

Montana

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Oil and Gas Conservation Division

Thomas L. Judge, Governor

ANNUAL REVIEW FOR THE YEAR 1975

to

OIL AND GAS

19

BOARD OF OIL AND GAS CONSERVATION

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DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

Oil and Gas Conservation Division

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Relating to

OIL AND GAS

Volume 19

BOARD OF OIL AND GAS CONSERVATION

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Chester, Montana 59522

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P.O. Box 997
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1975
SUMMARY OF YEAR ACTIVITIES

Oil Produced..... 32,843,674 Bbls.

Oil Imported (Refined)

Canadian - 19,373,228

Wyoming - 19,796,361

39,169,589 Bbls.

Oil Exported (Transporters)..... 30,947,338 Bbls.

Gas Withdrawals

Natural 40,659,602

Associated 3,013,108

43,672,602 Mcf.

Averages: (365 days)

Oil Produced 89,983 Bbls.

Oil Imported 107,314 Bbls.

Oil Exported 84,787 Bbls.

Natural Gas 119,651 Mcf.

Board of Oil and Gas Conservation of the State of Montana

Thomas L. Judge, Governor

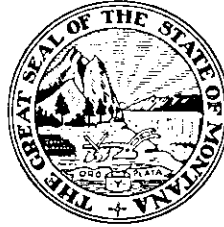
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Southern District Field Office 15 Poly Drive, Billings, Montana 59101
Northern District Field Office 218 Main Street, Shelby, Montana 59474

Annual Review for the Year 1975 Volume 19

ANNUAL REVIEW — MONTANA 1975

More wells drilled for oil and gas were completed in Montana during 1975 than any of the previous five years. A total of 387 wells were completed as oil or gas producers, 122 more than in 1974.

The Montana Board of Oil and Gas Conservation recorded a total of 845 wells drilled, including 15 new gas field discoveries and six oil field discoveries. A total of 257 wildcats resulted in 21 discoveries for a success ratio of 8.2%; near the 9% success ratio of 1974. Infield programs featured the 1975 overall drilling. Of the 588 development wells drilled, 105 were completed as oil wells and 261 produced gas for a success ratio of 62%. This compares to a 52% success ratio for 1974. Development well completions also include four significant extensions to established fields and two field wells that encountered new pay zones.

Oil production for 1975 was down from the previous year's production. The production of oil decreased from 34,553,962 barrels in 1974 to 32,843,674 barrels. This decrease was mainly due to a normal production decline at Bell Creek Field in the Powder River Basin and Cut Bank Field in northern Montana. The Tyler sands of Central Montana, however, continue to show a substantial increase in oil production, where 303 producing wells had a total output of 3,954,024 barrels for 1975, up 619,265 barrels from 1974.

Natural gas production of 43,622,602 MCF for 1975 presents a 6,769,065 MCF decrease from 50,391,667 MCF shown for 1974. This is largely due to the duplicate inclusion of storage gas at Cedar Creek Field into the reported produced gas total for 1974. Tiger Ridge also had a decline of production, down 3,732,709 MCF from 1974.

Gas was produced from seven additional areas in 1975 that were not on stream in 1974; including Bears Den Field in Liberty County, Brown's Coulee and Coal Coulee in Hill County, North Clark's Fork and South Clark's Fork in Carbon County, Pumpkin Creek in Custer County, and Strawberry Creek in Toole County.

Most of the drilling during 1975 was again directed at shallow upper Cretaceous gas sands in north-central Montana predominantly in the Bowdoin Dome area of Phillips County and the Bearpaw Arch area of Blaine and Hill counties. Considerable interest was also demonstrated in the Kevin Sunburst Dome area in the northwestern part of the State. A total of 136 wells were drilled in the Bowdoin Dome area with one of the eleven wildcats drilled and 119 of the 125 development wells being completed as successful gas producers. A major program of 50 exploratory wells and 159 development wells in the Bearpaw Arch area resulted in four gas discoveries, one development oil well and 60 infield gas completions. The Kevin Sunburst Dome area drilling activity consisted of 20 wildcats and 46 development wells for a total of 66 wells drilled, including 4 gas discoveries, 12 oil and 19 gas development completions.

Drilling for added oil production from the Tyler sands along the Central Montana uplift continues to accelerate. A total of 78 wells were drilled, 23 exploratory and 45 development, resulting in three discoveries and twenty development producers.

The dominant interest in the shallow gas producing sands of northern Montana and oil bearing Tyler sands of Central Montana is expected to continue in 1976, with the possible increase in exploratory drilling for deeper reservoirs (Madison, Devonian, Silurian and Red River formations) in the Williston Basin area of northeastern Montana.

A renewed interest is being shown in the overthrust area along the western portion of Montana due to recent major discoveries on the structure south of the State boundary. Exploratory research is underway to delineate drillable prospects. The trend, which is sparsely drilled, is known to contain the reservoir rock and entrapment for potential hydrocarbon accumulations of major proportions.

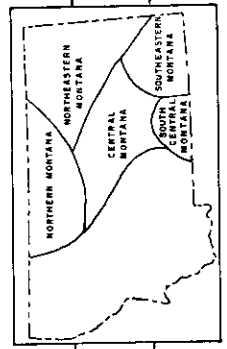
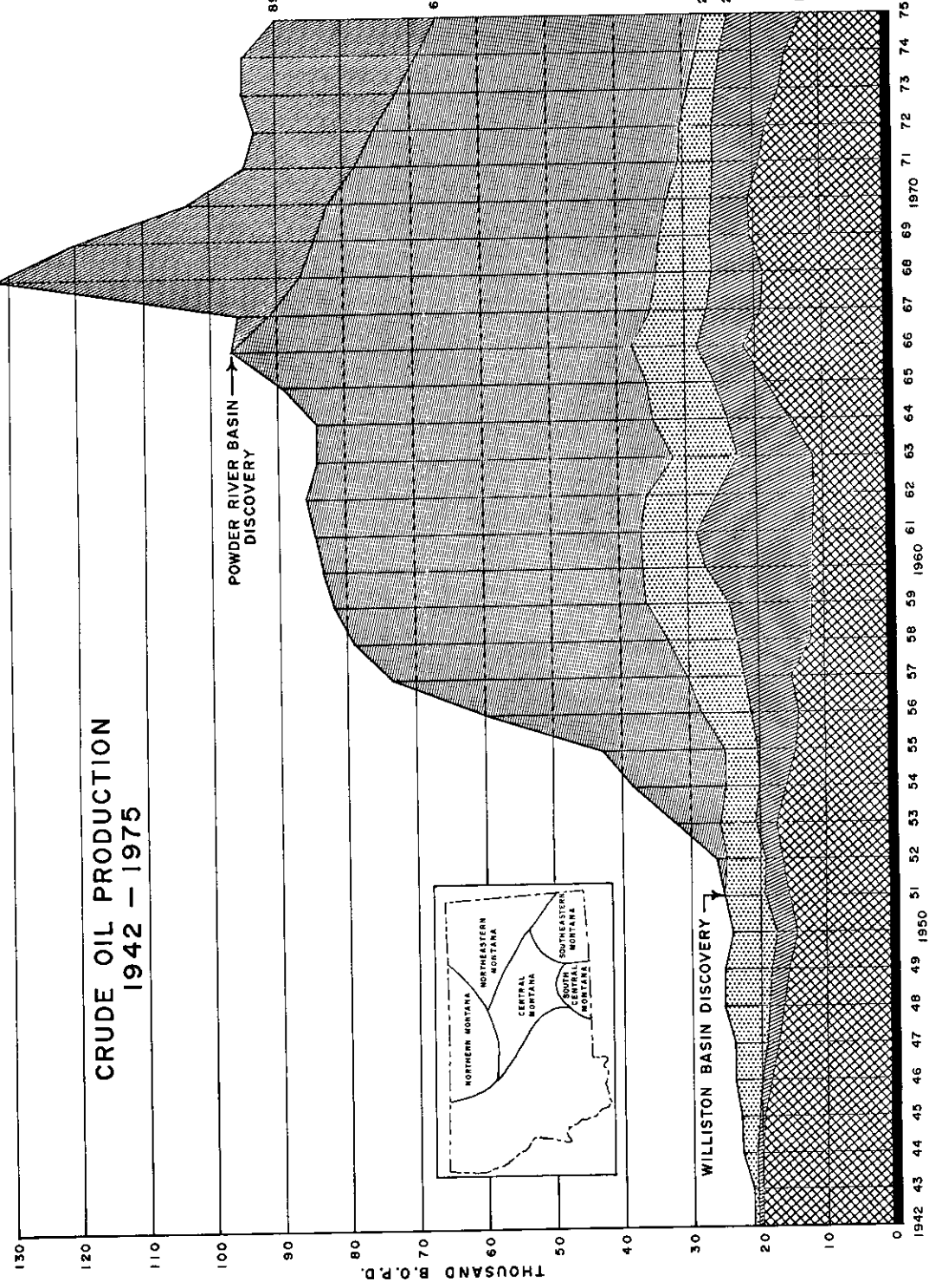
FIVE YEAR SUMMARY

| | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 |
|--|------------|------------|------------|------------|------------|------------|
| Production, Northern Montana—Bbls. | 7,680,831 | 7,292,476 | 6,646,908 | 5,948,826 | 5,464,319 | 4,551,324 |
| South Central—Bbls. | 2,329,187 | 2,028,304 | 1,742,749 | 1,515,088 | 1,432,528 | 1,318,779 |
| Central—Bbls. | 1,915,273 | 2,274,124 | 2,817,045 | 3,238,967 | 3,334,759 | 3,954,024 |
| Williston Basin—Bbls. | 18,110,147 | 17,042,703 | 16,361,771 | 15,735,703 | 14,939,292 | 14,312,685 |
| Powder River Basin—Bbls. | 7,843,259 | 5,961,116 | 6,335,666 | 8,181,598 | 9,383,064 | 8,706,862 |
| TOTAL | 37,878,697 | 34,598,723 | 33,904,139 | 34,620,182 | 34,553,962 | 32,843,674 |
| No. of Producing Wells, Northern Montana | 1,806 | 1,768 | 1,856 | 1,708 | 1,802 | 2,067 |
| South Central..... | 92 | 96 | 83 | 83 | 86 | 100 |
| Central..... | 200 | 212 | 224 | 245 | 267 | 303 |
| Williston Basin..... | 743 | 748 | 706 | 709 | 712 | 734 |
| Powder River Basin..... | 371 | 321 | 265 | 248 | 233 | 231 |
| TOTAL..... | 3,212 | 3,145 | 3,134 | 2,993 | 3,100 | 3,435 |
| Average Daily Production/Well—BOPD, | | | | | | |
| Northern Montana.. | 11.6 | 11.3 | 9.8 | 9.5 | 8.3 | 6.0 |
| South Central | 69.3 | 57.9 | 57.4 | 50.0 | 45.6 | 36.1 |
| Central | 26.2 | 29.4 | 34.4 | 36.2 | 34.2 | 35.8 |
| Williston Basin..... | 66.8 | 62.4 | 63.3 | 60.8 | 57.4 | 53.4 |
| Powder River Basin | 57.9 | 50.9 | 65.3 | 90.4 | 110.3 | 103.2 |
| STATE AVG. | 32.3 | 30.1 | 29.6 | 31.7 | 30.5 | 26.2 |
| Development Wells Drilled, Oil Wells..... | 60 | 49 | 79 | 46 | 58 | 105 |
| Gas Wells..... | 30 | 36 | 97 | 165 | 179 | 261 |
| Dry Holes..... | 63 | 34 | 87 | 100 | 212 | 222 |
| TOTAL..... | 153 | 119 | 263 | 311 | 449 | 588 |
| Exploratory Wells Drilled, Oils Wells | 12 | 3 | 7 | 6 | 7 | 6 |
| Gas Wells..... | 11 | 22 | 19 | 36 | 21 | 15 |
| Dry Holes..... | 272 | 323 | 435 | 366 | 265 | 236 |
| TOTAL..... | 295 | 348 | 461 | 408 | 293 | 257 |
| TOTAL WELLS DRILLED | 488 | 467 | 724 | 719 | 742 | 845 |
| TOTAL FOOTAGE DRILLED | 1,969,583 | 1,735,222 | 2,300,075 | 1,834,288 | 2,173,519 | 2,467,838 |
| AVERAGE DEPTH OF ALL WELLS..... | 4,396 | 3,716 | 3,177 | 2,551 | 2,929 | 2,921 |

SUMMARY OF DRILLING BY COUNTIES — 1975
STATE OF MONTANA

| County | Wildcats | | | Development | | | Total Wells | Footage Drilled | Average Depth |
|--------------------|------------|----------|-----------|-------------|------------|------------|-------------|------------------|---------------|
| | Dry | Oil | Gas | Dry | Oil | Gas | | | |
| Beaverhead..... | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 13,909 | 13,909 |
| Big Horn..... | 7 | 0 | 0 | 1 | 3 | 1 | 12 | 35,987 | 2,999 |
| Blaine..... | 30 | 0 | 1 | 36 | 1 | 24 | 92 | 188,739 | 2,052 |
| Carbon..... | 6 | 0 | 0 | 5 | 0 | 4 | 15 | 80,206 | 5,347 |
| Carter..... | 7 | 0 | 0 | 0 | 1 | 0 | 8 | 16,157 | 2,020 |
| Chouteau..... | 2 | 0 | 0 | 9 | 0 | 2 | 13 | 15,877 | 1,221 |
| Custer..... | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 6,658 | 2,219 |
| Daniels..... | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 24,277 | 8,092 |
| Dawson..... | 6 | 0 | 0 | 1 | 1 | 0 | 8 | 71,245 | 8,906 |
| Fallon..... | 1 | 0 | 0 | 2 | 7 | 0 | 10 | 92,776 | 9,278 |
| Fergus..... | 11 | 0 | 0 | 10 | 0 | 6 | 27 | 57,378 | 2,125 |
| Garfield..... | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2,202 | 2,202 |
| Glacier..... | 3 | 0 | 0 | 7 | 12 | 3 | 25 | 73,736 | 2,949 |
| Golden Valley..... | 8 | 0 | 1 | 0 | 0 | 0 | 9 | 27,538 | 3,060 |
| Granite..... | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 2,534 | 1,267 |
| Hill..... | 16 | 0 | 3 | 62 | 0 | 36 | 117 | 186,227 | 1,592 |
| Liberty..... | 4 | 0 | 2 | 14 | 8 | 24 | 52 | 134,481 | 2,586 |
| McCone..... | 4 | 1 | 0 | 2 | 3 | 0 | 10 | 66,264 | 6,624 |
| Musselshell..... | 14 | 1 | 0 | 11 | 9 | 0 | 35 | 128,369 | 3,668 |
| Petroleum..... | 10 | 0 | 0 | 0 | 1 | 0 | 11 | 34,290 | 3,117 |
| Phillips..... | 10 | 0 | 1 | 6 | 0 | 119 | 136 | 206,251 | 1,517 |
| Pondera..... | 2 | 0 | 2 | 6 | 7 | 9 | 26 | 48,381 | 1,861 |
| Powder River..... | 1 | 0 | 0 | 2 | 4 | 0 | 7 | 32,442 | 4,635 |
| Richland..... | 4 | 0 | 0 | 2 | 8 | 0 | 14 | 167,908 | 11,993 |
| Roosevelt..... | 7 | 1 | 0 | 0 | 7 | 0 | 15 | 125,380 | 8,359 |
| Rosebud..... | 16 | 2 | 0 | 14 | 11 | 0 | 43 | 206,022 | 4,791 |
| Sheridan..... | 7 | 0 | 0 | 1 | 2 | 0 | 10 | 82,625 | 8,263 |
| Stillwater..... | 3 | 0 | 0 | 8 | 0 | 13 | 24 | 45,368 | 1,890 |
| Sweetgrass..... | 5 | 0 | 1 | 0 | 0 | 0 | 6 | 23,265 | 3,878 |
| Teton..... | 10 | 0 | 0 | 3 | 7 | 0 | 20 | 49,081 | 2,454 |
| Toole..... | 16 | 0 | 4 | 15 | 12 | 19 | 66 | 137,993 | 2,091 |
| Valley..... | 10 | 0 | 0 | 4 | 0 | 0 | 14 | 47,194 | 3,371 |
| Wibaux..... | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 20,440 | 6,813 |
| Yellowstone..... | 6 | 0 | 0 | 0 | 1 | 0 | 7 | 16,638 | 2,377 |
| TOTALS..... | 236 | 6 | 15 | 222 | 195 | 261 | 845 | 2,467,838 | 2,921 |

CRUDE OIL PRODUCTION 1942 - 1975



POWDER RIVER BASIN
DISCOVERY

WILLISTON BASIN DISCOVERY

PERCENT

SOUTHEASTERN MONT.
(Powder River Basin)

NORTHEASTERN MONT.
(Williston Basin)

SOUTH CENTRAL MONT.
(Big Horn Basin)

CENTRAL MONTANA
(Big Snowy Uplift)

NORTHERN MONTANA
(Sweetgrass Arch -
Bearpaw Uplift)

130

120

110

100

90

80

70

60

50

40

30

20

10

0

1942 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 1960 61 62 63 64 65 66 67 68 69 1970 71 72 73 74 75

THOUSAND B.O.P.D.

GAS PRODUCTION DATA — 1975

| Field | County | Producing Formations | 1974 Production M.C.F. |
|-----------------------------|---|---|------------------------------|
| NATURAL GAS: | | | |
| Bears Den..... | Liberty | Sawtooth & Sunburst | 1,825 |
| Big Coulee | Golden Valley & Stillwater | Lakota & Morrison | 1,510,941 |
| Black Coulee | Blaine | Eagle | 92,667 |
| Black Jack..... | Liberty | Sunburst, Swift & Blackleaf | 416,714 |
| Bowdoin..... | Phillips & Valley | Bowdoin & Phillips | 4,733,630 |
| Bowes..... | Blaine | Eagle | 640,675 |
| Brown's Coulee | Hill | Judith River & Eagle | 49,527 |
| Canadian Coulee, North..... | Hill & Liberty..... | Sawtooth | 787,242 |
| Cedar Creek..... | Fallon | Judith River & Eagle | 1,731,359 |
| Coal Coulee | Hill | Eagle | 136,442 |
| Cut Bank & Reagan..... | Glacier & Toole | Cut Bank & Madison..... | 4,291,743 |
| Dry Creek..... | Carbon | Eagle, Frontier & Greybull..... | 696,958 |
| Ethridge | Toole | Bow Island & Swift..... | 106,132 |
| Flat Coulee | Liberty | Kbl, Ksb, Jsw, Kbi | 191,627 |
| Gold Butte | Toole | Bow Island..... | 42 |
| Hardin | Big Horn | Frontier | 26,076 |
| Keith Block..... | Liberty | Bow Island & Sawtooth..... | 1,077,588 |
| Kevin-Sunburst | Toole | Sunburst & Sun River | 521,540 |
| Kicking Horse | Toole | Sun River | 203,468 |
| Lake Basin..... | Stillwater | Kf, Ke, Kve, Ktc, | 1,115,082 |
| Liscom Creek..... | Custer | Shannon | 289,214 |
| Middle Butte..... | Toole | Blackleaf | 21,867 |
| Middle Dry Creek..... | Carbon | Frontier | 4,657 |
| Mt. Lilly | Carbon | Madison | 197,845 |
| North Clark Fork | Carbon | Lakota | 41,286 |
| Plevna | Fallon | Judith River..... | 63,966 |
| Pumpkin Creek | Custer | Shannon | 454,080 |
| Rapelje | Stillwater | Judith River, Claggett, Eagle & Virgelle | 704,373 |
| Sherard..... | Blaine & Chouteau..... | Eagle..... | 2,353,832 |
| South Clark's Fork | Carbon | Greybull | 5,884 |
| South Devon..... | Toole | Bow Island | 144,702 |
| Strawberry Creek..... | Toole | Bow Island..... | 50,492 |
| Tiger Ridge..... | Blaine & Hill | Judith River & Eagle | 15,719,832 |
| Timber Creek..... | Toole | Sunburst | 37,380 |
| Trail Creek | Liberty & Toole | Sunburst | 124,335 |
| Utopia..... | Liberty | Ellis, Sawtooth, & Madison..... | 346,745 |
| West Butte | Toole | Sawtooth & Madison..... | 802,795 |
| Whitlash | Liberty | Bow Island, Kootenai, & Swift..... | 814,931 |
| SUBTOTAL | | | 40,609,494 |
| Associated Gas: | | | |
| Bell Creek..... | Powder | Muddy | 449,001 |
| Brush Lake | Sheridan | Red River | 139 |
| Cabin Creek..... | Fallon | Interlake & Red River | 619,120 |
| Elk Basin..... | Carbon | Tensleep | 372,823 |
| Fairview..... | Richland | Red River | 393,887 |
| Fred & George Creek | Toole | Sunburst & Swift | 16,522 |
| Glendive | Dawson | Red River | 393,887 |
| Pine..... | Dawson, Prairie, Fallon & Wibaux | Interlake & Red River..... | 538,272 |
| Richland Area..... | Richland & Roosevelt..... | Mm, Dw, Si, Orr, | 618,600 |
| TOTAL | | | 43,622,600 |

| | Year 1975 Total Bbls. | Refining Five Year Comparison | | |
|--------------------------------------|--------------------------|-------------------------------|------------|------------|
| | | 1971 | 1972 | |
| REFINING — 1975 | | | | |
| Big West Oil Company | 1,209,324 | | | |
| Continental Oil Company | 16,471,546 | | | |
| Farmers Union Central Exchange, Inc. | 11,178,056 | | | |
| Exxon Company | 15,100,002 | 44,996,860 | 48,464,721 | |
| Phillips Petroleum Company | 2,157,556 | | | |
| Spruce Oil Company | 690,142 | | | |
| Westco Refining Company | 1,291,909 | | | |
| | 48,098,535 | 50,967,206 | 48,052,776 | 48,098,535 |

CALENDAR YEAR 1975

| Fields | BIG WEST OIL CO. | CONTINENTAL OIL CO. | EXXON COMPANY | FARMERS UNION | PHILLIPS PETR.CO. | TESORO PETR. CO. | WESTCO REF. CO. | TOTAL |
|--|-----------------------------|--------------------------------|--------------------------|--------------------------|------------------------------|-----------------------------|----------------------------|-------------------|
| Big Wall | | 70,441 | | | | | | 70,441 |
| Cat Creek | | 29,465 | | 100,537 | | | | 130,002 |
| Cut Bank | 205,574 | | | | 1,256,401 | | 1,168,132 | 2,630,107 |
| Devil's Basin | | 1,207 | 81 | | | | | 1,288 |
| Elk Basin | | 489,977 | 369,655 | | | | | 1,216,963 |
| Flat Coulee | | | | | | | 123,777 | 123,777 |
| Fred & George Creek | 408,564 | | | | | | | 408,564 |
| Ivanhoe | | 34,125 | | | | | | 34,125 |
| Keg Coulee | | 90,922 | | 21,497 | | | | 134,246 |
| Kelley | | | 44,081 | | | | | 44,081 |
| Kevin Sunburst | 563,851 | | | | | | | 563,851 |
| Lodge Grass | | 7,401 | | | | | | 7,401 |
| Mason Lake | | 5,753 | | | | | | 5,753 |
| Melstone | | | | 16,517 | | | | 16,517 |
| Pondera | | | | | 247,670 | | | 247,670 |
| Ragged Point | | 200,935 | | | | | | 200,935 |
| Rosebud | | 142,994 | | | | | | 142,994 |
| Richey Southwest | | | | | | 18,120 | | 18,120 |
| Snyder | | 6,082 | | | | | | 6,082 |
| Sumatra & Stensvad | | 623,523 | | 920,879 | | 472,479 | | 1,972,660 |
| Tule Creek & Others | | | | | | | | 472,479 |
| Whitlash | | | | | 220,425 | | | 220,425 |
| Winnett Junction | | | 15,323 | 49,117 | | | | 49,117 |
| Wolf Springs | | | | | | 196,025 | | 15,323 |
| Volt | | | | | | | | 196,025 |
| Total Montana Oil | 1,177,989 | 1,702,825 | 879,225 | 1,465,878 | 1,724,496 | 686,624 | 1,291,909 | 8,928,946 |
| Canadian Oil Imported | 31,335 | 8,960,007 | 5,605,841 | 4,339,467 | 433,060 | 3,518 | --- | 19,373,228 |
| Wyoming Oil Imported | --- | 5,808,714 | 8,614,936 | 5,372,711 | --- | --- | --- | 19,796,361 |
| Total Montana, Canadian & Wyoming Oil | 1,209,324 | 16,471,546 | 15,100,002 | 11,178,056 | 2,157,556 | 690,142 | 1,291,909 | 48,098,535 |

PERCENTAGE OF CRUDE OIL REFINED

| | AVERAGE BARRELS PER DAY | | | PERCENTAGE OF CRUDE OIL REFINED | | |
|-------------------|--------------------------------|---------------|----------------|--|---------------|----------------|
| | Montana | Canada | Wyoming | Montana | Canada | Wyoming |
| Total | | | | | | |
| Year: 1974 | 25,537 | 44,487 | 61,627 | 19.40% | 35.79% | 46.81% |
| Year: 1975 | 24,463 | 53,077 | 54,237 | 18.56% | 40.28% | 41.16% |

SUMMARY OF SECONDARY RECOVERY PROJECTS — JANUARY 1, 1976

| 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 | 1,015 | 155 | 2 | Parlan |
| Bell Creek, Unit "A", Muddy | Gary | Waterflood | Peripheral | 7- 1-70 | 61,688 | 33,085 | 27 | Madison |
| Bell Creek, Unit "B", Muddy | Gary | Waterflood | Peripheral | 11- 1-70 | 17,744 | 8,660 | 13 | Madison |
| Bell Creek, Ranch Creek, Muddy | Gary | Waterflood | Peripheral | 7- 1-71 | 21,561 | 8,870 | 13 | Madison |
| Bell Creek, Unit "C", Muddy | Gary | Waterflood | Peripheral | 12- 1-71 | 8,272 | 6,970 | 6 | Madison |
| Bell Creek, Unit "D", Muddy | Gary | Waterflood | Peripheral | 8-72 | 11,083 | 6,727 | 14 | Madison |
| Bell Creek, Unit "E", Muddy | Gary | Waterflood | Peripheral | 8-72 | 8,017 | 7,488 | 16 | Madison |
| Big Well, Tyler B | Texaco, Inc. | Waterflood | Peripheral | 8-20-66 | 16,325 | 5,496 | 2 | Produced, Amsden & Tyler |
| Border, New, Cut Bank | BG&O Co. | Waterflood | Random | 6- 1-73 | 165 | 233 | 1 | Madison |
| Border, Old, Cut Bank | BG&O Co. | Waterflood | Random | 6- 1-73 | 484 | 478 | 4 | Madison |
| Bowes, Sawtooth | Texaco, Inc. | Waterflood | Random | 5-23-61 | 3,630 | 605 | 4 | Madison |
| Cabin Creek, Siluro-Ord. | Shell | Waterflood | Semi-Peripheral | 6-12-59 | 145,308 | 37,110 | 31 | Produced & Fox Hills |
| Cat Creek, East Bone, Swift | Hoss | Waterflood | Semi-Peripheral | 7-30-70 | 276 | 306 | 4 | Third Cat Creek |
| Cat Creek, 1st & 2nd CC (Unit 1) | Farmers Union | Waterflood | Semi-Peripheral | 10-10-62 | 10,325 | 1,852 | 7 | Third Cat Creek |
| Cat Creek, 1st & 2nd CC (Unit 2) | Farmers Union | Waterflood | Semi-Peripheral | 12- 1-59 | 17,369 | 1,010 | 6 | Third Cat Creek |
| Cat Creek, Mosby, Swift | Farmers Union | Waterflood | Random | 7-67 | 3,383 | 1,077 | 5 | Third Cat Creek |
| Cat Creek, Mosby, Amsden | Farmers Union | Waterflood | Random | 6- 1-71 | 41 | 10 | 1 | Third Cat Creek |
| Cut Bank, Marina, Cut Bank | BG&O Co. | Waterflood | S-Spot | 6-72 | 1,300 | 1,139 | 8 | Madison |
| Cut Bank, Tweedy, Cut Bank | BG&O Co. | Waterflood | S-Spot | 6-72 | 713 | 239 | 3 | Madison |
| Cut Bank NE, Cut Bank | Texaco, Inc. | Waterflood | S-Spot | 6- 2-63 | 12,939 | 987 | 9 | Madison |
| Cut Bank NW, Cut Bank | Phillips | Waterflood | S-Spot | 1-30-62 | 14,373 | 1,478 | 14 | Madison |
| Cut Bank SE, Cut Bank | Union | Waterflood | S-Spot | 5-63 | 29,763 | 6,053 | 49 | Madison |
| Cut Bank SW, Cut Bank | Phillips | Waterflood | S-Spot | 9-62 | 49,153 | 6,685 | 53 | Madison |
| Cut Bank SW, Cut Bank | Phillips | Waterflood | S-Spot | 9-62 | 69,703 | 17,603 | 97 | Madison |
| Cut Bank, Lander A | Phillips | Waterflood | Random | 4-65 | 1,406 | 183 | 2 | Madison |
| Cut Bank, Lander | Texaco, Inc. | Waterflood | Random | 7-64 | 6,840 | 1,400 | 7 | Eagle |
| Cut Bank, McGuinness, Moulton | Union | Waterflood | Random | 12-62 | 3,664 | 1,030 | 1 | Madison |
| Cut Bank, Cut Bank | Tesoro | Waterflood | S-Spot | 9- 1-71 | 2,576 | 2,040 | 17 | Madison |
| Cut Bank, Two Medicine, Cut Bank | Miami | Waterflood | Random | 12-67 | 38,769 | 6,326 | 77 | Madison |
| Cut Bank, West Wilcox, Moulton | Decalta | Waterflood | Random | 2-71 | 14,968 | 2,409 | 10 | Madison |
| Cut Bank, Moulton, Moulton | Union | Waterflood | Random | 11-69 | 11,164 | 7,611 | 11 | Water Inj. Into Madison |
| | | Gas Injection | Random | 5-15-71 | Shut-in | -- | -- | Gas Inj. Into Moulton |
| Darling, State, Moulton | BG&O Co. | Waterflood | Random | 2-67 | 2,365 | 420 | 1 | Madison |
| Darling, NE Unit, Moulton | Ralph Fair | Waterflood | Random | 2-68 | 4,399 | 1,280 | 4 | Produced Water |
| Darling, South Swenson, Moulton | BG&O Co. | Waterflood | Random | 2-67 | 7,166 | 734 | 2 | Madison |
| Dwyer, Ratcliffe | Phillips | Waterflood | Peripheral | 10-68 | 1,356 | 204 | 5 | Madison |
| Elk Basin, Embar-Tensleep | Amoco | Gas Injection | Random | 12-72 | 2,258 M | 34 MCF | 1 | Produced Gas |
| Elk Basin, Frontier | Amoco | Waterflood | Random | 1926 | 2,251 | 992 | 2 | Madison |
| Elk Basin, Unit 2, Tensleep | Amoco | Waterflood | Random | 1969 | 2,171 | 1,100 | 1 | Produced Water |
| Elk Basin, Madison | Amoco | Waterflood | Peripheral | 1962 | 55,207 | 14,278 | 8 | Produced Water |
| Elk Basin NW, Tansleep | Atlantic-Richfield | Waterflood | Semi-Peripheral | 5-67 | 3,622 | 1,942 | 2 | Madison |
| Fairview, NW Unit, Red River | Superior | Gas Injection | Crestal | 10-25-67 | 2,573 M | 689 MCF | 1 | Purchased Gas |
| Flat Coulee, Swift | Cardinal | Waterflood | Peripheral | 2- 1-72 | 2,846 | 1,986 | 15 | Eagle |
| Flat Lake, Ratcliffe | Chevron | Waterflood | Random | 6- 1-71 | 10,834 | 7,750 | 11 | Produced Water |
| Frannie, Tensleep | Continental | Waterflood | Random | 9-70 | 1,807 | 848 | 1 | Produced Water |
| Fred & George, Sunburst | Fulton | Waterflood | Random | 7-70 | 12,468 | 8,102 | 2 | Madison & Eagle |
| Gas City, Red River | Shell | Waterflood | Semi-Peripheral | 10-31-69 | 7,304 | 4,486 | 6 | Hession Canyon |
| Goose Lake, Ratcliffe | Cotton Petroleum | Waterflood | Semi-Peripheral | 1-73 | 3,771 | 4,962 | 5 | Produced Water |
| Jim Coulee, Tyler B | McAlister Fuel | Waterflood | Semi-Peripheral | 6- 1-72 | 3,569 | 4,212 | 5 | Third Cat Creek |
| Keg Coulee, NW Unit, Tyler B | Ada Oil | Waterflood | Semi-Peripheral | 8-31-66 | 4,903 | 590 | 1 | Madison |
| Keg Coulee, East, Tyler | Continental | Waterflood | Semi-Peripheral | 12-24-69 | 3,364 | 257 | 3 | Third Cat Creek |
| Keg Coulee, South, Tyler | BG&O Co. | Waterflood | Semi-Peripheral | 1- 1-70 | 1,771 | 1,306 | 2 | Madison |
| Kelley, Tyler | McAlister Fuel | Waterflood | Random | 7-69 | 1,585 | 820 | 3 | Third Cat Creek |
| Kevin-Sunburst, Madison | Lon Crumley | Waterflood | Random | 9-63 | 0 | 0 | 2 | Madison |
| Kevin-Sunburst, Madison | BG&O Co. | Waterflood | Random | 8-64 | 5,538 | 1,447 | 6 | Madison |
| Kevin-Sunburst, Madison | Texaco, Inc. | Waterflood | Semi-Peripheral | 8-64 | 8,379 | 1,339 | 10 | Madison |
| Little Beaver, Red River | Shell | Waterflood | Semi-Peripheral | 8- 7-66 | 22,905 | 6,251 | 13 | Madison |
| Little Beaver East, Red River | Shell | Waterflood | Semi-Peripheral | 4-65 | 9,449 | 1,829 | 6 | Madison |
| Lookout Butte, Red River | Shell | Waterflood | Semi-Peripheral | 4-67 | 19,048 | 6,943 | 12 | Minneka |
| Lookout Butte, Madison | Shell | Waterflood | Semi-Peripheral | 2-69 | 1,806 | 933 | 1 | Minneka |
| Monarch, Silurian | Shell | Waterflood | Random | 12- 1-73 | 104 | 0 | 3 | Siluro-Ord. |
| Penneb, Red River | Shell | Waterflood | Random | 6-28-69 | 43,530 | 26,196 | 45 | Dakota and Produced |
| Pine, South, Red River | Shell | Waterflood | Semi-Peripheral | 3-59 | 128,531 | 28,920 | 36 | Fox Hills and Produced |
| Pine, North, Red River | Shell | Waterflood | Semi-Peripheral | 3-68 | 13,603 | 4,998 | 11 | Lodgepole |
| Prichard Creek, Sunburst | Fulton Producing | Waterflood | Random | 4-73 | 230 | 0 | 0 | Eagle |
| Ragged Point, Tyler | BG&O Co. | Waterflood | Semi-Peripheral | 12- 3-66 | 5,859 | 1,052 | 4 | Third Cat Creek |
| Raegan, Madison | Union | Gas Injection | Random | 8-61 | 4,358 M | 200 | 2 | Gas Injection |
| Red Creek, Cut Bank | Exxon | Waterflood | S-Spot | 6-65 | 9,738 | 2,551 | 6 | Madison |
| Richey SW, Interlaka | Atlantic-Richfield | Waterflood | Random | 12-65 | 2,174 | 203 | 1 | Fox Hills |
| Stensvad, Tyler | Ada Oil | Waterflood | Semi-Peripheral | 2-63 | 26,100 | 4,244 | 7 | Madison |
| Sumatra, West, Tyler | Continental | Waterflood | Semi-Peripheral | 10-68 | 12,879 | 5,641 | 9 | Madison |
| Sumatra, Central, Tyler | Texaco, Inc. | Waterflood | Semi-Peripheral | 9-16-69 | 45,223 | 26,973 | 18 | Madison |
| Sumatra, NE, Tyler | Texaco, Inc. | Waterflood | Semi-Peripheral | 9-16-69 | 3,230 | 1,128 | 4 | Madison |
| Sumatra, SE, Tyler | BG&O Co. | Waterflood | Semi-Peripheral | 12- 1-69 | 6,907 | 3,479 | 7 | Madison |
| Sumatra, Erabe, Tyler | Farmers Union | Waterflood | Random | 6-16-75 | 14 | 86 | 1 | Third Cat Creek |
| Willow Creek, North, Tyler B | Resources Investment | Waterflood | Random | 6- 1-72 | 120 | 159 | 1 | Produced |

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 |
|---|--------------------------|-------------------|-----------------------------------|--|---|
| ANTELOPE Swift (U. Jur.) | 3 | Structural | Water Drive | (Listed as part of Cat Creek Field.) | None |
| ARCH APEX 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 |
| ASH CREEK 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.) |
| BAINVILLE Red River (Ord.) | 1 | Structural-Strat. | Depletion-Water Drive | State-wide. | Produced water disposed into Red River formation. (Order 7-A-75.) |
| BANNATYNE Swift (U. Jur.) Sun River (U. Miss.) | 3 1 (Shut-in) | 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. |
| BEARS DEN Sunburst (L. Cret.) Gas Swift (U. Jur.) Oil Sawtooth (Jur.) Gas | 3 5 1 (Shut-in) | Structural | Depletion and Gas Cap Drive | State-wide. | None |
| BELL CREEK Muddy (L. Cret.) Oil & Gas Gas | 188 4 | 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.) |
| BELL CREEK SOUTHEAST Muddy (L. Cret.) Gas | 4 | Strat. | Depletion | 160-acre spacing units, wells 660' from spacing boundary. (Order 31-72.) | None |
| BENRUD Nisku (Dev.) (Shut-in) | 1 1 | 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 |
|---|-----------------|----------------------------------|----------------------------|--|---|
| BENRUD, EAST Nisku (Dev.) | 3 | Structural | Water Drive | Same as Benrud Field. (Order 6-65.) | Water disposal into Judith River formation. (Order 64-62, 32-66.) |
| BENRUD, NORTHEAST Nisku (Dev.) | 1 | Structural | Water Drive | Same as Benrud Field. (Order 6-65.) | Water disposal into Judith River formation. (Order 32-66.) |
| BERTHELOTE 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 |
| BIG COULEE 3rd Cat Creek (L. Cret.) Gas Morrison (U. Jur.) Gas | 5 1 | Structural Structural | Water Drive Water Drive | State-wide. | None |
| BIG MUDDY CREEK Interlake (Sil.) Red River (Ord.) | 1 3 | 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 |
| BIG WALL Amsden (Penn.) Tyler (Penn.) | 1 13 4 | 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.) |
| BLACK COULEE 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 |
| BLACKFOOT Cut Bank (L. Cret.) Sun River (Miss.) | 4 7 | 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 |
| BLACK JACK Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas & Oil Blackleaf (U. Cret.) Gas | 10 2 1 | Strat. | Depletion | One gas well per 160-acres, no closer than 660' from boundary of each unit. (Order 3-69.) State-wide spacing. Order 3-69 amended to include Blackleaf in spacing and field rules for gas. (Order 4-74.) Blackleaf gas pooled (Order 3-75). | None |

| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|---|------------------|--------------|-------------------------------|--|--|
| BORDER Cut Bank (L. Cret.) Oil & Gas | 8 | 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.) |
| BOWDOIN Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas *Gas wells outside boundary. | 347 *69 69 | 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 |
| BOWES 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.) Order 23-54 amended by establishing 160-acre Eagle spacing units in Sec. 5, 6, 7, 8, 17, 18-31N-19E. (Order 44-75). | 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. |
| BRADLEY Sun River (Miss.) (Shut-in) | 1 1 | Structural | Water Drive | State-wide. | None |
| BRADY Sunburst (L. Cret.) (Shut-in) | 1 | Strat. | Depletion Partial Water Drive | 10-acre spacing units with 75' topographic tolerance from center of spacing unit. (Order 34-62, 55-62.) | None |
| BRORSON 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 |
| BRORSON, SOUTH Red River (Ord.) Oil & Gas | 3 | Structural | Volumetric, Water Drive | One well per 160-acre unit, no closer than 660' from unit boundary. (Order 26-68.) Gas to Brorson Field plant. | None |
| BROWN'S COULEE 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 |
|---|-----------------------------|---|--|--|---|
| BRUSH LAKE 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 |
| BULLWACKER 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 |
| BURNS CREEK Red River (Ord.) | 1 | Structural | Depletion Water Drive | State-wide. | None |
| CABIN CREEK Mission Canyon (Miss.) Oil & Gas (Shut-in) | 14 4 | 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.) |
| CANADIAN COULEE, NORTH 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 |
| CANAL 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 |
| CAT CREEK Kootenai (L. Cret.) (3 sands) Morrison (U. Jur.) Ellis (U. Jur.) Amsden (Penn.) | 32 4 2 9 7 1 | Structural-Strat. Structural-Strat. Structural 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.) |
| CEDAR CREEK 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 NW¼ and SE¼ 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 |
|---|-----------------|-------------------|--------------------------|---|---|
| CHELSEA CREEK Nisku (Dev.) | 1 | Structural | Water Drive | State-wide. | None |
| CLARK'S FORK Frontier (U. Cret.) | 1 | Structural-Strat. | Depletion | 330' from quarter-section line, 1320' between wells with 75' topographic tolerance. (Order 17-54.) | None |
| CLARK'S FORK, NORTH Lakota (L. Cret.) Gas | 2 | Structural-Strat. | Volumetric | 160-acre quarter section spacing with location no closer than 660' from spacing unit boundary. (Order 23-75). | None |
| CLARK'S FORK, SOUTH 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 |
| COAL COULEE Eagle (U. Cret.) Gas | 3 | Structural-Strat. | Volumetric | State-wide. | None |
| CONRAD, SOUTH Dakota (L. Cret.) | 1 | Strat. | Depletion | 10-acre spacing units. Wells in center of each unit with 75' topographic tolerance. (Orders 34-62, 31-63.) | None |
| COW CREEK 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 |
| COW CREEK, EAST Kibbey (Miss.) | 6 1 | 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.) | Produced water disposed into Dakota formation. (Order 30-A-75). |
| CULBERTSON 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 |
| CUPTON Red River (Ord.) | 10 | Structural-Strat. | Water Drive | 160-acre quarter section spacing units. Location no closer than 660' from spacing unit boundary. (Order 4-72.) | None |
| CUT BANK Kootenai (L. Cret.) Oil & Gas | 948 | Strat. | Depletion | (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.) | There are 19 waterfloods in progress. Water from Eagle and Madison, or produced. Produced water disposed into Madison formation. (Order 22-A-74.) |
| Madison (Miss.) Oil & Gas (Gas only) Shut-in) | 28 29 | Strat. | Water Drive | 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.) | |

| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|---|-----------------------|---|--|--|--|
| DARLING (Included as part of Cut Bank Field) | | | | | |
| DEAN DOME Greybull (L. Cret.) Gas Oil (Shut-in) | 1 1 | Structural | Water Drive | State-wide. Oil ring below gas cap. | None |
| DEER CREEK Interlake (Sil.) | 1 4 | Structural | Water Drive | 80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ 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 | | |
| DELPHIA Amsden (Penn.) | 1 | Structural | Water Drive | State-wide. | None |
| DEVIL'S BASIN Heath (U. Miss.) | 3 | Structural | Depletion | State-wide. | None |
| DEVON Blackleaf (U. Cret.) Gas Kootenai (L. Cret.) Oil Depleted | 23 | Strat. Strat. | Volumetric Depletion | State-wide. State-wide. | None None |
| DEVON, SOUTH Bow Island (L. Cret.) Gas (Shut-in) | 1 9 | Strat. | Volumetric | Drilled on state-wide spacing. Unitized for primary production. (Order 28-71, corrected). | None |
| DRY CREEK Eagle (U. Cret.) Gas Judith River (U. Cret.) Frontier (U. Cret.) Gas Greybull (L. Cret.) Gas, Greybull (L. Cret.) Oil | 1 1 7 3 1 | Structural- Strat. Structural- Structural- Strat. | Volumetric Volumetric Volumetric- Depletion | State-wide. Field re-delineated. (Order 8-70.) Six additional gas storage wells, west end of structure. | None |
| DRY CREEK MIDDLE Frontier (U. Cret.) Gas | 1 | Structural- Strat. | Volumetric | 320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option with permitted well no closer than 660' from spacing boundary (Order 25-75.) | None |
| DWYER Ratcliffe (Miss.) | 10 4 | Structural- Strat. | Water Drive- Volumetric | 160-acre spacing units; well location in center of SE $\frac{1}{4}$ 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.) |
| EAST KEITH & KEITH 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 |
|-------------------------------------|-----------------|-------------------|--------------------------|--|--|
| ELK BASIN (Mont. Portion) | | | | | |
| Frontier (U. Cret.) | 14 | Structural | Gravity | 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.) |
| (Shut-in) | 12 | | Drainage | | |
| Embar-Tensleep (Perm., Penn.) | 18 | Structural | Gravity | | |
| Oil and Gas | 14 | | Drainage | | |
| (Shut-in) | | | | | |
| Madison (Miss.) | 20 | Structural | Water Drive | | |
| (Shut-in) | 1 | | | | |
| ELK BASIN, NORTHWEST | | | | | |
| Frontier (U. Cret.) | 5 | 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. |
| (Shut-in) | 4 | | | | |
| Embar-Tensleep (Perm., Penn.) | 4 | Structural | Gravity | | |
| Oil and Gas | | | Drainage | | |
| Madison (Miss.) | 2 | Structural | Water Drive | | |
| | | | | | |
| ETHRIDGE AREA | | | | | |
| Bow Island (L. Cret.) Gas (Shut-in) | 3 | Strat. | Water Drive | State-wide. | None |
| Swift (U. Jur.) Gas (Shut-in) | 5 | Strat. | Water Drive | State-wide, except two wells by (Order 28-65). | |
| | 1 | | | | |
| FAIRVIEW | | | | | |
| Winnipegosis (Dev.) Oil & Gas | 1 | Structural | 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.) |
| Red River (Ord.) Oil & Gas | 8 | Structural | Water Drive | | |
| FERTILE PRAIRIE | | | | | |
| Red River (Ord.) | 2 | Structural-Strat. | Water Drive | 80-acre spacing units consisting of north-south rectangular units. Well location in NW¼ and SE¼ of quarter section with 75' topographic tolerance. (Orders 3-56, 7-62.) | None |
| FLAT COULEE | | | | | |
| Bow Island (L. Cret.) Gas (Shut-in) | 3 | Structural | Depletion | 330' from boundary of legal subdivision and 1320' from other wells in same reservoir. (Order 16-55.) | Waterflood unit and redelimitation approved for Swift sandstone. (Orders 13-71, 17-A-71, 22-71.) |
| Dakota (L. Cret.) Gas (Shut-in) | 1 | Strat. | Depletion | State-wide, exception (Order 11-66.) | |
| Swift (Jur.) Gas (Shut-in) 1 | 1 | Strat. | Depletion | State-wide gas spacing. | |
| Swift (Jur.) Oil (Shut-in) | 20 | Strat. | Depletion | 40-acre spacing units. Well in center of spacing unit with 150' topographic tolerance. (Orders 16-62, 19-63.) | |
| Sunburst (Jur.) Gas (Shut-in) | 1 | Strat. | Depletion | State-wide. | |
| Sawtooth (Jur.) Gas (Shut-in) | 1 | 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 |
|---|-----------------|-------------------|--|--|--|
| FLAT LAKE Nesson (Miss.) | 1 | Strat. | Partial Water Drive | 160-acre spacing units; well location in center of NE¼ 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.) Unit operation for eastern part of field. (Order 7-71.) Unit operation for western part of field. (Order 32-74.) |
| Ratcliffe (Miss.) | 51 | Structural-Strat. | Partial Water Drive | | |
| FLAT LAKE, SOUTH Ratcliffe (Miss.) | 3 3 | 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.) |
| FOUR MILE CREEK Red River (Ord.) | 1 | Structural | Depletion | 320-acre spacing units. (Order 43.75.) | None |
| FRANNIE (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.) |
| FRED & GEORGE CREEK Sunburst (L. Cret.) Oil & Gas (Shut-in) | 14 2 | Strat. | 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.) |
| Swift (U. Jur.) Oil & Gas | 15 | Strat. | Depletion | | |
| FROID, SOUTH Red River (Ord.) | 1 | Structural-Strat. | Depletion | State-wide. | None |
| FT. GILBERT Red River (Ord.) | 2 1 | Structural-Strat. | Depletion | State-wide. | None |
| GAGE Amsden (Penn.) | 1 | Structural | Water Drive | State-wide. | None |
| GAS CITY Red River (Ord.) | 17 | Structural | Depletion-Water Drive | 80-acre spacing units consisting of E½ and W½ of quarter sections; well location in NW¼ and SE¼ of quarter section; 150' topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingling) 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.) |
| GIRARD 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 |
|---|-----------------|---|--|---|--|
| GLENDIVE 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 16-66, 16-63, 40-A-70.) |
| GOLD BUTTE 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.) | None |
| GOLDEN DOME Eagle (U. Cret.) Gas | 2 | Structural-Strat. | | 160-acre spacing; 660' from spacing unit boundary. | None |
| GOOSE LAKE Ratcliffe (Miss.) Oil & Gas (Shut-in) | 29 4 | Structural-Strat. | Partial Water Drive | Unitized. (Order 17-72.) | Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.) |
| GRABEN COULEE Sunburst (L. Cret.) Cut Bank (L. Cret.) Cut Bank-Madison (Dual) | 1 32 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 |
| GRANDVIEW 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 |
| GUMBO RIDGE Tyler (L. Penn.) | 5 | Structural-Strat. | Unknown | State-wide. | None |
| GYPSY BASIN Sunburst (L. Cret.) Oil & Gas Swift (U. Jur.) | 4 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.) | |
| HARDIN Frontier (U. Cret.) Gas | 17 31 (Shut-in) | Strat. | Volumetric | State-wide. | None |
| HAVRE Eagle (U. Cret.) | 1 | Structural-Strat. | Water Drive Depletion | State-wide. Single well used in town of Havre. | None |
| HAY CREEK Mission Canyon (Miss.) | 1 | Structural | Depletion | State-wide. | |
| Red River (Ord.) | 2 | 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.) |
| HIAWATHA Tyler (L. Penn) (2 sands) | 4 | Structural-Strat. | Depletion | State-wide. | None |
| HIBBARD Amsden (Penn.) | 1 | Unknown | Water Drive | State-wide. | None |
| HOWARD COULEE Tyler (L. Penn.) | 1 | Structural-Strat. | Unknown | State-wide. | None |
| INJUN CREEK Tyler (Penn.) Abandoned. | 0 | Strat. | Depletion | State-wide. | None |
| IVANHOE Morrison (U. Jur.) | 2 | 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.) | 1 (Shut-in) | 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 |
|--|-----------------|---------------------|--------------------------|--|--|
| JIM COULEE 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. |
| KEG COULEE Tyler (Penn.) Oil & Gas (Shut-in) | 18 5 | 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. (Orders 11-60, 28-62.) (40-acre spacing: W½ E½ and W½ Sec. 35-11N-30E; NW¼ Sec. 2-10N-30E). (Order 23-72). 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. |
| KEG COULEE, NORTH Tyler (Penn.) | 3 | 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 |
| KEITH (see East Keith) | | | | | |
| KELLEY Tyler (Penn.) | 3 | Strat. | Depletion | State-wide, 250' topographic tolerance. (Order 15-67.) | Waterflood using Third Cat Creek water. (Order 8-69.) |
| KEVIN-SUNBURST 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 | | |
| KICKING HORSE Bow Island (L. Cret.) Sawtooth (Jur.) Gas | 3 4 | 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 |
| LAIRD CREEK 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.) |
| LAKE BASIN Telegraph Creek (U. Cret.) Gas Virgelle (U. Cret.) Gas | 8 | 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.) Gas from Telegraph Creek pooled. (Order 29-75.) | None |

| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|--|-----------------|-------------------|---------------------------------|---|---|
| LAKE BASIN, NORTH 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 |
| LANDSLIDE BUTTE Sun River (Miss.) (Shut-in) | 2 1 | Unknown | Water Drive | State-wide. | None |
| LAREDO 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 |
| LEARY 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 |
| LEROY Judith River-Eagle Virgelle (U. Cret.) Gas (Shut-in) | 24 | 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 660' from unit boundary and 990' from field boundary. (Order 19-75.) | None |
| LISCOM CREEK 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 |
| LITTLE BEAVER (Mont. Portion) Red River (Ord.) | 24 | 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. |
| LITTLE BEAVER, EAST (Montana Portion) Red River (Ord.) | 9 | 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.) |
| LITTLE WALL CREEK Tyler (Penn.) | 10 | Strat. | Depletion Water Drive | State-wide. | None |
| LODGE GRASS 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 |
|--|-----------------|-------------------|---------------------------------|--|--|
| LONE BUTTE Red River (Ord.) | 2 | Structural | Unknown | 320-acre spacing units with well location at least 660' from unit boundary. Not delineated. | None |
| LONETREE CREEK Red River (Ord.) | 7 | Structural | Depletion | 320-acre spacing, wells 660' from spacing boundary, 2000' between wells. (Order 29-72.) | None |
| LOOKOUT BUTTE (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. |
| MASON LAKE Lakota (L. Cret.) | 2 | Structural | Water Drive | State-wide. | None |
| MELSTONE Tyler (Penn.) | 4 | Structural-Strat. | Depletion | State-wide. | None |
| MIDDLE BUTTE Bow Island (Cret.) | 2 | 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.) Re-delineated. (Order 21-75.) | None |
| MINERAL BENCH Duperow (Dev.) | 1 | Structural | Water Drive | State-wide. | Water disposal into Dakota-Lakota per (Order 18-65.) |
| MINERS COULEE Sunburst (L. Cret.) | 2 | Strat. | Depletion | 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. | None |
| Madison (Miss.) | 3 | Strat. | Depletion | | |
| Sunburst-Swift Gas | 1 | Strat.? | Water Drive | | |
| | 1 | | | Gas: 160-acre spacing with wells 990' from unit boundary. (Order 5-74.) | |
| MONARCH 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.) |
| MOSBY (See Cat Creek) | 3 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.) |
| MOSSER Greybull (L. Cret.) | 3 1 | Structural | Water Drive | Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.) | None |
| MT. LILLY Madison (Miss.) Gas | 3 | 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 |
| MUD CREEK Amsden (L. Penn.) | 2 | Structural | Water Drive | 640-acre spacing unit. Well location anywhere in 160-acre tract in center of each 640-acre well spacing unit (Order 9-63.) | None |
| NOHLY Red River (Ord.) | 2 | Structural | Volumetric Water Drive | State-wide. | None |
| NORTH GUILDFORD 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 |
| NORTH LAKE BASIN (See Lake Basin, North) | | | | | |
| NORTH WILLOW CREEK (See Willow Creek, North) | | | | | |
| OTIS CREEK Red River (Ord.) | 2 | Structural | Depletion | State-wide. | None |
| OTIS CREEK, SOUTH Red River (Ord.) | 1 | Structural | Depletion | State-wide. | None |
| OUTLOOK 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 2 | 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.) | |

| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|--|-----------------|-------------------|--------------------------|--|--|
| OUTLOOK, SOUTH 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.) |
| OUTLOOK, WEST 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.) |
| PENNEL 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 | 103 | 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.) | |
| PINE 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 | | |
| PLEVNA Judith River (U. Cret.) Gas (Shut-in) | 19 1 | 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 |
| PONDERA 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 |
|--|-----------------|---------------------------------|----------------------------|--|--|
| PONDERA COULEE Sun River (Miss.) (Shut-in) | 4 | Structural | Water Drive | 330' from legal subdivision lines or upon a 10-acre spacing pattern; 75' topographic tolerance. (Order 5-62.) | None |
| POPLAR, EAST Madison (Miss.) (Charles & Mission Canyon fms.) Heath (Tyler) (Penn.) | 59 3 | Structural Structural-Strat. | Water Drive 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 Judith River, and Mission Canyon formations. (Orders No. 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67, 10-A-73.) |
| POPLAR NORTHWEST Charles (Miss.) ("B" & "C" or McGowan Zone) | 1 | Structural | Water Drive | 80-acre spacing units for McGowan or "C" zone consisting of E½ and W½ of each quarter section; permitted wells in NW¼ and SE¼ of quarter section. All other formations on state-wide spacing. (Order 18-55.) | None |
| PRAIRIE ELK Charles "C" (Miss.) (Shut-in) | 1 | Unknown | Water Drive | State-wide. | None |
| PRICHARD CREEK Sunburst (L. Cret.) Oil & Gas Shut-in) | 4 3 | Strat. | Depletion | Well locations subject to administrative approval. | None. Unitized as to Sunburst for water injection. (Order 7-73.) |
| PUMPKIN CREEK Shannon (U. Cret.) Gas (Shut-in) | 3 5 | Structural-Strat. | Depletion | State-wide. Delineated. (Order 10-71.) | None |
| PUTNAM Interlake (Sil.) | 1 | Structural | Volumetric Water Drive | State-wide. | None. Gas. to McCulloch Gas Processing Corp. Brorson Plant. |
| RABBIT HILLS Sawtooth (Jur.) | 1 | Structural | Volumetric Water Drive | State-wide. | None |
| RAGGED POINT Tyler (Penn.) | 4 | Structural Strat. | Volumetric Water Drive | 160-acre spacing unit. Well location 660' from spacing unit boundary. (Orders 17-73, 34-74.) | None |
| RAGGED POINT Tyler (Penn.) | 21 | 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 |
|--|-------------------|-----------------------|--------------------------|--|---|
| RAPELJE Claggett, Eagle, Judith River, Virgelle (U. Cret.) (Shut-in) | 15 1 | Structural- Strat. | Water Drive | 160-acre spacing. Wells no closer than 990' to unit boundary. Commingling after administrative approval. (Order 29-73.) | None |
| RATTLESNAKE COULEE Sunburst (L. Cret.) Oil & Gas Bow Island (L. Cret.) Gas (Shut-in) | 2 1 | Strat. | Depletion | State-wide. | None |
| RAYMOND 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.) |
| RAYMOND, NORTHEAST Winnipegosis (Dev.) (Dual) Red River (Ord.) | 2 | Structural- Strat. | Depletion Water Drive | 160-acre spacing units. Wells 660' from spacing unit boundary. (Order 12-74.) | None |
| REAGAN Sun River (Miss.) Oil (Shut-in) Gas | 51 12 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.) |
| REAGAN, WEST Blackleaf (U. Cret.) Gas | 10 | Strat. | Depletion | State-wide. Injected into Reagan field as secondary recovery agent. | None |
| RED CREEK 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. |
| RED FOX Nisku (Dev.) | 1 | Structural | Water Drive | Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.) | None |
| REDSTONE Winnipegosis (Dev.) (Shut-in) | 1 1 | Unknown | Water Drive | One well per 160-acre unit, but no closer than 660' from unit boundary. | None |
| REPEAT Red River (Ord.) | 1 | Unknown | Water Drive | State-wide. | None |

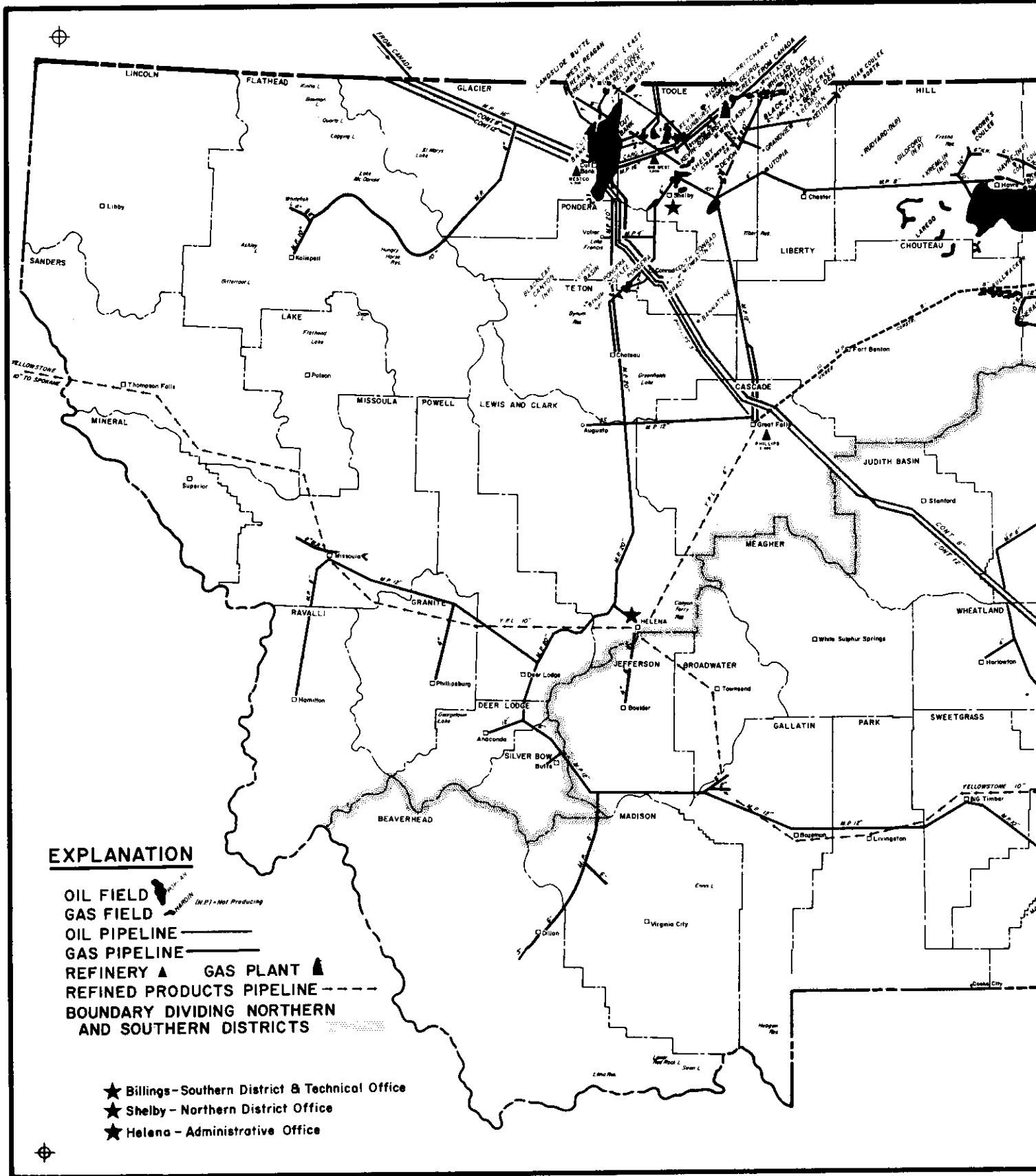
| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|--|-----------------|-------------------|--------------------------|---|--|
| RESERVE Winnipegosis (Dev.) | 1 | Structural-Strat. | 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 | | |
| RICHEY Charles (Miss.) | 1 | Structural | Water Drive | State-wide. | Original 80-acre spacing revoked. (Order 11-73.) |
| RICHEY, SOUTHWEST 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.) |
| RIPRAP COULEE Ratcliffe (Miss.) | 2 | Structural-Strat. | Depletion | State-wide. | None |
| ROSCOE Lakota (L. Cret.) | 1 | Structural | Water Drive | State-wide. | None |
| ROSEBUD Tyler (L. Penn.) | 5 | Structural-Strat. | Unknown | State-wide. | None |
| ROUGH CREEK Muddy (L. Cret.) | 1 | Structural Strat. | Depletion | State-wide. Formerly called Duncan Creek. | None |
| RUDYARD Sawtooth (M. Jur.) Gas | 3 | Structural | Volumetric | 640-acre spacing units consisting of one section; well location in center of NW ¹ / ₄ of section with 75' topographic tolerance. (Order 2-58.) | None |
| RUSH MOUNTAIN 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.) |
| SALT LAKE 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 |
|---|---------------------|-------------------|--------------------------|--|---|
| SAND CREEK 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.) |
| SECOND CREEK Red River (Ord.) | 3 | Structural | Volumetric Water Drive | State-wide. | None |
| SHEEPHERDER Tyler (L. Penn.) | 3 | Structural-Strat. | Unknown | State-wide. | None |
| SHELBY AREA 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 |
| SHERARD Eagle (U. Cret.) Gas | 8 1 (Shut-in) | Structural-Strat. | Volumetric Water Drive | 640-acre spacing units; 990' from section line. (Order 1-74.) | None |
| SHOTGUN CREEK Ratcliffe (Miss.) | 1 (Shut-in) | Structural | Water Drive | State-wide. | None |
| SIDNEY Mission Canyon (Miss.) | 1 (Shut-in) | Structural | Water Drive | State-wide. | None |
| SIOUX PASS Interlake (Sil.) Red River (Ord.) Mission Canyon (Miss.) | 3 1 1 Dual | Structural | Volumetric Water Drive | 320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from unit boundary. (Interlake and Red River). 160-acre spacing unit (Mission Canyon) with well no closer than 660' from unit boundary. Commingling of Interlake and Red River production authorized. (Order 10-75.) | Excess water injected into Dakota formation. (Order 15-A-75.) |
| SIOUX PASS, NORTH Interlake (Sil.) Red River (Ord.) Dual Winnipegosis (Dev.) | 3 1 | Structural | Unknown | 320-acre spacing units with well location at least 660' from unit boundary. (Order 12-75.) Field enlarged (Order 16-75.) Commingling from Interlake and Red River approved (Order 36-74.) Refer to Order 35-75 for modification. | None |
| SNYDER Tensleep (Penn.) | 3 | Structural | Water Drive | 10-acre spacing units with center 5-spot permitted; 150' topographic tolerance. (Order 45-62.) | None |
| SOAP CREEK Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.) | 22 | 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 |
|--|-----------------|--------------------------|---------------------------|--|--|
| SPRING LAKE Nisku (Dev.) Red River (Ord.) | 1 2 | Structural Structural | Depletion Depletion | One well per 160-acre spacing unit. Well location anywhere within 840' square in center of spacing unit. (Order 6-63.) | None |
| SQUAW COULEE (Now included as part of Tiger Ridge Field.) (Order 10-70.) | | | | | |
| STRAWBERRY CREEK Bow Island (L. Cret.) Gas | 3 | Strat. | Depletion | State-wide. | None |
| STENSVAD Tyler (Penn.) | 8 9 | Strat. Strat. | Depletion 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, Amended.) | A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.) |
| SWANSON CREEK Phillips (U. Cret.) Gas | 1 | Strat. | Depletion | 320-acre spacing units, well location SE NW each section. Wells no closer than 990' from unit boundary. (Order 36.75.) | None |
| SUMATRA Tyler (Penn.) Oil & Gas | 94 | Strat. | Depletion | 40-acre spacing units; well located in center of unit with 75' tolerance. (Order 14-58.) Field re-delineated (Order 14-75.) | Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70, 16-72, 24-74, 5-75.) |
| TIGER RIDGE Judith River (U. Cret.) Gas | 5 1 | Structural- Strat. | Depletion- Water Drive | 160-acre spacing; location no closer than 660' to unit boundary. (Order 32-73.) | (Orders 17-67, 23-68, 10-70.) |
| Eagle (U. Cret.) Gas | 119 30 | Structural- Strat. | Depletion- Water Drive | 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.) | |
| Sawtooth (Jur.) Oil | 1 | Structural- Strat. | Water Drive | Enlarged and re-delineated (Order 13-75.) 160-acre spacing units in Sections 22, 23, 24, 32N-14E (Eagle and Virgelle) wells at least 990' from section line and 660' from quarter section line (Order 37-75.) | |
| TIMBER CREEK Sunburst (L. Cret.) Gas | 2 | Strat. | Depletion | 320-acre spacing consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from spacing boundary and 990' from field boundary. (Order 24-75.) | None |
| TRAIL CREEK Sunburst (L. Cret.) Gas | 2 | Structural- Strat. | Water Drive- Depletion | One well per 320 acres consisting of S½ and N½ of each governmental section but no closer than 990' from spacing boundary. (Order 33-70.) | |
| TULE CREEK Nisku (Dev.) | 5 1 | 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.) |
| TULE CREEK, EAST 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 |
|---|---------------------|-------------------|--------------------------|---|---|
| TULE CREEK, SOUTH 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.) |
| UTOPIA Sawtooth (Jur.) Gas Madison (Miss.) | 3 1 (Shut-in) | Structural | Depletion Water Drive | State-wide. Two wells produced small amount of oil from Swift sand. | None |
| VIDA 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.) |
| VOLT Nisku (Dev.) | 5 2 (Shut-in) | 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. | |
| WAGON BOX Tyler (Penn.) | 2 | Structural-Strat. | Unknown | State-wide. | None |
| WELDON 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.) |
| WEST BUTTE 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. | |
| WEST REAGAN (See Reagan, West) | | | | | |

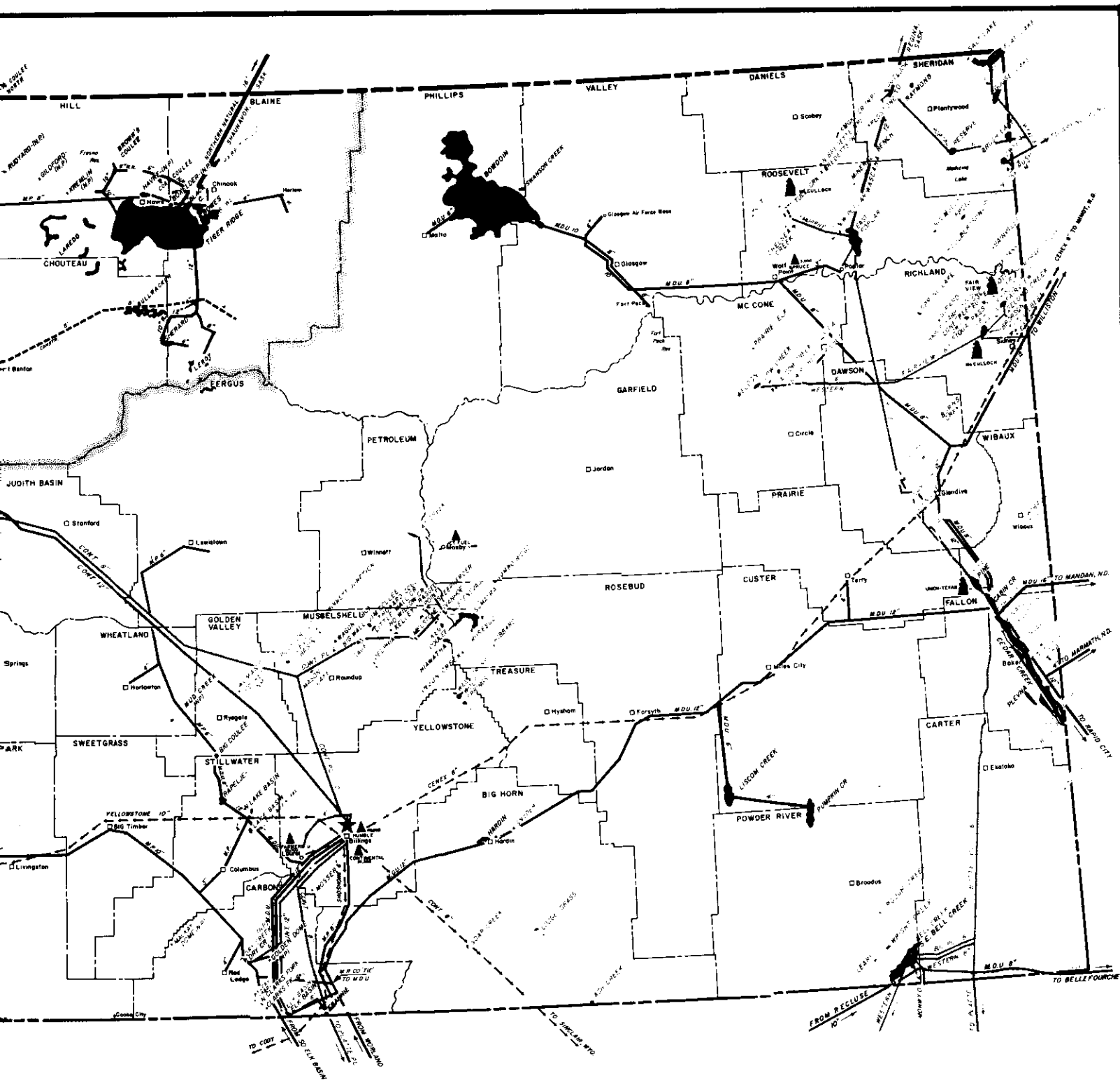
| Field, Formation, Age | No. Prod. Wells | Type of Trap | Probable Drive Mechanism | Spacing Regulations, Field Rules, and Remarks | Secondary Recovery or Water Disposal |
|--|-------------------|-------------------|--------------------------|--|---|
| WHITLASH | | | | | |
| Bow Island, Kootenai, Swift (Cret.) (Jur.) | 49 7 7 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 |
| Madison (Miss.) Gas | | | | | |
| WHITLASH, WEST | | | | | |
| Sunburst, Swift (Cret.) (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 |
| Sawtooth (Jur.) | | | | | |
| WILLOW CREEK, NORTH | | | | | |
| Tyler (Penn.) Oil | 2 | Structural-Strat. | Depletion Water Drive | State-wide. | Pilotflood. (Order 19-72.) |
| WILLS CREEK, SOUTH | | | | | |
| 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.) |
| WINNETT JUNCTION | | | | | |
| Tyler (Penn.) | 4 | Strat. | Depletion Water Drive | State-wide. | None |
| WOLF SPRINGS | | | | | |
| 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 |
| WOODROW | | | | | |
| 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.) |
| WRIGHT CREEK | | | | | |
| 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 |



EXPLANATION

- OIL FIELD
- GAS FIELD
- OIL PIPELINE
- GAS PIPELINE
- REFINERY
- GAS PLANT
- REFINED PRODUCTS PIPELINE
- BOUNDARY DIVIDING NORTHERN AND SOUTHERN DISTRICTS

- ★ Billings - Southern District & Technical Office
- ★ Shelby - Northern District Office
- ★ Helena - Administrative Office



MONTANA

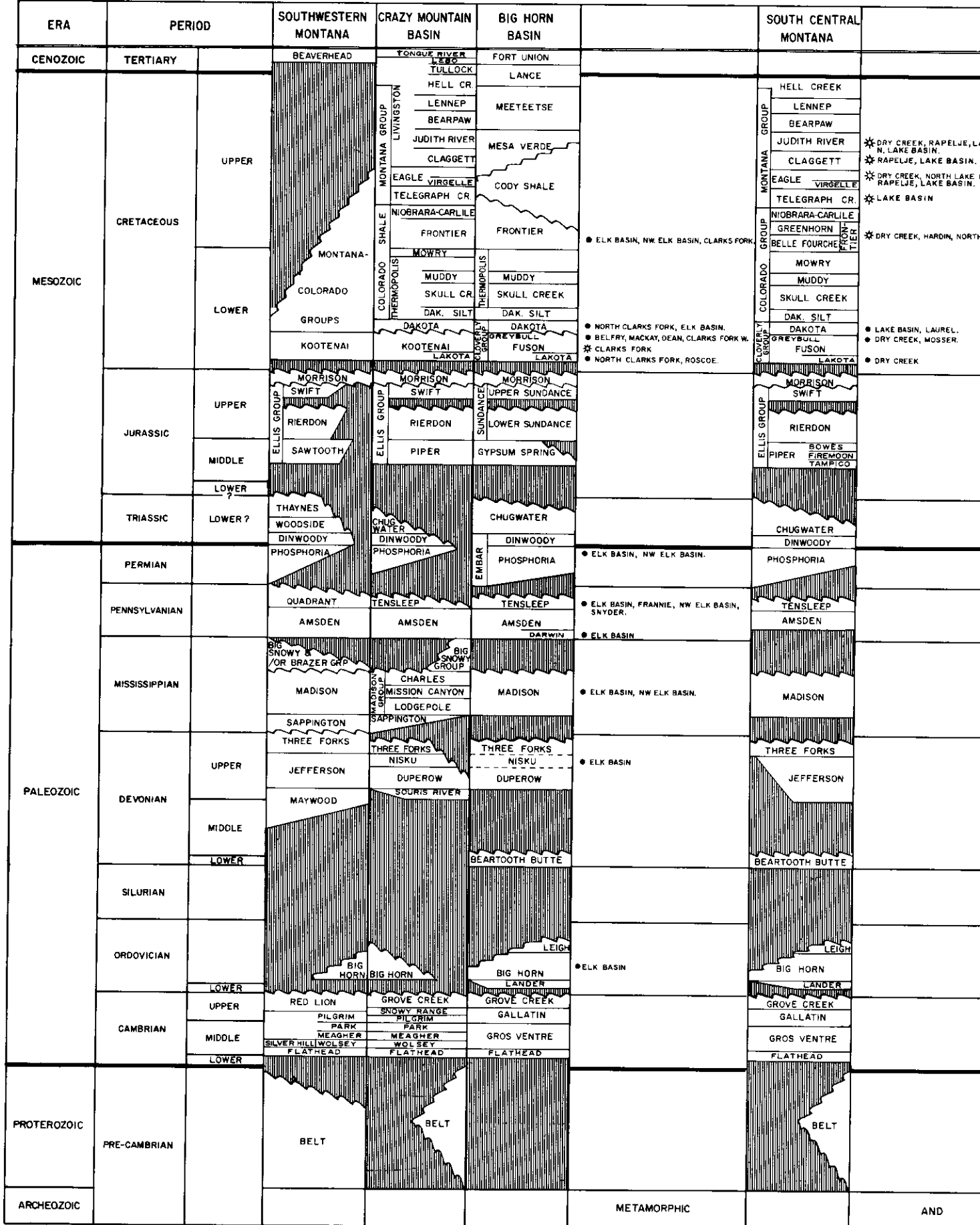
OIL AND GAS FIELDS, PIPELINES AND REFINERIES

1975

BOARD OF OIL AND GAS CONSERVATION



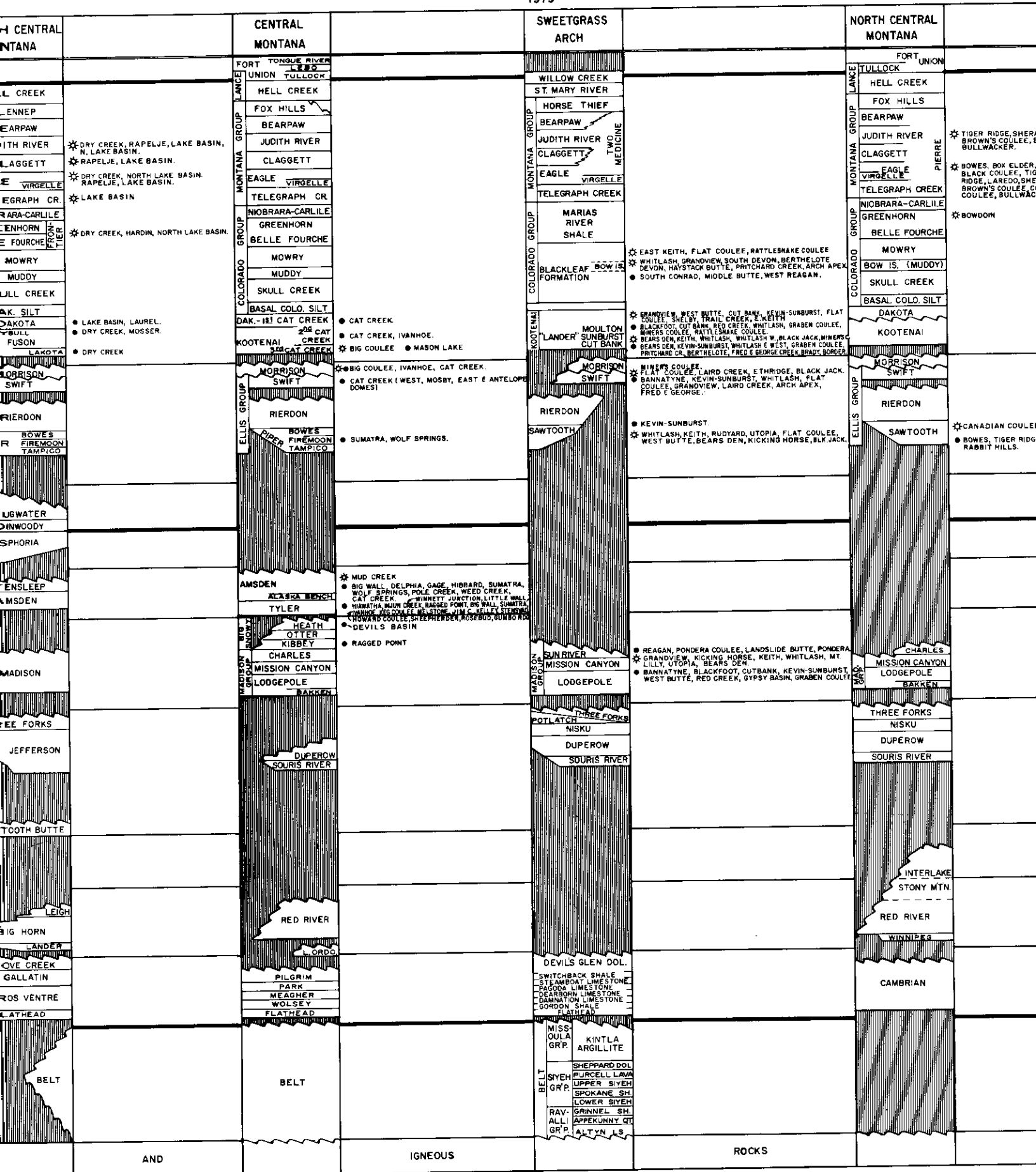
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GENERALIZED STRATIGRAPHIC CORRELATION CHART

SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS *

• OIL * GAS
1975



RELATION CHART

FIELDS *

CHARLES G. MAIO, GEOLOGIST

JUDSON D. SWEET, PETROLEUM ENGINEER

| NORTH CENTRAL MONTANA | | NORTH POWDER RIVER BASIN | | WILLISTON BASIN | | PERIOD | ERA |
|---|--|--|--|--|--|--|---|
| <p>LANCASHIRE GROUP</p> <p>FORT UNION</p> <p>TULLOCK</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>TELEGRAPH CREEK</p> <p>NIORRARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>BOW IS. (MUDDY)</p> <p>SKULL CREEK</p> <p>BASAL COLO. SILT</p> <p>DAKOTA</p> <p>KOOTENAI</p> <p>MORRISON</p> <p>SWIFT</p> <p>RIERDON</p> <p>SAWTOOTH</p> <p>ELLIS GROUP</p> <p>CHUGWATER</p> <p>SPEARFISH</p> <p>MINNEKAHTA</p> <p>OPECHE</p> <p>TENSLEEP</p> <p>MINNELUSA</p> <p>AMSDEN</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LODGEPOLE</p> <p>BARREN</p> <p>THREE FORKS</p> <p>NISKU</p> <p>DUPEROW</p> <p>SOURIS RIVER</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>WINNIEPES</p> <p>CAMBRIAN</p> | | <p>LANCASHIRE GROUP</p> <p>FORT TONGUE RIVER</p> <p>JEFFERSON</p> <p>TULLOCK</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>PARKMAN</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>SHANNON</p> <p>TELEGRAPH CREEK</p> <p>NIORRARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>MUDDY (NEWCASTLE)</p> <p>SKULL CREEK</p> <p>BASAL COLO. SILT</p> <p>DAKOTA</p> <p>FUSON (KOOTENAI)</p> <p>LAKOTA</p> <p>MORRISON</p> <p>SUNDANCE</p> <p>GYPSON SPRING</p> <p>CHUGWATER</p> <p>SPEARFISH</p> <p>MINNEKAHTA</p> <p>OPECHE</p> <p>TENSLEEP</p> <p>MINNELUSA</p> <p>AMSDEN</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LODGEPOLE</p> <p>BARREN</p> <p>THREE FORKS</p> <p>JEFFERSON GROUP</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>BIG HORN</p> <p>WINNIEPES</p> <p>LOWER ORDOVICIAN</p> <p>GROVE CREEK</p> <p>GALLATIN</p> <p>DEADWOOD</p> <p>GROS VENTRE</p> | | <p>LANCASHIRE GROUP</p> <p>FORT TONGUE RIVER</p> <p>UNION</p> <p>LUDLOW</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>TELEGRAPH CREEK</p> <p>NIORRARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>MUDDY (NEWCASTLE)</p> <p>SKULL CREEK</p> <p>BASAL COLO. SILT</p> <p>DAKOTA</p> <p>FUSON (KOOTENAI)</p> <p>LAKOTA</p> <p>MORRISON</p> <p>SWIFT</p> <p>RIERDON</p> <p>PIPER</p> <p>BOWES</p> <p>FIREMOON</p> <p>TAMPICO</p> <p>KLING</p> <p>NESSON</p> <p>SAUDE</p> <p>SPEARFISH</p> <p>PINE SALT</p> <p>MINNEKAHTA</p> <p>OPECHE</p> <p>MINNELUSA</p> <p>AMSDEN</p> <p>TYLER</p> <p>HEATH</p> <p>OTTER</p> <p>KIBREY</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LODGEPOLE</p> <p>BARREN</p> <p>THREE FORKS</p> <p>BIRDBEAR (NISKU)</p> <p>DUPEROW</p> <p>DAWSON BAY</p> <p>PRAIRIE EVAP</p> <p>WINNIEPES</p> <p>ASHERN</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>WINNIEPES</p> <p>LOWER ORDOVICIAN</p> <p>DEADWOOD</p> | | <p>UPPER</p> <p>CRETACEOUS</p> <p>LOWER</p> <p>MIDDLE</p> <p>LOWER ?</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> | <p>MESOZOIC</p> <p>JURASSIC</p> <p>TRIASSIC</p> <p>PERMIAN</p> <p>PENNSYLVANIAN</p> <p>MISSISSIPPIAN</p> <p>DEVONIAN</p> <p>SILURIAN</p> <p>ORDOVICIAN</p> <p>CAMBRIAN</p> <p>PRE-CAMBRIAN</p> <p>PROTEROZOIC</p> <p>ARCHEOZOIC</p> |
| <p>* TIGER RIDGE, SHERARD, BROWN'S COULEE, BOWES, BULLWACKER.</p> <p>* BOWES, BOX ELDER, BLACK COULEE, TIGER RIDGE, LAREDO, SHERARD, BROWN'S COULEE, COAL COULEE, BULLWACKER.</p> <p>* BOWDOIN</p> <p>* CANADIAN COULEE NORTH</p> <p>* BOWES, TIGER RIDGE, RABBIT HILLS.</p> | | <p>* ASH CREEK, LISCOM CREEK, PUMPKIN CREEK.</p> <p>* HARDIN</p> <p>* BELL CREEK, BELL CREEK, ROUGH CREEK, WRIGHT CREEK, LEARY.</p> <p>* LODGE GRASS, SOAP CREEK, SNYDER</p> <p>* SOAP CREEK.</p> | | <p>* CEDAR CREEK, PLEVNA.</p> <p>* CEDAR CREEK</p> <p>* WELDON, EAST COW CREEK</p> <p>* FLAT LAKE, SHOTGUN CREEK, SMOKE CREEK, KATY LAKE, DWYER, POPLAR, RICHEY, PRAIRIE ELK, COW CREEK, VOLT, MINERAL BENCH, GAS CITY, GOOSE LAKE, RIPRAP C.</p> <p>* SIOUX, BRORSON, CABIN CREEK, MONARCH, PENNEL, POPLAR, OUTLOOK, HAROSCRABBLE CREEK, SHOTGUN CREEK, SOUTH FLAT LAKE, SIOUX PASS.</p> <p>* PINE, PENNEL, LOOKOUT BUTTE, SALT LAKE.</p> <p>* 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.</p> <p>* SW RICHEY.</p> <p>* RED STONE, OUTLOOK, WEST OUTLOOK, FAIRVIEW, RESERVE, RUSH MOUNTAIN, RAYMOND, NE. RAYMOND, N. SIOUX PASS.</p> <p>* BIG MUDDY CREEK, SIOUX PASS, N. SIOUX PASS, SECOND CREEK, DEER CREEK, MONARCH, OUTLOOK, PENNEL, PINE, SAND CR., SW. RICHEY, CABIN CR., LOOKOUT BUTTE, WILLS CR., WOODROW, VIDA, RESERVE.</p> <p>* GLENDIVE, LOOKOUT BUTTE, PENNEL, WOODROW, BURNS CR., WHOLLY RAYMOND, SECOND CREEK, CUPTON, CABIN CR., DEER CR., GLENDIVE, 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, BANEVILLE, CULBERTSON, FROID, MAY CREEK, GIRARD, CANAL ET. GILBERT, OTIS CR., LOHETREE, SIOUX PASS, N. SIOUX PASS, LONE BUTTE, NE. RAYMOND, BIG MUDDY CREEK.</p> | | | |

* SOME FIELDS SHOWN ARE DEPLETED OR NO LONGER PRODUCTIVE.