



Marginal Oil and Gas: Fuel for Economic Growth

2003 Edition

An Official Publication
of the
Interstate Oil and Gas Compact Commission

For more information about the IOGCC or this report, visit the IOGCC Web site at **www.iogcc.state.ok.us**, call **405/525-3556** or send e-mail to **iogcc@iogcc.state.ok.us**.

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Marginal Oil and Gas: *Fuel for Economic Growth*

The numbers contained within these pages tell an encouraging story.

The 2003 edition of *Marginal Oil and Gas: Fuel for Economic Growth*, which surveys production from 2002, clearly shows the importance of marginal (“stripper”) oil and natural gas wells to our nation’s energy supply. The Interstate Oil and Gas Compact Commission (IOGCC) has documented production from stripper wells since 1941 and has drawn attention annually to their important contribution to the nation’s economy.

In a year in which natural gas prices have risen steadily, bolstered by projections of a tighter supply and a cold winter, it is heartening to know that the potential to increase our energy supply is in our own figurative back yard.

These marginal wells stand as a testament to ingenuity, frugality and conservation.

Increased production from marginal natural gas wells comprised 43 percent of the overall rise in domestic onshore natural gas production in 2002. That is especially significant, considering that, overall, marginal natural gas accounts for 10 percent of domestic onshore production.

The story is much the same with marginal (“stripper”) oil. Production from these small-volume wells increased 7.67 million barrels in 2002, the second rise in three years. Marginal oil production accounts for 30 percent of domestic onshore production in the lower 48 states.

These marginal wells stand as a testament to ingenuity, frugality and conservation. No other nation produces as much oil and natural gas from such a source. These wells are produced and maintained not by the major oil and natural gas companies, but by (for the most part) small independent operators – “mom and pop” operations not that different from small family farms. They create jobs and economic growth that, while small when taken individually, are significant on a national basis.

Incentives, Research: *Fuel for Economic Growth*

Incentive programs are a key factor in the development of this truly American resource. States have encouraged domestic oil and natural gas production by maintaining programs that protect the public while allowing responsible owners to operate their wells in an efficient and profitable manner.

Programs include orphan well plugging, landowner plugging grants, idle well adoption or tax incentives, which—in addition to typical

Marginal oil and natural gas wells are an often overlooked, but vitally important, segment of the domestic petroleum industry.

financial assurance and enforcement activities—can address abandoned wells, some of which exist from pre-regulatory days. Examples can be found in the IOGCC publication, *Investments in Energy Security: State Incentives to Maximize Oil and Natural Gas Recovery*.

Research is another key to the survival of marginal wells. Unfortunately, the small, independent producers who operate these small wells do not have the means to conduct their own research. Federal and state governments and universities play a crucial role in research and development for fossil energy. Without continued funding of these R&D programs, new methods for producing domestic energy, including gas from coal seams, will remain beyond the reach of American energy producers.

Marginal oil and natural gas wells are an often overlooked, but vitally important, segment of the domestic petroleum industry. As demand for oil and natural gas continues to rise, America can look first to its own back yard for answers.

And that is an encouraging story.

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What is Marginal Oil?

Marginal oil is oil produced from wells that operate on the lower edge of profitability. Generally speaking, low-volume “stripper” wells — defined by the IOGCC as those wells producing 10 barrels of oil per day or less — fall into this category. The IOGCC has monitored the status of stripper wells in the United States since the 1940s, when our first stripper well surveys appeared.

Why all the concern about such small-volume wells? While each individual well contributes only a small amount of oil (2.21 barrels a day, on average), there are 402,072 of them in the United States. Combined, these stripper wells produced more than 323 million barrels of oil in 2002, 30 percent of the oil produced onshore in the lower 48 states.

Many states have programs that allow a well to temporarily stop production. These “idle” wells are not included in the abandoned well category of this report; only wells that have been permanently plugged are included in the IOGCC’s definition. Also not included in this study’s abandoned well figures are “orphaned” wells. These are wells that are not producing, have not been plugged, and whose owners are either insolvent or cannot be located. For more information about idled and orphaned wells, order a copy of the IOGCC study on these wells, *Produce or Plug: The Dilemma over the Nation’s Idle Oil and Natural Gas Wells*.

U. S. Stripper Oil Well Data – Past 10 Years

Year	Number of Stripper Oil Wells	Stripper Oil Production (M bbls)	Average Daily Production Per Well (bbls)	Pluggings/ Abandonments
1993	452,248	355,961	2.16	16,914
1994	442,500	339,930	2.10	17,896
1995	433,048	332,288	2.10	16,389
1996	428,842	323,468	2.06	16,674
1997	420,674	322,090	2.10	15,172
1998	406,380	316,870	2.14	13,912
1999	410,680	315,514	2.10	11,227
2000	411,629	325,947	2.16	10,718
2001	403,459	316,099	2.15	12,234
2002	402,072	323,777	2.21	13,635

Ranking by State

	Number of Stripper Oil Wells	Production from Stripper Oil Wells (bbls)	Total 2002 Oil Production (Mbbbls)	Average Daily Production Per Well
1	Texas	Texas	Texas	Alabama
2	Oklahoma	Oklahoma	California	North Dakota
3	Kansas	California	Oklahoma	California
4	Ohio	Kansas	Louisiana	Arizona
5	California	Louisiana	New Mexico	Utah
6	Louisiana	New Mexico	Wyoming	Mississippi
7	Kentucky	Illinois	Kansas	South Dakota
8	Illinois	Wyoming	North Dakota	Nebraska
9	Pennsylvania	Colorado	Colorado	Texas
10	New Mexico	Ohio	Mississippi	New Mexico
11	Wyoming	Michigan	Montana	Oklahoma
12	West Virginia	Arkansas	Utah	Michigan
13	Colorado	Pennsylvania	Illinois	Arkansas
14	Indiana	North Dakota	Arkansas	Colorado
15	Michigan	Kentucky	Michigan	Montana
16	Arkansas	Indiana	Ohio	Kansas
17	New York	Montana	Alabama	Wyoming
18	Montana	Nebraska	Nebraska	Louisiana
19	Nebraska	Utah	Kentucky	Illinois
20	North Dakota	West Virginia	Pennsylvania	Tennessee
21	Utah	Alabama	Indiana	Indiana
22	Alabama	Mississippi	West Virginia	Virginia
23	Mississippi	Tennessee	South Dakota	Missouri
24	Tennessee	New York	Tennessee	Ohio
25	Missouri	Missouri	New York	West Virginia
26	South Dakota	South Dakota	Missouri	Pennsylvania
27	Arizona	Arizona	Arizona	Kentucky
28	Virginia	Virginia	Virginia	New York

NOTE: These rankings do not include Alaska, Florida and federal offshore which do not have any production from stripper wells.

Secondary Recovery

The term "secondary recovery" encompasses a variety of techniques designed to increase oil recovery from an existing well. Pressure in an underground formation pushes oil upward, allowing it to be extracted. In older wells and mature fields, this pressure has diminished over time, decreasing the flow of oil. Secondary recovery techniques permit the injection of a substance, such as water or gas, into the formation. This increases the pressure and encourages the oil to flow more easily.

Secondary Recovery of Stripper Oil As of January 1, 2003

State	Estimated Secondary Oil Produced from Stripper Wells (Mbbls)	Percent of Total Stripper Production from Secondary
Alabama	976	85.5
Arkansas	272	08.8
Colorado	8,016	41.8
Kansas	12,251	49.0
Kentucky	1,592	77.7
Missouri	82	86.3
Nebraska	1,133	65.9
New Mexico	5,436	40.6
New York	43	24.6
Ohio	51	01.2
Oklahoma	29,276	52.0
South Dakota	13	48.1
West Virginia	356	28.5

National Stripper Oil Well Survey

As of January 1, 2003

State	Number of Stripper Oil Wells	Production from Stripper Oil Wells (bbls)	Oil Wells Plugged and Abandoned	Average Daily Production Per Well
Alabama	639	1,141,083	3	4.89
Arizona	17	23,951	0	3.86
Arkansas	3,362	3,087,798	42	2.52
California	24,420	35,030,269	2,452	3.93
Colorado	5,384	4,643,717	119	2.36
Illinois	*17,466	*10,720,000	*710	*1.68
Indiana	4,956	1,962,078	125	1.08
Kansas	33,317	25,002,372	1,722	2.06
Kentucky	19,462	2,049,971	237	0.29
Louisiana	20,891	14,999,393	*731	1.97
Michigan	3,428	3,397,608	155	2.72
Mississippi	442	562,190	109	3.48
Missouri	364	95,071	4	0.72
Montana	2,274	1,842,960	65	2.22
Nebraska	1,451	1,717,983	100	3.24
New Mexico	13,379	13,386,587	217	2.74
New York	2,758	174,766	65	0.17
North Dakota	1,384	2,263,059	55	4.48
Ohio	28,850	4,398,074	183	0.42
Oklahoma	56,673	56,299,808	774	2.72
Pennsylvania	*15,470	*2,324,000	~210	0.41
South Dakota	22	27,345	1	3.41
Tennessee	424	246,026	*38	1.59
Texas	124,551	127,252,695	5,228	2.80
Utah	1,049	1,445,945	16	3.77
Virginia	13	3,428	0	0.72
West Virginia	8,210	*1,248,000	46	0.42
Wyoming	11,416	8,430,429	228	2.02
TOTALS	402,072	323,776,606	13,635	2.21

* Estimated.

~ Does not include wells plugged under the state's abandoned and orphaned well plugging programs.

National Stripper Oil Well Survey

As of January 1, 2003

State	Total 2002 Oil Production (Mbbls)	Stripper Oil Well Reserves		Total
		Primary	Secondary (Mbbls)	
Alabama	5,174	1,021	1,107	2,128
Arizona	63	230	0	230
Arkansas	7,344	35,056	29,983	65,039
California	288,280	66,253	58,753	125,006
Colorado	19,178	13,830	10,510	24,340
Illinois	*13,250	14,662	14,681	29,343
Indiana	1,962	7,690	7,615	15,305
Kansas	33,343	57,870	52,076	109,946
Kentucky	2,721	3,892	7,415	11,307
Louisiana	60,378	64,710	62,172	126,882
Michigan	7,219	18,273	17,557	35,830
Mississippi	17,014	7,278	6,454	13,732
Missouri	95	1,305	1,280	2,585
Montana	16,938	28,525	34,865	63,390
Nebraska	2,779	2,495	4,490	6,985
New Mexico	58,293	22,016	16,609	38,625
New York	179	808	281	1,089
North Dakota	30,800	25,540	25,035	50,575
Ohio	6,004	32,200	106	32,306
Oklahoma	66,030	97,459	104,737	202,196
Pennsylvania	*2,324	8,210	11,814	20,024
South Dakota	1,214	142	136	278
Tennessee	316	214	144	358
Texas	365,817	523,686	561,675	1,085,361
Utah	13,728	9,995	9,795	19,790
Virginia	25	51	50	101
West Virginia	1,248	4,139	3,785	7,924
Wyoming	54,726	38,250	36,750	75,000
TOTALS	1,076,442 +	1,085,800	1,079,875	2,165,675

* Estimated.

+ Total represents only oil production from states with stripper wells.

Number of Stripper Oil Wells Vs. Stripper Oil Well Production 2001–2002

State	2001		2002	
	Number of Stripper Wells	Production from Stripper Wells (bbls)	Number of Stripper Wells	Production from Stripper Wells (bbls)
Alabama	641	1,054,118	639	1,141,083
Arizona	20	25,942	17	23,951
Arkansas	3,404	3,316,454	3,362	3,087,798
California	24,303	35,133,050	24,420	35,030,269
Colorado	7,003	4,646,241	5,384	4,643,717
Illinois	17,876	10,220,000	*17,466	*10,720,000
Indiana	5,034	2,021,618	4,956	1,962,078
Kansas	33,886	25,178,007	33,317	25,002,372
Kentucky	19,615	2,077,228	19,462	2,049,971
Louisiana	21,024	16,126,868	20,891	14,999,393
Michigan	2,210	1,849,850	3,428	3,397,608
Mississippi	385	490,784	442	562,190
Missouri	308	90,919	364	95,071
Montana	2,267	1,830,438	2,274	1,842,960
Nebraska	1,475	1,765,208	1,451	1,717,983
New Mexico	13,243	13,175,602	13,379	13,386,587
New York	2,876	183,095	2,758	174,766
North Dakota	1,340	2,110,860	1,384	2,263,059
Ohio	28,887	4,904,815	28,850	4,398,074
Oklahoma	55,295	47,070,879	56,673	56,299,808
Pennsylvania	15,270	2,233,000	*15,470	*2,324,000
South Dakota	20	34,574	22	27,345
Tennessee	288	241,036	424	246,026
Texas	125,823	129,017,097	124,551	127,252,695
Utah	1,043	1,449,051	1,049	1,445,945
Virginia	16	5,764	13	3,428
West Virginia	8,384	1,250,000	8,210	*1,248,000
Wyoming	11,523	8,596,694	11,416	8,430,429
TOTALS	403,459	316,099,192	402,072	323,776,606

* Estimated.

Number of Stripper Oil Wells Vs. Stripper Oil Well Production 1999–2000

State	1999		2000	
	Number of Stripper Wells	Production from Stripper Wells (bbls)	Number of Stripper Wells	Production from Stripper Wells (bbls)
Alabama	623	1,198,666	627	1,143,718
Arizona	20	19,813	20	21,083
Arkansas	3,803	3,024,751	3,286	3,211,423
California	21,541	29,204,360	22,244	31,499,570
Colorado	7,739	4,133,362	7,618	3,913,368
Illinois	19,016	11,675,350	18,491	10,450,000
Indiana	5,101	1,997,991	5,049	2,052,000
Kansas	39,172	27,654,934	35,359	25,062,955
Kentucky	23,140	2,287,088	24,585	2,372,072
Louisiana	21,269	15,820,924	21,091	15,286,171
Michigan	1,993	1,398,712	2,550	3,214,363
Mississippi	426	459,574	376	576,252
Missouri	299	91,487	327	106,057
Montana	2,325	1,834,431	2,312	1,775,017
Nebraska	1,498	1,828,293	1,483	1,831,497
New Mexico	12,057	12,005,005	12,642	12,823,174
New York	3,170	190,933	2,638	180,591
North Dakota	1,286	1,841,780	1,357	2,112,883
Ohio	28,960	4,269,317	28,918	5,378,100
Oklahoma	65,730	50,039,671	60,120	50,068,248
Pennsylvania	14,450	2,138,000	15,170	2,223,500
South Dakota	18	16,858	17	15,867
Tennessee	392	246,054	301	189,156
Texas	120,074	131,129,272	126,028	135,151,385
Utah	898	1,302,804	943	1,418,314
Virginia	13	3,991	15	4,599
West Virginia	8,434	1,390,000	8,450	1,300,000
Wyoming	7,233	8,310,862	9,612	12,565,818
TOTALS	410,680	315,514,283	411,629	325,947,181

What is Marginal Gas?

Marginal gas is natural gas produced from a well that operates on the lower edge of profitability. Generally speaking, these are low-volume “stripper” gas wells — defined by the IOGCC as a natural gas well that produces 60 thousand cubic feet (Mcf) per day or less.

Stripper gas wells represent 9.9 percent of the total natural gas produced onshore in the lower 48 United States.

The table below indicates the status of stripper gas production over the past 10 years. The number of gas wells in the stripper category has steadily increased during the past nine years. Total production from stripper gas wells also has steadily increased, while average daily production showed a slight annual increase before leveling off in 2002.

As with stripper oil wells, “abandoned” natural gas wells are those that have been permanently plugged. Significantly, the total number of pluggings increased in 2002 for the second straight year while demand for natural gas continues to rise. According to a 1999 study conducted by the National Petroleum Council, natural gas demand is likely to increase to 29 trillion cubic feet (Tcf) in 2010 and top 31 Tcf in 2015.

It is interesting to note, however, that numbers do not always tell the whole story. In Colorado, the 2002 numbers show a decline in marginal natural gas production. That decline, in fact, can be attributed to a successful effort by producers in the Denver-Julesburg Basin to “re-frac” a number of wells -- moving the wells above the 60 mcf threshold into “economic producer” status and out of this survey.

Globally, projections show natural gas usage is projected to grow faster than any other primary energy source — 3.2 percent per year compared to about 2 percent for oil and coal. Much of the increase in gas usage will fuel electricity generation, particularly in industrialized countries where natural gas can replace other fossil fuels used for this purpose (Source: Energy Information Administration).

U.S. Stripper Natural Gas Well Data — Past 10 Years

Year	Number of Stripper Gas Wells	Stripper Gas Production (Mcf)	Pluggings/ Abandonments	Average Daily Production Per Well (Mcf)
1993	160,581	1,026,238,697	3,499	17.5
1994	159,369	940,420,777	3,163	16.2
1995	159,669	925,563,034	3,189	15.9
1996	168,702	986,676,219	4,671	16.0
1997	189,756	1,042,153,002	4,661	15.0
1998	199,745	1,104,683,975	4,203	15.2
1999	207,766	1,138,979,506	3,546	15.3
2000	223,222	1,258,726,664	3,534	15.4
2001	234,507	1,353,516,378	3,600	15.8
2002	245,961	1,418,273,779	3,870	15.8

Natural Gas

Ranking by State

	Number of Stripper Natural Gas Wells	Production from Stripper Natural Gas Wells (Mcf)	Total 2002 Natural Gas Production (Mcf)	Average Daily Production Per Well
1	Pennsylvania	Texas	Texas	Virginia
2	West Virginia	West Virginia	Wyoming	Michigan
3	Ohio	Oklahoma	Oklahoma	Kansas
4	Texas	Pennsylvania	New Mexico	Alabama
5	Oklahoma	Kansas	Colorado	Mississippi
6	Kentucky	New Mexico	Louisiana	Utah
7	Wyoming	Kentucky	Kansas	Montana
8	Kansas	Ohio	Alabama	Colorado
9	Louisiana	Colorado	Michigan	Arkansas
10	New Mexico	Wyoming	Utah	New Mexico
11	Colorado	Michigan	West Virginia	Oklahoma
12	New York	Louisiana	Pennsylvania	North Dakota
13	Michigan	Montana	Arkansas	Texas
14	Montana	Alabama	Mississippi	California
15	Arkansas	Arkansas	Ohio	Nebraska
16	Alabama	New York	California	South Dakota
17	Indiana	Utah	Kentucky	West Virginia
18	Utah	California	Montana	Kentucky
19	California	Mississippi	Virginia	Wyoming
20	Tennessee	Virginia	New York	Louisiana
21	Mississippi	Tennessee	North Dakota	Tennessee
22	Illinois	Indiana	Tennessee	Pennsylvania
23	Virginia	Nebraska	Indiana	Ohio
24	Nebraska	North Dakota	Nebraska	Maryland
25	South Dakota	South Dakota	South Dakota	New York
26	North Dakota	Illinois	Arizona	Illinois
27	Maryland	Maryland	Illinois	Indiana
28	Arizona	Arizona	Maryland	Arizona

NOTE: These rankings do not include Alaska, Florida and federal offshore which do not have any production from stripper wells.

Natural Gas

National Stripper Natural Gas Well Survey

As of January 1, 2003

State	Number of Stripper Gas Wells	Production from Stripper Gas Wells (Mcf)	Gas Wells Plugged and Abandoned	Average Daily Production Per Well (Mcf)	Total 2002 Gas Production (MMcf)
Alabama	**1,696	**18,139,406	**16	29.3	**388,632
Arizona	4	3,387	0	2.3	304
Arkansas	1,719	15,574,407	24	24.8	148,463
California	446	3,506,947	69	21.5	92,075
Colorado	6,701	60,945,434	33	24.9	1,277,773
Illinois	172	184,860	5	2.9	*248
Indiana	1,545	1,309,120	2	2.3	1,309
Kansas	10,437	124,877,543	298	32.8	458,797
Kentucky	16,010	78,444,980	52	13.4	88,259
Louisiana	9,595	*40,835,950	*396	11.6	1,259,717
Maryland	6	13,446	0	6.1	13
Michigan	4,100	55,623,429	65	37.1	267,512
Mississippi	260	2,718,961	35	28.6	99,496
Montana	3,533	25,286,348	59	27.3	79,376
Nebraska	99	750,809	8	20.7	856
New Mexico	9,232	81,059,390	172	24.1	1,405,600
New York	5,442	10,637,283	41	5.3	36,217
North Dakota	55	449,971	2	22.4	15,156
Ohio	33,345	75,993,000	398	6.2	97,154
Oklahoma	**17,676	**153,207,218	365	23.7	**1,453,812
Pennsylvania	*40,830	*131,800,000	~148	8.8	*157,800
South Dakota	56	396,482	0	19.3	531
Tennessee	401	1,586,127	*15	10.8	2,051
Texas	32,200	258,983,600	1,351	22.0	4,845,405
Utah	929	9,359,853	6	27.6	260,544
Virginia	127	1,807,834	9	38.9	76,914
West Virginia	37,528	*208,775,000	200	15.2	210,500
Wyoming	**11,817	**56,002,994	101	13.0	**1,538,346
TOTALS	245,961	1,418,273,778	3,870	15.8	14,262,860+

* Estimated.

** Includes natural gas from coal seams.

~ Does not include wells plugged under the state's abandoned and orphaned well plugging programs.

+ Total represents only gas production from states with stripper wells.

Number of Stripper Gas Wells Vs. Stripper Gas Well Production 2001–2002

State	2001		2002	
	Number of Stripper Wells	Production From Stripper Wells (Mcf)	Number of Stripper Wells	Production From Stripper Wells (Mcf)
Alabama	**1,562	**16,426,849	**1,696	**18,139,406
Arizona	4	12,494	4	3,387
Arkansas	1,685	14,384,737	1,719	15,574,407
California	422	3,661,981	446	3,506,947
Colorado	9,696	117,016,679	6,701	60,945,434
Illinois	84	84,000	172	184,860
Indiana	1,533	1,063,673	1,545	1,309,120
Kansas	6,350	74,416,072	10,437	124,877,543
Kentucky	15,492	72,635,394	16,010	78,444,980
Louisiana	9,481	37,344,000	9,595	*40,835,950
Maryland	10	49,442	6	13,446
Michigan	3,423	44,411,120	4,100	55,623,429
Mississippi	237	2,040,032	260	2,718,961
Montana	3,411	24,194,551	3,533	25,286,348
Nebraska	97	779,443	99	750,809
New Mexico	8,844	78,022,278	9,232	81,059,390
New York	5,530	11,049,922	5,442	10,637,283
North Dakota	65	341,700	55	449,971
Ohio	33,306	72,905,000	33,345	75,993,000
Oklahoma	13,550	126,632,440	**17,676	**153,207,218
Pennsylvania	39,480	130,853,000	*40,830	*131,800,000
South Dakota	61	475,009	56	396,482
Tennessee	405	1,059,499	401	1,586,127
Texas	31,018	249,667,163	32,200	258,983,600
Utah	751	7,445,472	929	9,359,853
Virginia	150	2,238,136	127	1,807,834
West Virginia	37,539	221,662,000	37,528	*208,775,000
Wyoming	10,321	42,644,292	**11,817	**56,002,994
TOTAL	234,507	1,353,516,378	245,961	1,418,273,779

* Estimated.

** Includes natural gas from coal seams.

Number of Stripper Gas Wells Vs. Stripper Gas Well Production 1999–2000

State	1999		2000	
	Number of Stripper Wells	Production From Stripper Wells (Mcf)	Number of Stripper Wells	Production From Stripper Wells (Mcf)
Alabama	188	1,860,016	**1,416	**14,389,992
Arizona	2	13,015	5	39,937
Arkansas	1,317	13,147,008	1,609	14,926,696
California	390	3,158,092	369	2,832,541
Colorado	9,583	55,584,112	10,196	57,973,752
Illinois	101	88,000	101	88,000
Indiana	1,498	854,746	1,502	829,000
Kansas	3,741	46,089,777	8,701	94,148,749
Kentucky	14,381	68,232,871	13,855	72,477,105
Louisiana	9,301	28,650,000	9,645	26,899,000
Maryland	13	75,080	7	34,036
Michigan	2,654	36,802,624	3,165	41,586,990
Mississippi	176	1,510,691	449	1,652,289
Montana	3,130	23,194,775	3,267	23,043,552
Nebraska	91	846,096	94	746,111
New Mexico	8,197	74,182,940	8,534	77,671,921
New York	5,301	11,278,424	5,446	11,091,622
North Dakota	63	473,020	63	347,476
Ohio	33,259	67,612,000	33,352	74,484,000
Oklahoma	12,632	114,748,619	11,554	120,014,250
Pennsylvania	34,470	115,390,000	35,337	125,191,000
South Dakota	60	504,639	54	460,942
Tennessee	203	1,183,725	191	1,065,860
Texas	28,281	226,317,787	29,302	238,351,492
Utah	601	5,848,384	626	6,016,921
Virginia	130	2,078,844	133	2,053,579
West Virginia	36,094	218,350,000	36,816	220,000,000
Wyoming	1,909	20,904,221	7,433	30,309,851
TOTALS	207,766	1,138,979,506	223,222	1,258,726,664

** Includes natural gas from coal seams.

Glossary

Frequently Used Abbreviations - Oil

bbls=barrels

Mbbls=one thousand barrels (1,000 barrels)

MMbbls=one million barrels (1,000,000 barrels)

BOPD=barrels of oil per day

BOEPD=barrels of oil equivalent per day

MMBOE=million barrels of oil equivalent per day (1,000,000 barrels of oil equivalent per day)

Frequently Used Abbreviations - Natural Gas

Mcf=one thousand cubic feet (1,000 cubic feet)

Bcf=one billion cubic feet (1,000,000,000 cubic feet)

MCFD=one thousand cubic feet per day (1,000 cubic feet per day)

MMCF=one million cubic feet (1,000,000 cubic feet per day)

MMCFD=one million cubic feet per day (1,000,000 cubic feet per day)

Source:

Langenkamp, Robert D., ed. *The Illustrated Petroleum Reference Dictionary*. 4th ed. PennWell Books: Tulsa, 1994.

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About the INTERSTATE OIL and GAS COMPACT COMMISSION

The Interstate Oil and Gas Compact Commission (IOGCC) represents the governors of 37 states — 30 member and seven associate states — that produce virtually all the domestic oil and natural gas in the United States. Seven international affiliates have been accepted into the IOGCC in recent years.

The organization's mission is to promote the conservation and efficient recovery of domestic oil and natural gas resources, while protecting health, safety and the environment.

Since its creation in 1935, the IOGCC has assisted states in balancing a multitude of interests — maximizing domestic oil and natural gas production, minimizing the waste of irreplaceable natural resources, and protecting human and environmental health — through sound regulatory practices. The IOGCC plays an active role in Washington, D.C., serving as the voice of the states on oil and natural gas issues and advocating states' rights to govern the resources found within their borders.

For more information about the IOGCC, please call 405/525-3556, visit the World Wide Web at www.iogcc.state.ok.us, or send electronic mail to iogcc@iogcc.state.ok.us

Member States

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Alaska (1957)
Arizona (1955)
Arkansas (1941)
California (1974)
Colorado (1935)
Florida (1945)
Illinois (1935)
Indiana (1947)
Kansas (1935)
Kentucky (1942)
Louisiana (1941)
Maryland (1959)
Michigan (1939)
Mississippi (1948)
Montana (1945)
Nebraska (1953)
Nevada (1955)
New Mexico (1935)
New York (1941)
North Dakota (1953)
Ohio (1943)
Oklahoma (1935)
Pennsylvania (1941)
South Dakota (1955)
Texas (1935)
Utah (1957)
Virginia (1982)
West Virginia (1945)
Wyoming (1955)

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Idaho (1960)
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