BIG HORN		BIG HORN			
		BIG HORN	BIG HORN	BIG HORN		BIG HORN			
	UPPER	RED LION	GROVE CREEK	GROVE CREEK		GROVE CREEK			
		PILGRIM PARK	SNOWY RANGE	GALLATIN		GALLATIN			
		MEAGHER	PILGRIM PARK	GALLATIN		GALLATIN			
		SILVER HILL	MEAGHER	GROS VENTRE		GROS VENTRE			
		WOLSEY	WOLSEY	GROS VENTRE		GROS VENTRE			
CAMBRIAN	MIDDLE	FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
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		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
	LOWER	FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
		FLATHEAD	FLATHEAD	FLATHEAD		FLATHEAD			
PROTEROZOIC	PRE-CAMBRIAN	BELT	BELT	BELT		BELT			
		BELT	BELT	BELT		BELT			
ARCHEOZOIC				ME TAMORPHIC		AND			

# GENERALIZED STRATIGRAPHIC CORRELATION CHART

SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS \*

• OIL ✱ GAS  
1974



# PRODUCTION CHART

FIELDS \*

JOHN H. HUGHES, GEOLOGIST

JUDSON D. SWEET, PETROLEUM ENGINEER

NORTH CENTRAL MONTANA		NORTH POWDER RIVER BASIN		WILLISTON BASIN		PERIOD	ERA		
FORT UNION TULLOCK HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE VIRGELLE TELEGRAPH CREEK NIOBRARA-CARLILE GREENHORN BELLE FOURCHE MOWRY BOW IS. (MUDDY) SKULL CREEK BASAL COLO. SILT DAKOTA KOOTENAI MORRISON SWIFT RIERDON SAWTOOTH		FORT TONGUE RIVER UNION HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE SHANNON TELEGRAPH CREEK NIOBRARA-CARLILE GREENHORN BELLE FOURCHE MOWRY MUDDY (NEWCASTLE) SKULL CREEK BASAL COLO. SILT DAKOTA FUSON (KOOTENAI) LAKOTA MORRISON SUNDANCE GYPSUM SPRING CHUGWATER SPEARFISH MINNEKAHTA OPECHE TENSLEEP MINNELUSA AMSDEN CHARLES MISSION CANYON LODGEPOLE BAKKEN THREE FORKS NISKU DUPELOW SOURIS RIVER INTERLAKE STONY MTN. RED RIVER BIG HORN WINNIPEG LOWER ORDOVICIAN GROVE CREEK GALLATIN GROS VENTRE DEADWOOD		FORT TONGUE RIVER UNION LUDLOW HELL CREEK FOX HILLS BEARPAW JUDITH RIVER CLAGGETT EAGLE TELEGRAPH CREEK NIOBRARA-CARLILE GREENHORN BELLE FOURCHE MOWRY MUDDY (NEWCASTLE) SKULL CREEK BASAL COLO. SILT DAKOTA FUSON (KOOTENAI) LAKOTA MORRISON SWIFT RIERDON BOWES FIRE MOON TAMPECO KLINE GIRDARD PINE SAUDE SPEARFISH MINNEKAHTA OPECHE MINNELUSA AMSDEN TYLER HEATH OTTER KIBBEY CHARLES MISSION CANYON LODGEPOLE BAKKEN THREE FORKS BIRDBEAR (NISKU) DUPELOW SOURIS RIVER DAWSON BAY PRAIRIE EVAP WINNIPEGOSIS ASHERN INTERLAKE STONY MTN. RED RIVER WINNIPEG LOWER ORDOVICIAN DEADWOOD		* CEDAR CREEK, PLEVNA. * CEDAR CREEK	* LODGE GRASS, SOAP CREEK, SNYDER * SOAP CREEK. * WELDON, EAST COW CREEK * FLAT LAKE, SHOTGUN CREEK, SMOKE CREEK, KATY LAKE, DWYER, POPLAR, RICHEY, PRAIRIE ELK, COW CREEK, VOLT, MINERAL BENCH, GAS CITY, GOOSE LAKE, RIPRAP C. * SONEY BRORSON, CABIN CREEK, MONARCH, PENNEL, POPLAR, OUTLOOK, HARDSCRABBLE CREEK, SHOTGUN CREEK, SOUTH FLAT LAKE. * PINE, PENNEL, LOOKOUT BUTTE, SALT LAKE. * TULE CREEK, BENRUD, E. BENRUD, LONE TREE, SPRING LAKE, NE. BENRUD, VOLT, SO. TULE CREEK, E. TULE CREEK, RED FOX, SALT LAKE, CHELSEA CREEK, RAYMOND, MINERAL BENCH, WOODROW. * SW RICHEY. * RED STONE, OUTLOOK, WEST OUTLOOK, FAIRVIEW, RESERVE, RUSH MOUNTAIN, RAYMOND, NE. RAYMOND * BIG MUDDY CREEK, SIOUX PASS, N. SIOUX PASS, DEER CREEK, MONARCH, OUTLOOK, PENNEL, PINE, SAND CR., SW. RICHEY, CABIN CR., LOOKOUT BUTTE, WILLS CR., WOODROW, VIDA, RESERVE. * GLENDAVE, LOOKOUT BUTTE, PENNEL, WOODROW, BURNS CR., NOKLY, RAYMOND, SECOND CREEK, DUPONT, CABIN CR., DEER CR., GLENDAVE, LITTLE BEAVER, LITTLE BEAVER EAST, MONARCH, OUTLOOK, PENNEL, PINE, REPEAT, SAND CR., WILLS CR., FERTILE PRAIRIE, LOOKOUT BUTTE, WOODROW, RESERVE, GAS CITY, FAIRVIEW, BRORSON, RUSH MTN., SPRING LAKE, BRUSH LAKE, BAINEVILLE, CULBERTSON, FROID, HAY CREEK, GIRARD, CANAL, FT. GILBERT, OTIS CR., LONETREE * SIOUX PASS, N. SIOUX PASS, LONE BUTTE, NE. RAYMOND, BIG MUDDY CREEK.	UPPER LOWER UPPER MIDDLE LOWER LOWER ? PERMIAN PENNSYLVANIAN MISSISSIPPIAN UPPER MIDDLE LOWER UPPER MIDDLE LOWER UPPER MIDDLE LOWER	CRETACEOUS MESSOZOIC JURASSIC TRIASSIC PERMIAN PENNSYLVANIAN MISSISSIPPIAN DEVONIAN SILURIAN ORDOVICIAN CAMBRIAN PRE-CAMBRIAN PROTEROZOIC ARCHEOZOIC

\* SOME FIELDS SHOWN ARE DEPLETED OR NO LONGER PRODUCTIVE.