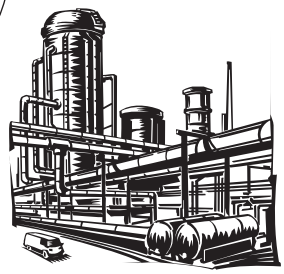
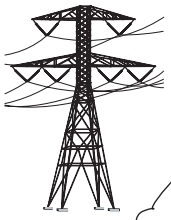
LOUISIANA ENERGY FACTS ANNUAL





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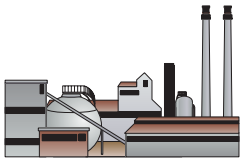

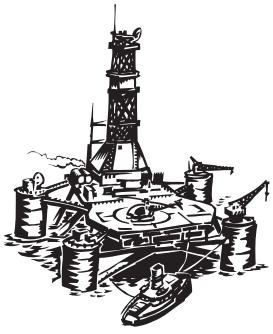

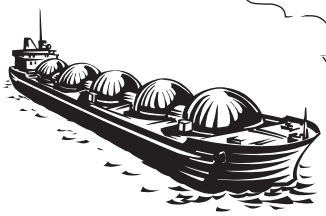

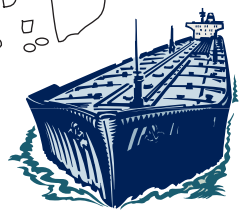

DEPARTMENT OF NATURAL RESOURCES
Technology Assessment Division
January 14, 2004

LOUISIANA ENERGY FACTS

ANNUAL 2003

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Secretary of Natural Resources

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January 14, 2004

General Questions and Comments

The **Louisiana Energy Facts Annual - 2003** was published by the Technology Assessment Division of the Louisiana Department of Natural Resources under the direction of Manuel Lam. The Director of the Division is T. Michael French, and the Assistant Director is William J. Delmar, Jr.

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Table of Contents

Table **Page**

RESERVES

OTHER

APPENDICES

APPENDIX E

Louisiana Energy Briefs and Topics

List of Figures

Louisiana Energy Facts
Annual 2003

INTRODUCTION

ABOUT THIS PUBLICATION

The **Louisiana Energy Facts Annual** is published to provide a comprehensive compendium of Louisiana related energy production and use statistics on an annual basis. To aid in the interpretation of the data and the discernment of trends, the data tables are supplemented with numerous graphs and charts. The **Annual** is published as soon as sufficient data for the previous calendar year is available. Due to time lags in the availability of some of the data, this means there is approximately a nine month lag before the year's **Annual** can be published. Some changes have been introduced in order to incorporate the latest available data.

If you receive our monthly **Louisiana Energy Facts**, you may find that some of the previously published data has been revised in the **Annual**. This data, by its nature, continues to be revised, sometimes years after its initial publication. We try to bring attention to these changes by marking them as revisions.

The most recent **Louisiana Energy Facts** monthly may contain even more updates. Please refer to the recent monthlies for the very latest data. The **Louisiana Energy Facts** monthly is available in print and online at our website:

http://www.dnr.state.la.us/TAD

Select **Energy Data & Reports**, then…

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Energy Facts and Figures

Note: the data in these tables will be updated throughout the year. The data files are not audited and will change as more reliable data becomes available.

The state oil and gas production data has been modified. Starting with the 2002 Annual, current production data and all future reports will reflect changes due to modifications in the reporting system by the DNR Office of Conservation, Production Audit Section. The new data for oil will not include crude oil, condensate, or raw make recovered from gas plants. In the past, these products were added to the state production as crude oil or condensate. A separate report on gas plant liquids production is not available at present. The gas data system was adjusted to reflect production from the well on the date produced. It was previously reported on the date first purchased.

This new reporting system should produce more accurate and timely data. The Technology Assessment Division is not the source of the data, but merely reports data provided to us by the responsible agency. We understand that users of our time series data need consistency and, for that reason, our time series have been adjusted backward to reflect these new modifications.

We hope you find this **Annual** useful, and we welcome any comments or suggestions.

Any comments or suggestions about this publication should be directed to the Technology Assessment Division staff members listed on the General Questions and Comments page.

2003 HIGHLIGHTS

The data in the 2003 **Louisiana Energy Facts Annual** contains some recent trends.

Crude oil and natural gas prices are rising

Gas price average was $2.66 per MCF in January 2002, and $5.62 per MCF in December 2003. The Louisiana natural gas spot market average hit bottom at $1.85 per MCF in October 2001, the lowest price in five years, and peaked in March 2003 at $7.65 per MCF. The 2004 average price for gas is expected to be around $4.30 per MCF.

South Louisiana crude oil was priced at $20.10 per barrel in January 2002 and in January 2004 it was 34.51 per barrel, a 71% increase compared to 2002. The 2004 average is expected to be around $30.00 per barrel.

Oil and gas production is decreasing

Louisiana state crude oil and condensate production, excluding federal Outer Continental Shelf (OCS), dropped to 89 million barrels in 2003, a 5% decrease from 2002. An additional 3% decrease in production is expected in 2004. Louisiana state natural gas and casinghead, excluding federal OCS, dropped to 1.32 TCF in 2003, a 3% decrease from 2002. It is expected to decrease an additional 6% in 2004. The decline in oil and gas production in 2003 was related to low drilling and mature reservoirs.

Drilling activity is low

The high price of south Louisiana sweet crude oil and natural gas in the spot market did not increase the exploration and development of oil and gas fields. The average number of active rigs dropped to 157 in 2003, a 36% decrease from 2001. The average number of active rigs is expected to increase slightly in 2004. Drilling permits issued in state controlled areas, excluding federal OCS, were 1,264 in 2003, a 19% increase from 2002. The number of drilling permits issued is expected to increase in 2004. Permit activity is usually a leading indicator of drilling activity.

Other significant items

Louisiana’s proved oil and gas reserves were lower in 2003 than in 2002. This was due to low drilling and high cost in mature producing fields. Non-agricultural employment was also lower in 2003, as opposed to 2002, due to the downturn in the U.S. economy.

SUBDIVISIONS OF LOUISIANA

Table 1

LOUISIANA STATE CRUDE OIL PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	31,485,800	96,155,535	22,793,085	150,434,420
1983	29,831,731	93,737,027	22,806,268	146,375,026
1984	29,590,376	96,690,421	25,117,916	151,398,713
1985	29,436,551	97,622,513	24,292,173	151,351,237
1986	26,795,748	97,853,602	24,619,169	149,268,519
1987	25,036,758	95,476,492	23,372,480	143,885,730
1988	23,966,252	88,701,776	22,800,047	135,468,075
1989	22,249,645	78,352,396	20,890,198	121,492,239
1990	22,681,173	72,770,216	21,356,618	116,808,007
1991	22,693,470	69,567,532	22,498,111	114,759,114
1992	21,914,801	68,285,536	21,820,087	112,020,424
1993	20,088,542	65,698,407	21,593,063	107,380,012
1994	17,236,407	59,754,375	21,163,672	98,154,453
1995	16,643,923	59,472,528	20,140,864	96,257,315
1996	16,900,516 r	58,970,676 r	19,117,088 r	94,988,280 r
1997	17,099,931 r	60,458,696 r	17,213,800 r	94,772,427 r
1998	15,607,719 r	60,784,952 r	15,120,246 r	91,512,918 r
1999	12,904,010 r	56,035,888 r	12,098,536 r	81,038,434 r
2000	11,742,388 r	53,096,865 r	11,132,899 r	75,972,152 r
2001	10,644,412 r	50,316,701 r	10,091,570 r	71,052,683 r
January	800,467 r	3,921,308 r	750,858 r	5,472,633 r
February	719,284 r	3,535,742 r	673,722 r	4,928,748 r
March	785,745 r	3,874,026 r	734,786 r	5,394,557 r
April	747,791 r	3,695,871 r	698,052 r	5,141,714 r
May	789,828 r	3,910,383 r	735,859 r	5,436,071 r
June	760,565 r	3,768,801 r	707,093 r	5,236,459 r
July	759,627 r	3,763,619 r	704,587 r	5,227,833 r
August	757,027 r	3,757,997 r	700,813 r	5,215,837 r
September	657,930 r	3,271,534 r	607,844 r	4,537,309 r
October	677,120 r	3,056,518 r	466,618 r	4,200,257 r
November	694,014 r	3,460,358 r	638,480 r	4,792,852 r
December	724,497 r	3,616,673 r	665,082 r	5,006,253 r
2002 Total	**8,873,897 r**	**43,632,832 r**	**8,083,794 r**	**60,590,523 r**
January	731,998	3,653,221	672,202	5,057,421
February	684,990	3,332,890	632,441	4,650,320
March	758,397	3,694,198	698,972	5,151,566
April	752,879	3,569,573	692,694	5,015,146
May	770,352	3,660,250	707,611	5,138,213
June	737,660	3,507,620	676,545	4,921,825
July	748,979	3,563,962	685,966	4,998,907
August	697,475	3,321,945	637,699	4,657,119
September	697,426	3,324,633	636,572	4,658,631
October	711,131	3,392,837	647,987	4,751,955
November	701,477 e	3,349,642 e	638,116 e	4,689,235 e
December	702,808 e	3,358,884 e	638,248 e	4,699,940 e
2003 Total	**8,695,573 e**	**41,729,653 e**	**7,965,052 e**	**58,390,278 e**

e Estimated r Revised p Preliminary

Table 2

LOUISIANA STATE CONDENSATE PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	4,120,663	32,663,371	2,147,896	38,931,930
1983	3,598,850	27,638,588	1,996,504	33,233,942
1984	3,140,006	30,785,661	1,918,564	35,844,231
1985	2,668,233	29,260,762	1,721,098	33,650,093
1986	2,755,749	26,709,496	2,176,970	31,642,215
1987	2,512,024	25,594,838	1,811,598	29,918,460
1988	2,780,394	27,008,968	1,739,471	31,528,833
1989	2,979,706	26,767,411	1,856,899	31,604,016
1990	3,341,804	26,878,867	1,686,289	31,906,959
1991	4,008,686	26,222,372	1,685,239	31,916,297
1992	3,787,323	25,391,530	1,601,299	30,780,152
1993	3,647,049	25,232,030	1,629,026	30,508,106
1994	3,726,244	23,747,186	1,497,058	28,970,488
1995	3,927,365	22,863,248	2,177,307	28,967,920
1996	5,162,593 r	26,495,266 r	2,313,383	33,971,242 r
1997	4,397,384 r	24,247,395 r	2,737,982	31,382,760 r
1998	3,962,756 r	24,405,878 r	2,400,173	30,768,807 r
1999	3,555,355 r	24,032,940 r	2,233,271	29,821,566 r
2000	3,670,258 r	25,214,341 r	2,339,726	31,224,324 r
2001	3,917,587 r	27,394,426 r	2,573,009	33,885,023 r
January	310,011 r	2,234,829 r	206,297	2,751,137 r
February	305,046 r	2,205,749 r	203,547	2,714,341 r
March	332,871 r	2,414,406 r	222,727	2,970,004 r
April	322,117 r	2,343,710 r	216,133	2,881,960 r
May	328,585 r	2,398,309 r	221,094	2,947,988 r
June	309,192 r	2,263,910 r	208,634	2,781,736 r
July	308,091 r	2,263,021 r	208,481	2,779,593 r
August	317,863 r	2,342,242 r	215,707	2,875,812 r
September	284,490 r	2,103,060 r	193,615	2,581,165 r
October	414,281 r	1,843,841 r	177,453	2,435,575 r
November	299,369 r	2,227,434 r	204,924	2,731,728 r
December	299,413 r	2,235,049 r	205,554	2,740,017 r
2002 Total	**3,831,330 r**	**26,875,559 r**	**2,484,167**	**33,191,056 r**
January	293,112	2,197,347	201,954	2,692,413
February	274,909	2,016,068	198,631	2,489,608
March	309,022	2,272,394	223,832	2,805,248
April	302,187	2,228,257	219,430	2,749,874
May	293,764	2,172,214	213,857	2,679,835
June	278,787	2,067,332	203,477	2,549,595
July	270,151	2,009,099	197,690	2,476,939
August	262,599	1,958,465	192,659	2,413,723
September	263,306	1,969,344	193,678	2,426,328
October	273,093	2,048,427	201,404	2,522,924
November	264,988 e	1,993,395 e	195,941 e	2,454,325 e
December	265,764 e	2,005,060 e	197,035 e	2,467,859 e
2003 Total	**3,351,680 e**	**24,937,403 e**	**2,439,588 e**	**30,728,671 e**

e Estimated r Revised p Preliminary

Table 3

LOUISIANA STATE CRUDE OIL and CONDENSATE PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	35,606,463	128,818,906	24,940,981	189,366,350
1983	33,430,581	121,375,615	24,802,772	179,608,968
1984	32,730,382	127,476,082	27,036,480	187,242,944
1985	32,104,784	126,883,275	26,013,271	185,001,330
1986	29,551,497	124,563,098	26,796,139	180,910,734
1987	27,548,782	121,071,330	25,184,078	173,804,190
1988	26,746,646	115,710,745	24,539,518	166,996,908
1989	25,229,350	105,119,808	22,747,097	153,096,255
1990	26,022,976	99,649,083	23,042,907	148,714,966
1991	26,702,156	95,789,904	24,183,350	146,675,411
1992	25,702,124	93,677,066	23,421,386	142,800,576
1993	23,735,591	90,930,437	23,222,089	137,888,118
1994	20,962,650	83,501,561	22,660,730	127,124,941
1995	20,571,288	82,335,776	22,318,172	125,225,235
1996	22,063,110 r	85,465,942 r	21,430,471 r	128,959,522 r
1997	21,497,315 r	84,706,090 r	19,951,782 r	126,155,187 r
1998	19,570,475 r	85,190,830 r	17,520,419 r	122,281,725 r
1999	16,459,365 r	80,068,828 r	14,331,807 r	110,860,000 r
2000	15,412,646 r	78,311,206 r	13,472,624 r	107,196,476 r
2001	14,561,999 r	77,711,127 r	12,664,580 r	104,937,706 r
January	1,110,478 r	6,156,137 r	957,155 r	8,223,770 r
February	1,024,329 r	5,741,491 r	877,269 r	7,643,089 r
March	1,118,617 r	6,288,432 r	957,513 r	8,364,561 r
April	1,069,908 r	6,039,581 r	914,185 r	8,023,674 r
May	1,118,414 r	6,308,692 r	956,953 r	8,384,059 r
June	1,069,757 r	6,032,711 r	915,727 r	8,018,195 r
July	1,067,718 r	6,026,640 r	913,068 r	8,007,426 r
August	1,074,890 r	6,100,239 r	916,519 r	8,091,649 r
September	942,420 r	5,374,595 r	801,459 r	7,118,474 r
October	1,091,401 r	4,900,359 r	644,072 r	6,635,832 r
November	993,384 r	5,687,792 r	843,405 r	7,524,580 r
December	1,023,911 r	5,851,723 r	870,637 r	7,746,270 r
2002 Total	**12,705,227 r**	**70,508,391 r**	**10,567,961 r**	**93,781,579 r**
January	1,025,110	5,850,568	874,156	7,749,834
February	959,898	5,348,958	831,072	7,139,928
March	1,067,419	5,966,592	922,803	7,956,814
April	1,055,065	5,797,830	912,125	7,765,020
May	1,064,116	5,832,464	921,468	7,818,048
June	1,016,447	5,574,952	880,022	7,471,420
July	1,019,130	5,573,060	883,656	7,475,846
August	960,074	5,280,410	830,357	7,070,842
September	960,732	5,293,977	830,250	7,084,959
October	984,225	5,441,264	849,391	7,274,879
November	966,465 e	5,343,037 e	834,058 e	7,143,560 e
December	968,572 e	5,363,945 e	835,283 e	7,167,799 e
2003 Total	**12,047,253 e**	**66,667,056 e**	**10,404,640 e**	**89,118,949 e**

e Estimated r Revised p Preliminary

DNR Technology Assessment Division

Figure 1

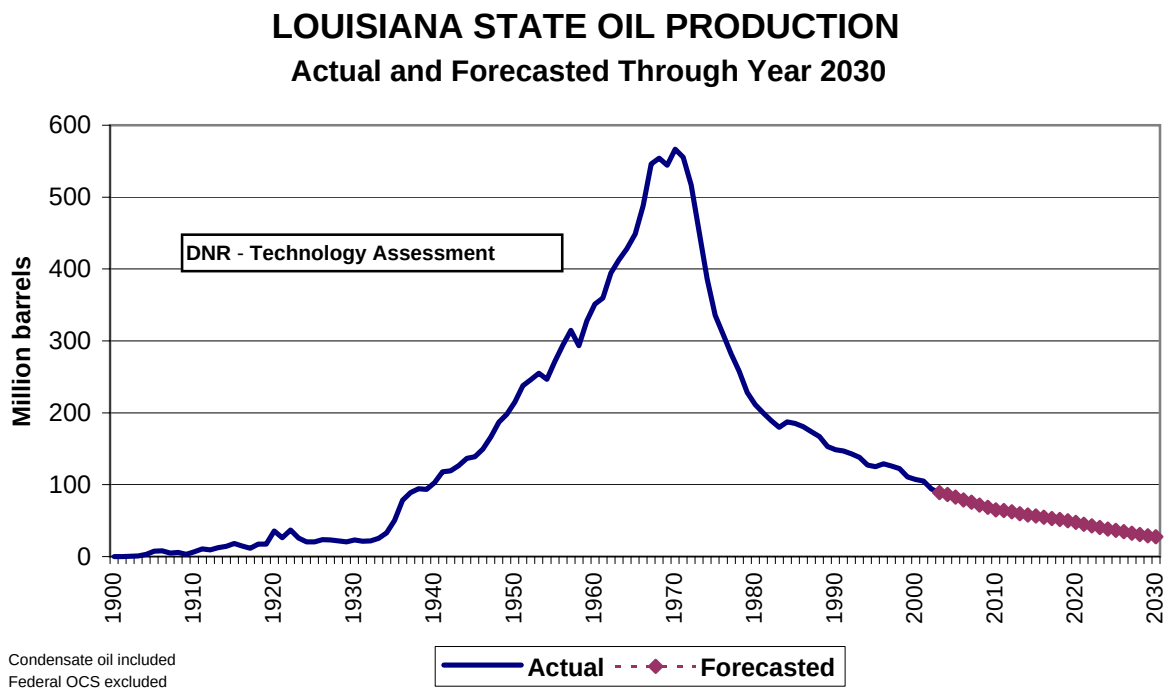
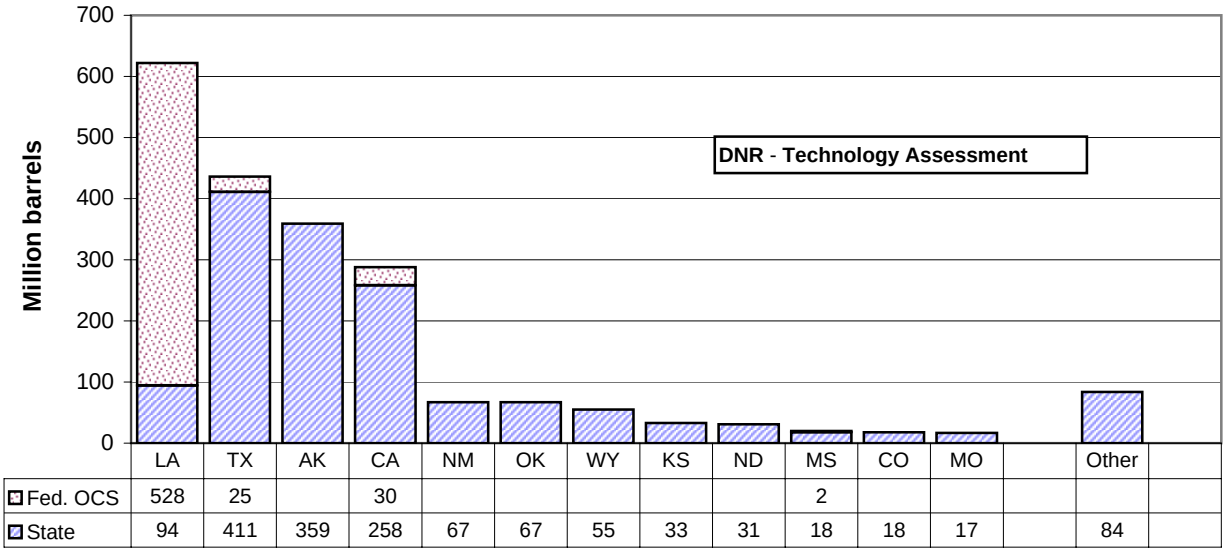


Figure 2



	LA	TX	AK	CA	NM	OK	WY	KS	ND	MS	CO	MO		Other	
Fed. OCS	528	25		30						2					
State	94	411	359	258	67	67	55	33	31	18	18	17		84	

Table 4

LOUISIANA TOTAL CRUDE OIL and CONDENSATE PRODUCTION

(Barrels)

DATE	ONSHORE	OFFSHORE		TOTAL
		State	Federal OCS	
1982	164,425,369	24,940,981	275,513,489	464,879,839
1983	154,806,196	24,802,772	298,093,559	477,702,527
1984	160,206,464	27,036,480	318,024,622	505,267,566
1985	158,988,059	26,013,271	338,901,863	523,903,193
1986	154,114,595	26,796,139	340,152,276	521,063,010
1987	148,620,112	25,184,078	307,950,881	481,755,071
1988	142,457,390	24,539,518	261,936,530	428,933,438
1989	130,349,158	22,747,097	246,207,653	399,303,908
1990	125,672,059	23,042,907	264,670,535	413,385,501
1991	122,492,061	24,183,350	262,647,733	409,323,144
1992	119,379,190	23,421,386	288,918,208	431,718,784
1993	114,666,029	23,222,089	293,443,881	431,331,999
1994	104,464,211	22,660,730	293,077,191	420,202,132
1995	102,907,063	22,318,172	320,255,087	445,480,322
1996	107,529,051 r	21,430,471 r	349,101,048	478,060,570 r
1997	106,203,405 r	19,951,782 r	399,536,004	525,691,191 r
1998	104,761,306 r	17,520,419 r	425,865,901	548,147,626 r
1999	96,528,193 r	14,331,807 r	451,391,454	562,251,454 r
2000	93,723,852 r	13,472,624 r	514,137,284 r	621,333,760 r
2001	92,273,126 r	12,664,580 r	502,623,073 r	607,560,779 r
January	7,266,615 r	957,155 r	44,956,213 r	53,179,983 r
February	6,765,820 r	877,269 r	41,244,065 r	48,887,154 r
March	7,407,048 r	957,513 r	45,436,877 r	53,801,438 r
April	7,109,489 r	914,185 r	43,920,095 r	51,943,769 r
May	7,427,106 r	956,953 r	46,337,096 r	54,721,155 r
June	7,102,468 r	915,727 r	44,326,881 r	52,345,076 r
July	7,094,358 r	913,068 r	45,238,957 r	53,246,383 r
August	7,175,130 r	916,519 r	46,120,022	54,211,671 r
September	6,317,015 r	801,459 r	34,657,054	41,775,528 r
October	5,991,760 r	644,072 r	42,411,522	49,047,354 r
November	6,681,175 r	843,405 r	45,913,893	53,438,473 r
December	6,875,633 r	870,637 r	47,718,891	55,465,161 r
2002 Total	**83,213,618 r**	**10,567,961 r**	**528,281,567 r**	**622,063,146 r**
January	6,875,678	874,156	47,223,634	54,973,468
February	6,308,856	831,072	43,976,644	51,116,572
March	7,034,011	922,803	47,843,845	55,800,659
April	6,852,895	912,125	46,088,099	53,853,119
May	6,896,580	921,468	46,652,674	54,470,722
June	6,591,398	880,022	44,326,881	51,798,301
July	6,592,190	883,656	45,392,186	52,868,032
August	6,240,485	830,357	44,503,824	51,574,666
September	6,254,709	830,250	N/A	7,084,959
October	6,425,488	849,391	N/A	7,274,879
November	6,309,502 e	834,058 e	N/A	7,143,560 e
December	6,332,516 e	835,283 e	N/A	7,167,799 e
2003 Total	**78,714,309 e**	**10,404,640 e**	**366,007,787**	**455,126,736 e**

e Estimated r Revised p Preliminary

TABLE 5

LOUISIANA STATE OIL PRODUCTION* BY TAX RATES

AS PUBLISHED IN SEVERANCE TAX REPORTS[8]

(Barrels)

DATE	FULL RATE	INCAPABLE WELLS RATE	STRIPPER WELLS RATE	TAXED VOLUME
1982	180,197,905	2,955,008	9,103,966	192,301,881
1983	172,094,095	2,884,691	9,731,435	184,710,221
1984	171,425,402	3,099,053	9,830,262	184,354,717
1985	173,545,432	3,110,740	10,513,745	187,169,920
1986	180,108,437	3,208,451	10,059,344	193,376,232
1987	155,987,737	3,201,095	8,809,543	168,015,044
1988	142,605,746	3,288,994	8,242,330	154,150,151
1989	139,442,253	3,265,429	7,429,510	150,165,554
1990	131,140,448	3,274,774	7,154,125	141,577,610
1991	136,212,521	3,888,128	8,112,117	148,212,765
1992	133,399,849	3,665,298	7,718,696	144,783,843
1993	128,699,431	3,448,387	7,240,065	139,387,883
1994	118,109,958	3,691,802	6,347,047 e	128,148,807 e
1995	108,373,913	4,239,717	6,230,454 e	118,844,084 e
1996	103,524,192	3,786,147	6,240,956 e	113,551,295 e
1997	101,772,533	3,466,389	6,101,247 e	111,340,169 e
1998	89,083,365	2,878,225	5,892,007 e	97,853,597 e
1999	85,207,438	2,786,515	5,690,984 e	93,684,937 e
2000	88,411,207	2,783,268	5,322,515 e	96,516,990 e
2001	83,994,058	2,576,683	5,175,142 e	91,745,883 e
January	8,672,311	207,256	401,489 e	9,281,056 e
February	6,949,603	205,696	414,481 e	7,569,780 e
March	6,024,226	213,546	377,244 e	6,615,015 e
April	6,486,915 e	189,319 e	397,277 e	7,073,511 e
May	7,470,540	180,530	405,011 e	8,056,081 e
June	5,765,068	208,798	430,760 e	6,404,626 e
July	6,915,943	242,684	402,961 e	7,561,589 e
August	6,662,692	209,567	416,695 e	7,288,955 e
September	6,949,303	268,295	403,723 e	7,621,320 e
October	5,815,172	216,668	320,885 e	6,352,725 e
November	5,551,589	230,898	363,103 e	6,145,591 e
December	5,775,341	198,644	347,978 e	6,321,963 e
2002 Total	**72,551,789 e**	**2,382,582 e**	**4,284,330 e**	**79,218,700 e**
January	5,417,960	117,267	337,315	5,872,543
February	5,641,872	334,186	523,867	6,499,925
March	6,264,910	217,000	412,522	6,894,433
April	6,257,223	170,007	378,036	6,805,265
May	6,591,733	221,320	417,894	7,230,948
June	6,772,527	236,151	392,884	7,401,562
July	6,800,943	189,158	372,807	7,362,909
August	6,397,575	242,967	485,583	7,126,125
September	5,424,185	160,326	380,538 e	5,965,049 e
October	N/A	N/A	402,379 e	402,379 e
November	N/A	N/A	393,914 e	393,914 e
December	N/A	N/A	387,986 e	387,986 e
2003 Total	**55,568,929**	**1,888,383**	**4,885,726 e**	**62,343,038 e**

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* Due to reporting time lag and well exemptions the above figures are different from actual production.

See footnote in Appendix B.

Figure 3

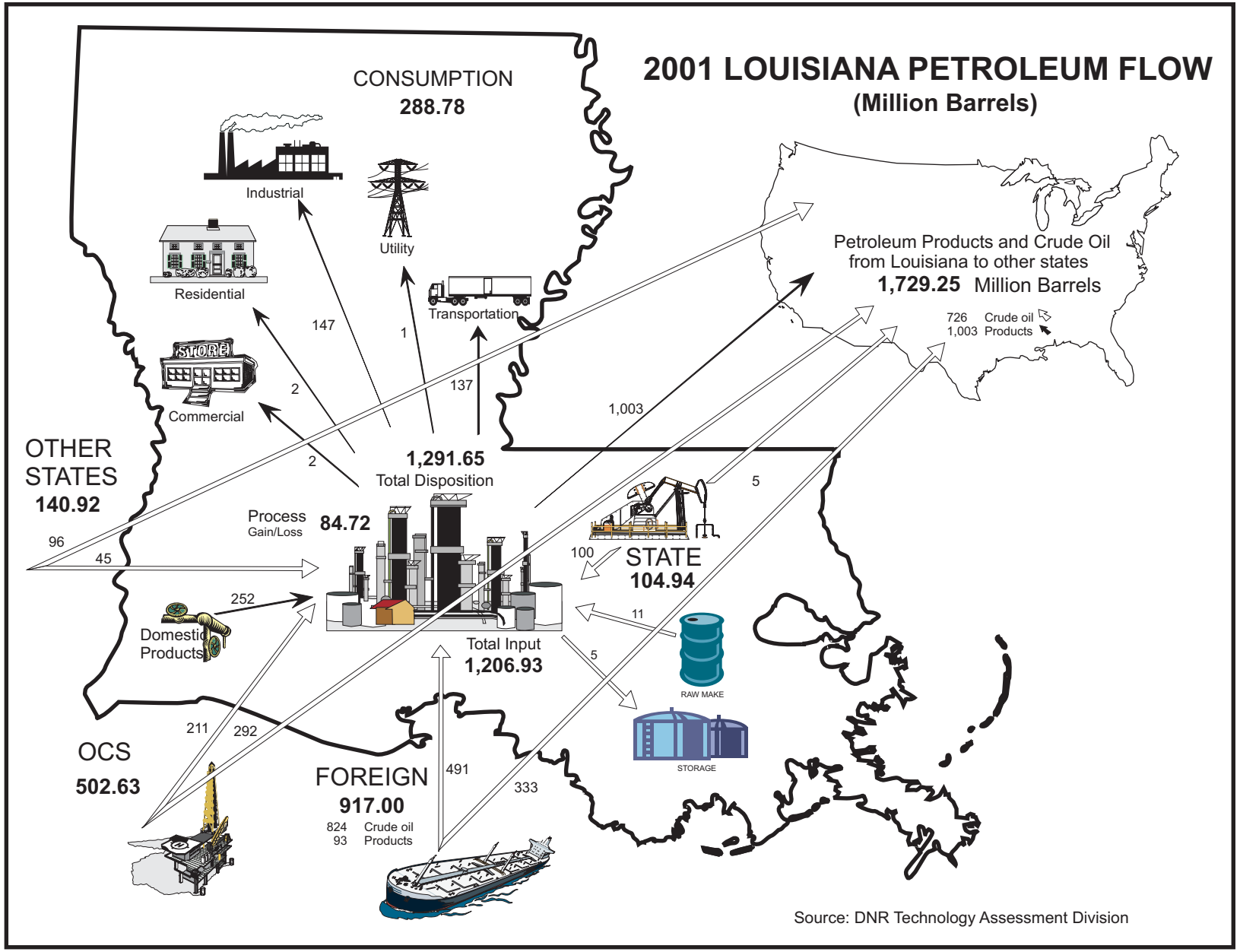
2001 LOUISIANA PETROLEUM FLOW
(Million Barrels)
CONSUMPTION
288.78
Industrial
Utility
Residential
Transportation
Commercial
147
1
2
137
1,003
2
1,291.65
Total Disposition
OTHER STATES
140.92
96
45
Process Gain/Loss
84.72
252
Domestic Products
Total Input
1,206.93
100
STATE
104.94
5
11
5
RAW MAKE
STORAGE
211
292
OCS
502.63
FOREIGN
917.00
824 Crude oil
93 Products
491
333
Petroleum Products and Crude Oil
from Louisiana to other states
1,729.25 Million Barrels
726 Crude oil
1,003 Products
Source: DNR Technology Assessment Division

Table 6

UNITED STATES OCS CRUDE OIL AND CONDENSATE PRODUCTION[12]

(Barrels)

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
PRIOR	11,196,455	1,956	0	11,198,411
1956	11,001,248	13,284	0	11,014,532
1957	16,064,395	5,792	0	16,070,187
1958	24,769,037	0	0	24,769,037
1959	35,697,264	257	0	35,697,521
1960	49,665,891	98	0	49,665,989
1961	64,330,078	0	0	64,330,078
1962	89,733,099	3,483	0	89,736,582
1963	104,526,436	52,804	0	104,579,240
1964	122,495,173	4,953	0	122,500,126
1965	144,964,868	3,747	0	144,968,615
1966	187,831,472	882,598	0	188,714,070
1967	218,995,828	2,865,786	0	221,861,614
1968	263,825,359	3,110,642	2,059,889	268,995,890
1969	300,159,292	2,759,851	9,940,844	312,859,987
1970	333,411,492	2,247,048	24,987,628	360,646,168
1971	385,760,351	1,685,047	31,103,548	418,548,946
1972	387,590,662	1,733,018	22,562,213	411,885,893
1973	374,196,856	1,617,829	18,915,314	394,729,999
1974	342,435,496	1,381,825	16,776,744	360,594,065
1975	313,592,559	1,340,136	15,304,757	330,237,452
1976	301,887,002	1,054,554	13,978,553	316,920,109
1977	290,771,605	909,037	12,267,598	303,948,240
1978	278,071,535	2,107,599	12,085,908	292,265,042
1979	271,008,916	3,595,546	10,961,076	285,565,538
1980	256,688,082	10,502,007	10,198,886	277,388,975
1981	255,875,717	14,284,661	19,605,027	289,765,405
1982	275,513,489	17,263,766	28,434,202	321,211,457
1983	298,093,559	19,710,197	30,527,487	348,331,243
1984	318,024,622	21,960,086	30,254,306	370,239,014
1985	338,901,863	20,640,957	29,781,465	389,324,285
1986	340,152,276	19,835,882	29,227,846	389,216,004
1987	307,950,881	24,634,142	33,556,686	366,141,709
1988	261,936,530	26,115,776	32,615,118	320,667,424
1989	246,207,653	25,887,841	33,072,161	305,167,655
1990	264,670,535	26,439,927	33,312,719	324,423,181
1991	262,647,733	23,899,428	29,146,090	315,693,251
1992	288,918,208	23,582,162	41,222,801	353,726,380
1993	293,443,881	19,151,111	50,078,144	362,675,766
1994	293,077,191	19,121,540	57,229,464	369,474,307
1995	320,255,087	17,347,391	71,254,440	408,875,006
1996	349,101,048	21,078,663	67,804,200	438,003,670
1997	399,536,004	20,927,592	58,279,489	478,775,008
1998	425,865,901	20,128,157	40,636,231	476,655,336
1999	451,391,454	19,832,067	42,071,101	513,317,586
2000	514,137,284	16,432,588	34,373,524	565,770,347
2001	502,623,073	16,447,355	34,763,192	570,971,674 r
2002	528,281,567 e	25,463,216 e	29,783,000 e	608,991,000 e

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See footnote in Appendix B.

Table 7

UNITED STATES CRUDE OIL AND CONDENSATE PRODUCTION AND IMPORTS

(Thousand barrels)

DATE	ALL OCS[12]	DOMESTIC PRODUCTION[7]	IMPORTS OTHER[7]	IMPORTS SPR[7]
1982	321,211	3,156,885	1,212,895	60,225
1983	348,331	3,171,120	1,130,040	85,410
1984	370,239	3,249,714	1,181,814	72,102
1985	389,324	3,274,415	1,125,295	43,070
1986	389,216	3,168,200	1,507,450	17,520
1987	366,142	3,047,385	1,679,365	26,645
1988	320,667	2,979,240	1,850,130	18,666
1989	305,168	2,778,745	2,112,255	20,440
1990	324,423	2,684,575	2,141,455	9,855
1991	315,693	2,707,039	2,110,332	0
1992	353,726	2,618,125	2,212,344	3,594
1993	362,676	2,495,933	2,451,415	5,367
1994	369,474	2,418,981	2,560,220	4,485
1995	408,875	2,383,404	2,642,689	0
1996	438,004	2,368,535	2,738,387	0
1997	478,775	2,339,981	2,918,425	0
1998	476,655	2,293,763	3,120,791	0
1999	513,318	2,162,752	3,132,376	2,065
2000	565,770	2,135,062	3,271,257	3,006
2001	553,860	2,136,179	3,334,438	3,914
January	52,150 r	183,967	266,997	1,026
February	47,747 r	166,254	240,331	1,649
March	52,357 r	183,337	268,155	0
April	50,511 r	176,609	274,211	0
May	53,104 r	183,146	284,853	500
June	51,036 r	176,610	276,352	502
July	52,104 r	178,963	279,315	0
August	53,067	180,648	295,892	0
September	40,418	161,339	263,873	0
October	48,976	175,816	294,333	0
November	52,792	173,774	285,806	1,030
December	54,729	182,720	266,127	1,060
2002 Total	**608,991**	**2,123,183**	**3,296,245**	**5,767**
January	54,158	181,094	264,969	0
February	50,423	165,615	232,495	0
March	54,732	182,604	280,710	0
April	52,941	174,395	294,212	0
May	53,696	179,267	312,422	0
June	51,113	172,380	298,520	0
July	52,343	175,536	311,839	0
August	51324	174,904	314,239	0
September	N/A	169,695	312,351	0
October	N/A	174889	314926	0
November	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A
2003 Total	**420,730**	**1,750,379**	**2,936,683**	**0**

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Table 8

LOUISIANA STATE ROYALTY OIL, GAS AND PLANT PRODUCTS
CALCULATED VOLUMES, Excluding OCS

DATE	OIL (Barrels)	GAS (MCF)	PLANT LIQUIDS (Barrels)
1982	8,756,198	95,448,648	808,946
1983	8,956,936	88,029,268	694,641
1984	8,786,732	86,315,477	944,965
1985	8,404,223	76,612,605	845,349
1986	8,859,310	81,463,285	1,751,664
1987	8,040,773	78,166,315	511,790
1988	7,544,770	69,991,244	456,976
1989	7,184,774	69,936,929	461,237
1990	6,781,765	66,417,089	348,776
1991	6,923,565	61,809,109	1,063,909
1992	6,837,552	57,911,258	1,689,942
1993	6,721,350	67,052,274	698,857
1994	6,288,843	54,798,617	600,660
1995	6,301,254	57,032,170	938,660
1996	6,489,394	60,326,587	477,640
1997	6,534,913	60,778,002	1,440,435
1998	6,604,124	56,691,269	331,767
1999	6,030,138	51,051,870	204,124
2000	5,757,909	53,780,835	355,112
2001	6,196,018 r	62,021,883 r	978,118 r
January	439,361 r	5,065,262 r	57,050 r
February	403,131 r	4,173,500 r	65,645 r
March	445,482 r	4,473,198 r	68,039 r
April	397,701 r	4,285,621 r	78,863 r
May	460,342 r	4,738,970 r	88,041 r
June	424,587 r	4,583,066 r	69,262 r
July	438,391 r	5,117,131 r	71,593 r
August	435,754 r	4,689,808 r	64,811 r
September	339,584 r	3,694,119	57,504 r
October	320,381	3,467,942	51,155
November	391,446	3,788,159	77,105
December	400,152	4,164,894	83,851
2002 Total	**4,896,314**	**52,241,670**	**832,920**
January	401,340	4,401,649	80,745
February	345,963	4,586,828	73,296
March	436,176	4,900,511	90,754
April	401,534	4,771,299	87,835
May	396,875	4,623,032	57,476
June	397,257	4,403,841	79,808
July	414,079	4,783,255	91,678
August	775,836	4,212,871	115,100
September	340,245 p	3,922,417 p	130,062 p
October	364,727 p	3,869,351 e	131,322 e
November	N/A	N/A	N/A
December	N/A	N/A	N/A
2003 Total	**4,274,032 p**	**44,475,053 e**	**938,076 e**

e Estimated r Revised p Preliminary

Table 9
LOUISIANA STATE NATURAL GAS PRODUCTION
WET AFTER LEASE SEPARATION
Excluding OCS and Casinghead Gas
(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	318,621,509	1,384,120,463	332,096,939	2,034,838,911
1983	305,360,107	1,180,261,867	291,012,508	1,776,634,482
1984	326,338,092	1,248,036,005	284,926,166	1,859,300,263
1985	295,244,077	1,137,225,154	220,415,274	1,652,884,505
1986	308,388,203	1,106,084,855	212,591,069	1,627,064,127
1987	303,050,793	1,041,232,533	199,093,721	1,543,377,047
1988	322,955,920	1,058,079,256	191,498,869	1,572,534,045
1989	335,963,137	1,035,013,840	180,876,988	1,551,853,965
1990	354,696,578	1,040,239,002	160,569,034	1,555,504,613
1991	345,612,948	1,022,125,055	129,387,685	1,497,125,688
1992	343,439,890	994,039,578	123,902,708	1,461,382,176
1993	333,395,251	970,764,461	130,660,784	1,434,820,496
1994	334,564,842	925,335,735	134,106,599	1,394,007,176
1995	344,719,040	908,236,089	140,906,019	1,393,861,148
1996	392,345,447 r	933,446,378 r	166,901,010 r	1,492,692,835 r
1997	405,754,260 r	871,963,879 r	165,420,090 r	1,443,138,229 r
1998	394,713,751 r	846,071,218 r	158,947,618 r	1,399,732,587 r
1999	361,118,420 r	814,417,104 r	134,177,750 r	1,309,713,274 r
2000	357,296,980 r	837,509,435 r	135,301,030 r	1,330,107,445 r
2001	361,629,347 r	871,949,772 r	137,602,600 r	1,371,181,719 r
January	28,214,059 r	68,904,422 r	10,603,743 r	107,722,224 r
February	25,949,922 r	63,538,315 r	9,756,016 r	99,244,253 r
March	28,633,376 r	70,293,587 r	10,768,531 r	109,695,494 r
April	27,322,935 r	67,258,270 r	10,279,350 r	104,860,555 r
May	28,603,492 r	70,607,054 r	10,765,141 r	109,975,687 r
June	27,943,314 r	69,175,459 r	10,520,765 r	107,639,538 r
July	28,464,764 r	70,664,087 r	10,721,076 r	109,849,927 r
August	28,552,421 r	71,083,943 r	10,758,183 r	110,394,548 r
September	26,308,131 r	65,686,395 r	9,916,421 r	101,910,947 r
October	24,547,288 r	61,469,940 r	9,256,366 r	95,273,594 r
November	25,960,929 r	65,202,858 r	9,793,350 r	100,957,137 r
December	27,067,989 r	66,652,227 r	9,880,847 r	103,601,063 r
2002 Total	**327,568,621 r**	**810,536,555 r**	**123,019,791 r**	**1,261,124,967 r**
January	27,025,518	67,518,401	10,124,745	104,668,664
February	24,788,906	62,105,290	9,296,018	96,190,214
March	28,030,340	70,423,212	10,523,290	108,976,842
April	27,206,374	68,542,911	10,226,855	105,976,141
May	27,213,366	69,435,706	10,346,674	106,995,747
June	26,050,211	66,646,383	9,920,838	102,617,432
July	26,365,618	67,645,899	10,054,419	104,065,937
August	24,894,607	64,054,571	9,506,875	98,456,053
September	24,724,192	63,798,961	9,455,729	97,978,882
October	24,554,162	63,543,648	9,404,973	97,502,783
November	24,384,105 e	63,288,338 e	9,354,185 e	97,026,628 e
December	24,213,405 e	63,032,521 e	9,302,747 e	96,548,674 e
2003 Total	**309,450,805 e**	**790,035,843 e**	**117,517,348 e**	**1,217,003,996 e**

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Table 10

LOUISIANA STATE CASINGHEAD GAS PRODUCTION, WET AFTER LEASE SEPARATION, Excluding OCS

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	55,835,567	134,295,510	23,326,417	213,457,494
1983	54,841,710	124,281,782	26,159,080	205,282,572
1984	55,944,990	125,085,805	29,071,888	210,102,684
1985	55,759,287	112,357,808	29,648,675	197,765,770
1986	55,231,487	110,445,487	33,513,264	199,190,237
1987	53,608,927	111,178,438	29,030,143	193,817,508
1988	51,642,390	111,388,728	22,754,523	185,785,641
1989	43,226,234	95,636,544	22,432,765	161,295,543
1990	35,720,964	97,403,093	21,463,782	154,587,839
1991	36,360,803	94,750,220	20,506,337	151,617,360
1992	28,776,676	130,335,922	23,086,767	182,199,364
1993	20,416,003	134,059,073	23,177,673	177,652,749
1994	19,490,914	102,313,166	21,100,651	142,904,730
1995	18,712,027	100,070,988	23,542,867	142,325,882
1996	24,806,243 r	93,986,744 r	18,713,358 r	137,506,345 r
1997	36,266,759 r	103,835,554 r	20,423,408 r	160,525,721 r
1998	42,665,167 r	114,280,211 r	20,701,170 r	177,646,548 r
1999	33,073,036 r	96,225,193 r	15,421,052 r	144,719,281 r
2000	30,788,050 r	89,876,987 r	14,203,471 r	134,868,508 r
2001	28,864,023 r	81,962,611 r	13,247,485 r	124,074,119 r
January	2,322,806 r	5,991,819 r	1,077,965 r	9,392,590 r
February	2,019,537 r	5,211,415 r	936,335 r	8,167,287 r
March	2,216,238 r	5,721,105 r	1,026,568 r	8,963,910 r
April	2,126,520 r	5,491,549 r	984,094 r	8,602,163 r
May	2,252,915 r	5,820,150 r	1,041,629 r	9,114,695 r
June	2,151,429 r	5,560,102 r	993,811 r	8,705,341 r
July	2,096,527 r	5,420,248 r	967,545 r	8,484,320 r
August	2,113,400 r	5,465,926 r	974,422 r	8,553,748 r
September	1,832,327 r	4,740,775 r	844,042 r	7,417,144 r
October	1,617,912 r	4,187,610 r	744,581 r	6,550,103 r
November	2,049,901 r	5,307,737 r	942,507 r	8,300,146 r
December	1,997,514 r	5,313,637 r	946,100 r	8,257,252 r
2002 Total	**24,797,027 r**	**64,232,073 r**	**11,479,599 r**	**100,508,699 r**
January	2,186,145	5,191,754	831,387	8,209,286
February	2,075,505	4,930,764	788,338	7,794,607
March	2,211,282	5,255,224	838,882	8,305,388
April	2,139,559	5,086,633	810,693	8,036,885
May	2,210,296	5,256,752	836,497	8,303,545
June	2,089,378	4,971,047	789,810	7,850,235
July	2,142,129	5,098,429	808,766	8,049,324
August	2,523,367	6,008,029	951,549	9,482,946
September	2,521,236	6,005,187	949,595	9,476,019
October	2,519,103	6,002,346	947,645	9,469,094
November	2,516,971 e	5,999,507 e	945,693 e	9,462,170 e
December	2,514,841 e	5,996,663 e	943,737 e	9,455,240 e
2003 Total	**27,649,811 e**	**65,802,336 e**	**10,442,592 e**	**103,894,739 e**

e Estimated r Revised p Preliminary

Figure 4

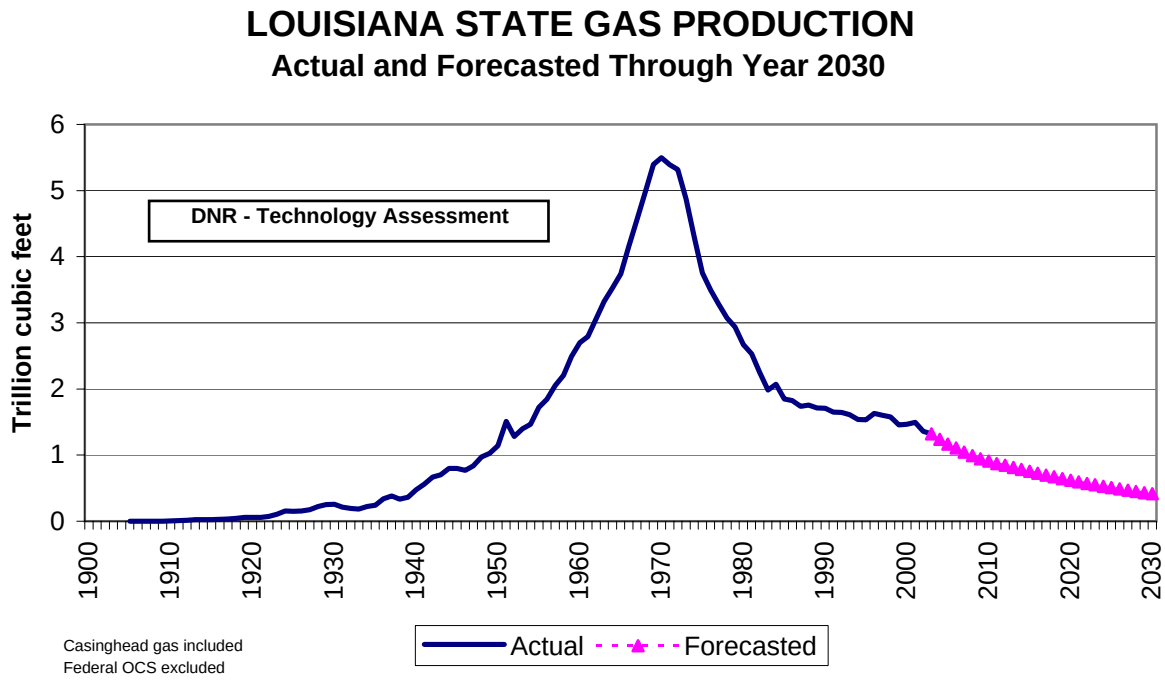

Figure 5

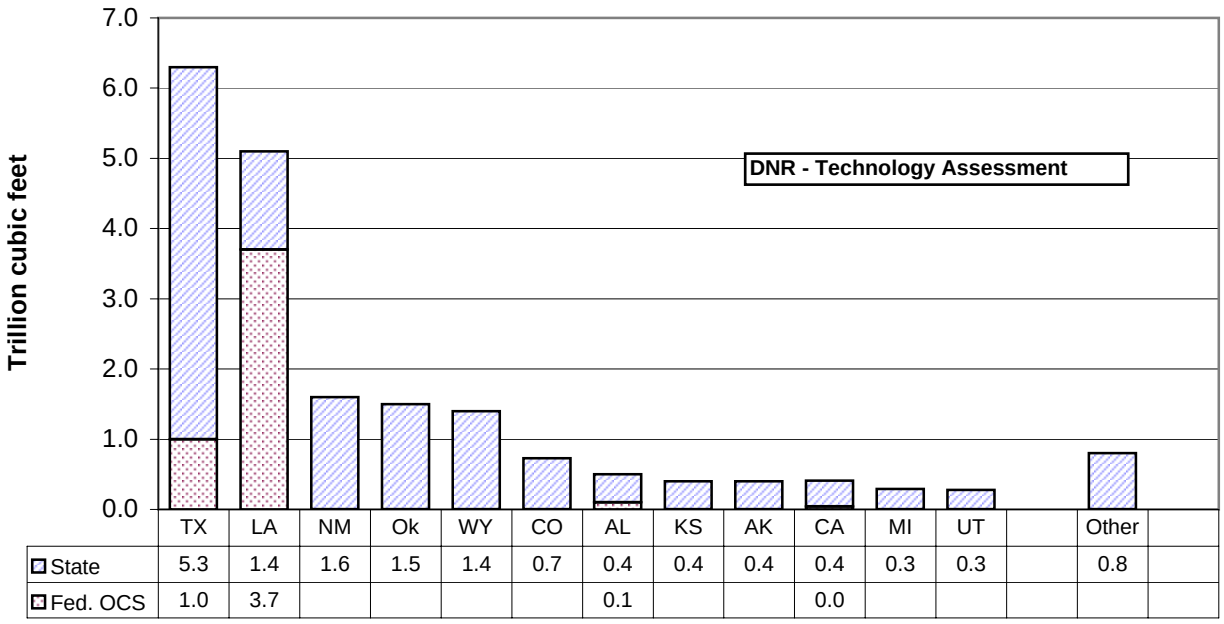

Table 11

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas, Excluding OCS

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	374,457,076	1,518,415,973	355,423,356	2,248,296,405
1983	360,201,817	1,304,543,649	317,171,588	1,981,917,054
1984	382,283,082	1,373,121,810	313,998,055	2,069,402,947
1985	351,003,364	1,249,582,962	250,063,949	1,850,650,275
1986	363,619,690	1,216,530,342	246,104,333	1,826,254,364
1987	356,659,720	1,152,410,971	228,123,864	1,737,194,555
1988	374,598,311	1,169,467,984	214,253,392	1,758,319,686
1989	379,189,370	1,130,650,385	203,309,753	1,713,149,508
1990	390,417,542	1,137,642,094	182,032,816	1,710,092,452
1991	381,973,751	1,116,875,275	149,894,021	1,648,743,048
1992	372,216,566	1,124,375,499	146,989,475	1,643,581,540
1993	353,811,255	1,104,823,534	153,838,456	1,612,473,245
1994	354,055,756	1,027,648,900	155,207,250	1,536,911,906
1995	363,431,067	1,008,307,077	164,448,886	1,536,187,030
1996	417,151,690 r	1,027,433,122 r	185,614,368 r	1,630,199,180 r
1997	442,021,019 r	975,799,433 r	185,843,498 r	1,603,663,950 r
1998	437,378,918 r	960,351,429 r	179,648,787 r	1,577,379,135 r
1999	394,191,456 r	910,642,297 r	149,598,802 r	1,454,432,555 r
2000	388,085,030 r	927,386,422 r	149,504,501 r	1,464,975,953 r
2001	390,493,370 r	953,912,382 r	150,850,085 r	1,495,255,838 r
January	30,536,866 r	74,896,240 r	11,681,708 r	117,114,814 r
February	27,969,459 r	68,749,730 r	10,692,351 r	107,411,540 r
March	30,849,614 r	76,014,691 r	11,795,099 r	118,659,404 r
April	29,449,455 r	72,749,819 r	11,263,444 r	113,462,718 r
May	30,856,407 r	76,427,205 r	11,806,771 r	119,090,382 r
June	30,094,743 r	74,735,561 r	11,514,575 r	116,344,879 r
July	30,561,292 r	76,084,334 r	11,688,621 r	118,334,247 r
August	30,665,821 r	76,549,870 r	11,732,605 r	118,948,296 r
September	28,140,458 r	70,427,170 r	10,760,464 r	109,328,091 r
October	26,165,200 r	65,657,550 r	10,000,947 r	101,823,697 r
November	28,010,830 r	70,510,595 r	10,735,858 r	109,257,283 r
December	29,065,503 r	71,965,864 r	10,826,948 r	111,858,315 r
2002 Total	**352,365,648 r**	**874,768,628 r**	**134,499,390 r**	**1,361,633,666 r**
January	29,211,663	72,710,155	10,956,132	112,877,950
February	26,864,412	67,036,054	10,084,355	103,984,821
March	30,241,622	75,678,436	11,362,172	117,282,230
April	29,345,933	73,629,544	11,037,548	114,013,026
May	29,423,662	74,692,458	11,183,171	115,299,292
June	28,139,588	71,617,431	10,710,648	110,467,667
July	28,507,747	72,744,328	10,863,186	112,115,260
August	27,417,974	70,062,600	10,458,424	107,938,999
September	27,245,428	69,804,148	10,405,324	107,454,900
October	27,073,266	69,545,994	10,352,617	106,971,877
November	26,901,076 e	69,287,845 e	10,299,877 e	106,488,798 e
December	26,728,246 e	69,029,184 e	10,246,484 e	106,003,914 e
2003 Total	**337,100,616 e**	**855,838,180 e**	**127,959,939 e**	**1,320,898,735 e**

e Estimated r Revised p Preliminary

* See Appendix D-1 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Table 12

LOUISIANA TOTAL GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

	ONSHORE	OFFSHORE		TOTAL
DATE		State	Federal OCS[12]	
1982	1,892,873,049	355,423,356	3,729,057,653	5,977,354,058
1983	1,664,745,466	317,171,588	3,111,576,348	5,093,493,402
1984	1,755,404,892	313,998,055	3,508,475,799	5,577,878,746
1985	1,600,586,326	250,063,949	3,055,687,773	4,906,338,048
1986	1,580,150,031	246,104,333	2,870,347,386	4,696,601,750
1987	1,509,070,691	228,123,864	3,117,669,167	4,854,863,722
1988	1,544,066,294	214,253,392	3,036,077,646	4,794,397,332
1989	1,509,839,755	203,309,753	2,947,545,132	4,660,694,640
1990	1,528,059,636	182,032,816	3,633,554,307	5,343,646,759
1991	1,498,849,027	149,894,021	3,225,373,562	4,874,116,610
1992	1,496,592,065	146,989,475	3,272,561,370	4,916,142,910
1993	1,458,634,789	153,838,456	3,320,312,261	4,932,785,506
1994	1,381,704,656	155,207,250	3,423,837,064	4,960,748,970
1995	1,371,738,144	164,448,886	3,564,677,663	5,100,864,693
1996	1,444,584,812 r	185,614,368 r	3,821,696,386 r	5,451,895,566 r
1997	1,417,820,452 r	185,843,498 r	3,837,040,050 r	5,440,704,000 r
1998	1,397,730,348 r	179,648,787 r	3,714,986,973 r	5,292,366,108 r
1999	1,304,833,753 r	149,598,802 r	3,944,019,905 r	5,398,452,460 r
2000	1,315,471,452 r	149,504,501 r	3,591,874,112 r	5,056,850,065 r
2001	1,344,405,753 r	150,850,085 r	3,643,999,774 p	5,139,255,612 r
January	105,433,106 r	11,681,708 r	267,316,978 p	384,431,792 p
February	96,719,189 r	10,692,351 r	238,060,276 p	345,471,816 p
March	106,864,305 r	11,795,099 r	282,708,487 p	401,367,891 p
April	102,199,274 r	11,263,444 r	277,134,065 p	390,596,783 p
May	107,283,611 r	11,806,771 r	278,740,799 p	397,831,181 p
June	104,830,304 r	11,514,575 r	296,041,726 p	412,386,605 p
July	106,645,626 r	11,688,621 r	301,523,715 p	419,857,962 p
August	107,215,691 r	11,732,605 r	315,588,815 p	434,537,111 p
September	98,567,627 r	10,760,464 r	247,937,066 p	357,265,157 p
October	91,822,750 r	10,000,947 r	242,449,760 p	344,273,457 p
November	98,521,425 r	10,735,858 r	306,783,363 p	416,040,646 p
December	101,031,367 r	10,826,948 r	293,568,080 p	405,426,395 p
2002 Total	**1,227,134,276 r**	**134,499,390 r**	**3,347,853,129 p**	**4,709,486,795 p**
January	101,921,818	10,956,132	284,306,156 e	397,184,106 e
February	93,900,466	10,084,355	246,071,880 e	350,056,701 e
March	105,920,058	11,362,172	283,676,570 e	400,958,800 e
April	102,975,478	11,037,548	276,679,139 e	390,692,165 e
May	104,116,121	11,183,171	282,378,738 e	397,678,030 e
June	99,757,019	10,710,648	267,387,976 e	377,855,643 e
July	101,252,075	10,863,186	N/A	112,115,260
August	97,480,574	10,458,424	N/A	107,938,999
September	97,049,576	10,405,324	N/A	107,454,900
October	96,619,260	10,352,617	N/A	106,971,877
November	96,188,921 e	10,299,877 e	N/A	106,488,798 e
December	95,757,430 e	10,246,484 e	N/A	106,003,914 e
2003 Total	**1,192,938,796 e**	**127,959,939 e**	**1,640,500,460**	**2,961,399,195 e**

e Estimated r Revised p Preliminary

* See Appendix D-2 for corresponding volumes at 14.73 psia and footnote in Appendix B.

NOTE: The 2003 Federal OCS production is estimated from the marketed production

Table 13

LOUISIANA MARKETED AND DRY GAS PRODUCTION

(Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	MARKETED			EXTRACTION LOSS[3]	DRY[3]
	State	OCS	Total[3]		
1960	2,642 e	265 [12]	2,907 e	N/A	N/A
1961	2,731 e	309 [12]	3,039 e	N/A	N/A
1962	2,995 e	439 [12]	3,434 e	N/A	N/A
1963	3,252 e	548 [12]	3,800 e	N/A	N/A
1964	3,451 e	603 [12]	4,054 e	N/A	N/A
1965	3,658 e	627 [12]	4,285 e	N/A	N/A
1966	4,063 e	937 [12]	5,000 e	N/A	N/A
1967	4,549	1,055 [12]	5,605	113	5,492
1968	4,918	1,372 [12]	6,290	138	6,153
1969	5,317	1,769 [12]	7,086	176	6,910
1970	5,429	2,206 [12]	7,635	189	7,446
1971	5,367	2,556 [12]	7,923	191	7,732
1972	5,020	2,797 [12]	7,816	194	7,622
1973	5,115	2,966 [12]	8,081	203	7,878
1974	4,351	3,251 [12]	7,601	191	7,411
1975	3,717	3,234 [12]	6,951	186	6,766
1976	3,472	3,397 [12]	6,869	169	6,700
1977	3,533	3,540 [12]	7,073	163	6,910
1978	3,302	4,028 [12]	7,330	158	7,171
1979	3,087	4,036 [12]	7,124	162	6,961
1980	2,908	3,896 [12]	6,804	139	6,664
1981	2,661	3,986 [12]	6,647	140	6,507
1982	2,359	3,692 [12]	6,050	126	5,924
1983	2,147	3,080 [12]	5,227	122	5,106
1984	2,237	3,473 [12]	5,711	130	5,581
1985	1,890	3,025 [12]	4,915	115	4,800
1986	1,958	2,842 [12]	4,799	113	4,686
1987	1,935	3,086 [12]	5,022	122	4,899
1988	2,073	3,006 [12]	5,079	118	4,961
1989	2,060	2,918 [12]	4,978	119	4,859
1990	1,542	3,597 [12]	5,139	117	5,022
1991	1,742	3,193 [12]	4,936	127	4,809
1992	1,617	3,201 [3]	4,818	130	4,688
1993	1,642	3,252 [3]	4,893	128	4,765
1994	1,658	3,410 [3]	5,068	126	4,942
1995	1,650	3,358 [3]	5,008	143	4,865
1996	1,596	3,590 [3]	5,186	137	5,049
1997	1,475 [3]	3,652 [3]	5,127	147	4,980
1998	1,522 [3]	3,652 [3]	5,174	142	5,032
1999	1,536 [3]	3,636 [3]	5,172	162	5,011
2000	1,426 [3]	3,567 [3]	4,993	162	4,831
2001	1,473 [3]	3,673 [3]	5,146	150	4,996
2002	1,508 p	3,736 p	5,244 p	172 p	5,072 p

e Estimated r Revised p Preliminary

* See Appendix D-3 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Figure 6

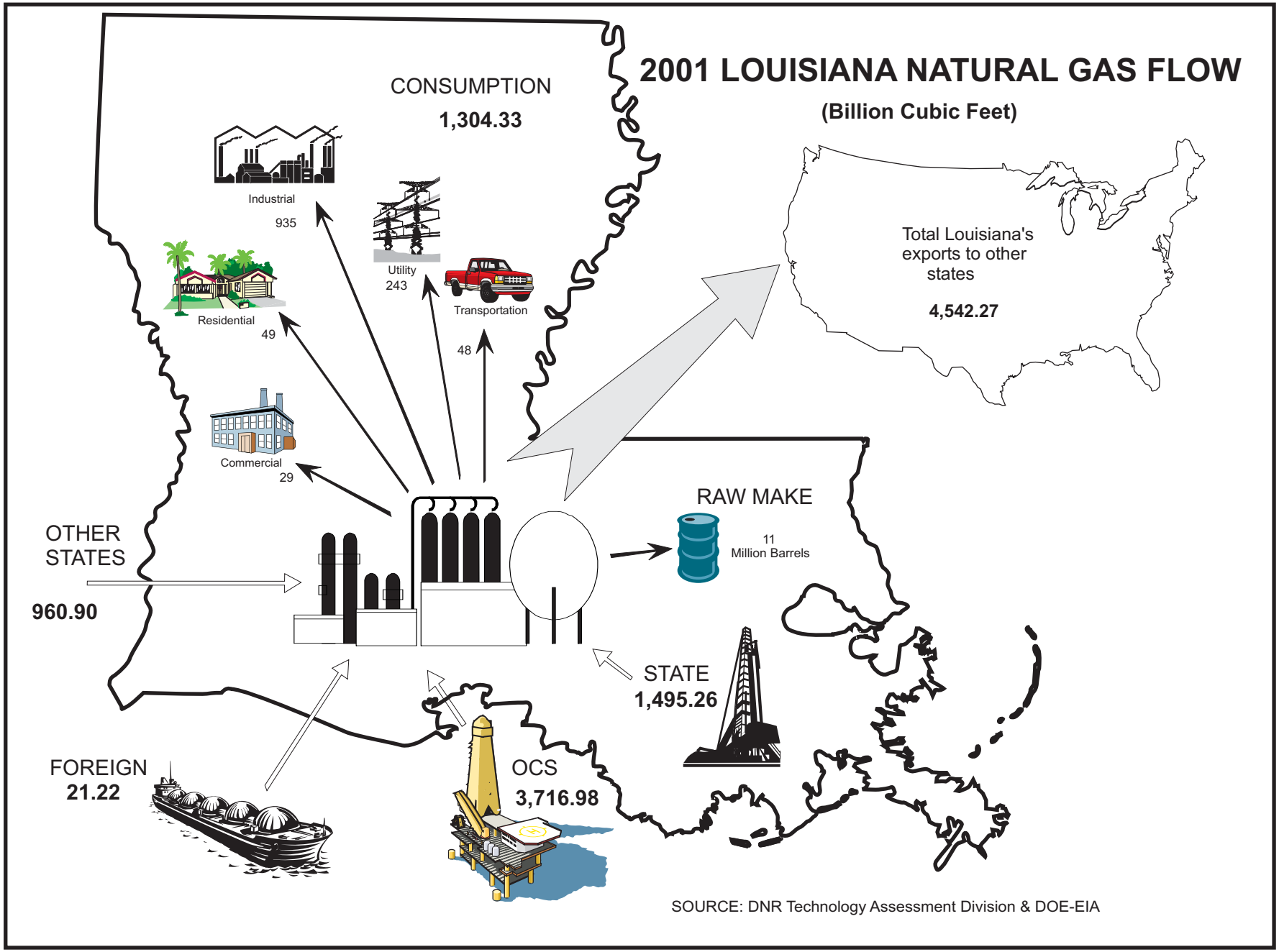
2001 LOUISIANA NATURAL GAS FLOW
(Billion Cubic Feet)
CONSUMPTION
1,304.33
Industrial
935
Utility
243
Transportation
48
Residential
49
Commercial
29
Total Louisiana's exports to other states
4,542.27
RAW MAKE
11
Million Barrels
OTHER STATES
960.90
STATE
1,495.26
OCS
3,716.98
FOREIGN
21.22
SOURCE: DNR Technology Assessment Division & DOE-EIA

Table 14

LOUISIANA STATE GAS PRODUCTION BY TAX RATES

AS PUBLISHED IN SEVERANCE TAX REPORTS[8]

(MCF at 15.025psia and 60 degrees Fahrenheit)

DATE	FULL RATE	INCAPABLE GAS WELLS RATE	OTHER RATES	TAXED VOLUME
1982	2,040,417,849	67,415,215	23,885,266	2,131,718,329
1983	1,830,549,223	66,037,859	20,750,463	1,917,337,545
1984	1,849,689,870	61,394,328	22,460,870	1,933,548,068
1985	1,710,600,175	56,471,054	22,020,986	1,789,092,195
1986	1,748,310,878	56,729,077	22,829,692	1,827,869,647
1987	1,577,841,418	56,316,278	20,374,445	1,654,532,141
1988	1,487,438,834	54,709,819	22,370,768	1,564,519,421
1989	1,529,057,929	54,419,642	31,800,386	1,615,277,957
1990	1,525,451,737	53,547,797	19,438,902	1,598,438,436
1991	1,492,986,396	52,500,178	35,820,609	1,581,307,183
1992	1,499,489,622	55,146,661	25,466,874	1,580,103,157
1993	1,463,723,027	46,017,071	13,839,450	1,523,579,548
1994	1,410,035,722	52,417,334	13,688,870	1,476,141,926
1995	1,334,980,887	53,491,942	13,759,192	1,402,232,021
1996	1,354,105,430	52,368,159	11,191,715	1,417,665,304
1997	1,343,182,922	57,663,413	9,951,387	1,410,797,722
1998	1,191,471,607	60,242,544	11,733,098	1,263,447,249
1999	1,151,493,116	57,308,865	10,617,631	1,219,419,612
2000	1,217,171,149	53,797,867	8,198,104	1,279,167,120
2001	1,264,513,132	74,687,708	7,806,688	1,347,007,528
January	109,588,576	6,238,759	663,286	116,490,621
February	100,942,846	6,804,663	699,066	108,446,575
March	101,921,672	6,682,823	773,765	109,378,260
April	N/A	N/A	N/A	N/A
May	109,158,853	13,428,046	774,974	123,361,873
June	93,305,260	7,133,266	617,521	101,056,047
July	101,226,575	6,243,574	514,017	107,984,166
August	87,141,331	7,047,791	987,564	95,176,686
September	101,904,240	3,208,189	842,869	105,955,298
October	90,351,957	6,326,937	647,718	97,326,612
November	95,980,562	6,440,651	580,465	103,001,678
December	76,990,767	6,169,375	647,013	83,807,155
2002 Total	**1,068,512,639**	**75,724,074**	**7,748,258**	**1,151,984,971**
January	86,855,195	7,235,387	806,219	94,896,801
February	82,498,023	6,190,906	818,256	89,507,185
March	85,174,857	3,296,866	462,285	88,934,008
April	89,497,012	6,225,810	763,931	96,486,753
May	92,091,456	6,540,083	399,060	99,030,599
June	99,628,689	6,798,894	604,974	107,032,557
July	95,655,981	7,415,330	845,475	103,916,786
August	92,409,588	7,772,319	545,952	100,727,859
September	91,382,610	7,015,917	636,077	99,034,604
October	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A
2003 Total	**815,193,411**	**58,491,512**	**5,882,229**	**879,567,152**

e Estimated r Revised p Preliminary

See footnote in Appendix B.

Table 15

UNITED STATES OCS GAS PRODUCTION[12]

Natural Gas and Casinghead Gas
(MCF at 15.025 psia and 60 degrees Fahrenheit)*

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
PRIOR	154,393,126	0	0	154,393,126
1956	81,265,031	0	0	81,265,031
1957	80,947,656	4,703	0	80,952,359
1958	125,185,735	0	0	125,185,735
1959	203,089,002	0	0	203,089,002
1960	267,673,709	0	0	267,673,709
1961	312,031,003	0	0	312,031,003
1962	443,079,048	0	0	443,079,048
1963	553,272,142	0	0	553,272,142
1964	609,524,401	0	0	609,524,401
1965	632,914,005	0	0	632,914,005
1966	946,433,484	41,233,595	0	987,667,078
1967	1,065,915,553	97,990,476	0	1,163,906,029
1968	1,385,715,670	107,752,805	783,984	1,494,252,460
1969	1,786,760,423	124,601,568	4,750,708	1,916,112,699
1970	2,228,516,212	130,683,192	11,989,041	2,371,188,444
1971	2,582,297,962	124,857,371	15,363,786	2,722,519,119
1972	2,824,792,196	144,267,198	9,836,582	2,978,895,976
1973	2,995,634,220	145,754,588	7,143,485	3,148,532,293
1974	3,283,413,450	156,838,375	5,464,209	3,445,716,035
1975	3,266,745,456	120,166,178	3,874,047	3,390,785,681
1976	3,431,149,749	90,764,667	3,406,969	3,525,321,386
1977	3,575,898,616	85,236,246	3,225,368	3,664,360,230
1978	4,068,255,571	227,305,175	3,404,117	4,298,964,864
1979	4,076,873,552	501,546,069	2,810,535	4,581,230,155
1980	3,934,902,550	612,378,333	3,046,020	4,550,326,904
1981	4,025,867,929	715,937,640	12,515,654	4,754,321,224
1982	3,729,057,653	841,173,981	17,402,403	4,587,634,037
1983	3,111,576,348	834,112,318	15,709,672	3,961,398,338
1984	3,508,475,799	913,008,621	27,260,940	4,448,745,360
1985	3,055,687,773	818,533,627	48,198,926	3,922,420,326
1986	2,870,347,386	959,161,285	41,850,867	3,871,359,539
1987	3,117,669,167	1,180,839,487	40,181,438	4,338,690,093
1988	3,036,077,646	1,155,285,485	33,891,880	4,225,255,011
1989	2,947,545,132	1,142,237,197	28,013,874	4,117,796,204
1990	3,633,554,307	1,321,607,333	37,775,234	4,992,936,873
1991	3,225,373,562	1,161,671,524	39,828,917	4,426,874,003
1992	3,272,561,370	1,215,055,449	40,071,149	4,593,647,066
1993	3,320,312,261	1,007,755,289	41,255,853	4,444,381,437
1994	3,423,837,064	994,291,314	40,860,740	4,565,582,229
1995	3,564,677,663	890,682,224	35,710,325	4,600,143,070
1996	3,821,696,407	953,772,416	37,080,328	4,925,771,640
1997	3,837,040,050	946,381,458	39,922,549	4,977,314,878
1998	3,714,986,973	850,572,237	25,912,242	4,740,449,969
1999	3,908,741,837	798,140,396	36,529,861	4,894,344,157
2000	3,589,466,891	848,553,880	35,991,391	4,581,371,190
2001	3,881,696,656 p	590,118,630 p	40,456,343 p	4,619,510,899 p
2002	N/A	N/A	N/A	4,346,774,226 p

e Estimated r Revised p Preliminary

* See Appendix D-4 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Figure 7

LOUISIANA OIL PRODUCTION AND PRICE

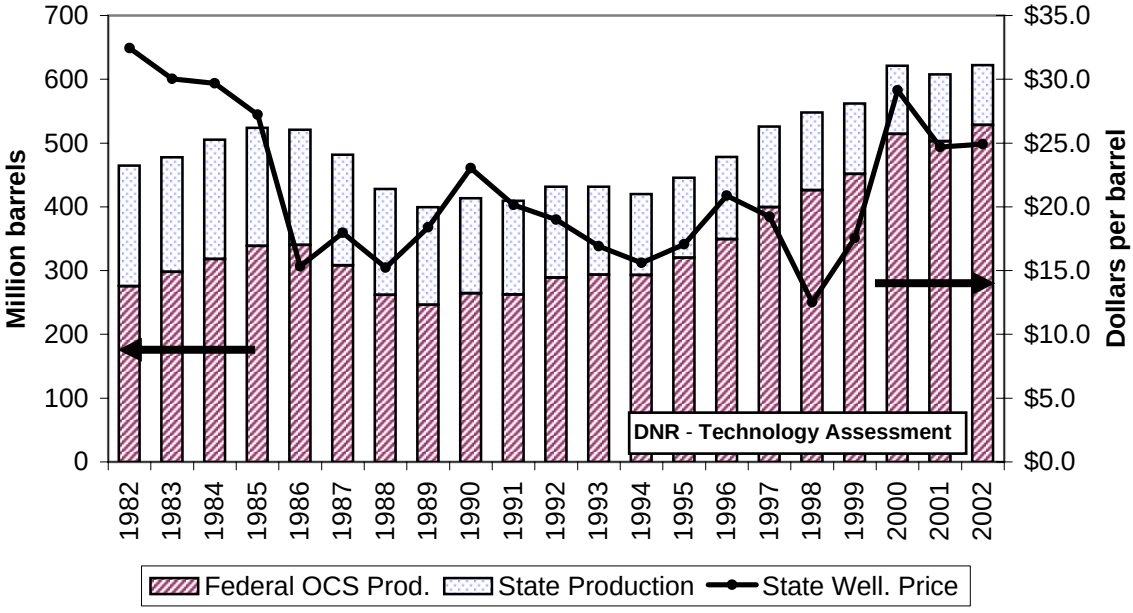

Figure 8

LOUISIANA GAS PRODUCTION AND PRICE

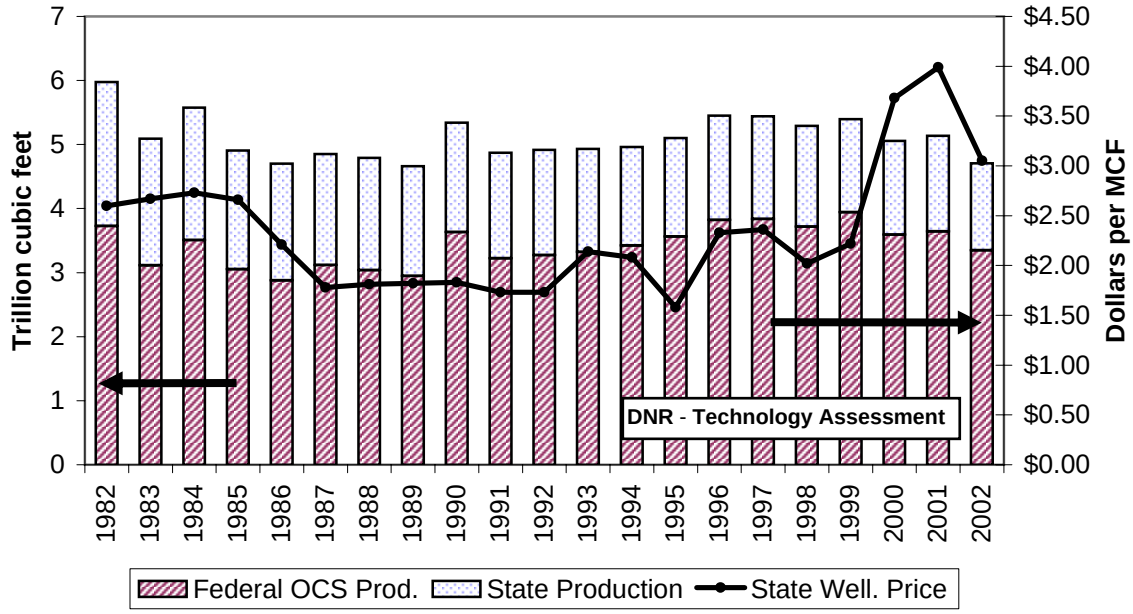

Table 16

UNITED STATES NATURAL GAS AND CASINGHEAD GAS PRODUCTION[3]

(Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	GROSS	WET AFTER LEASE SEPARATION	MARKETED	DRY	GROSS IMPORTS
1982	19,874	18,309	18,217	17,470	915
1983	18,293	16,646	16,553	15,778	900
1984	19,869	18,051	17,945	17,124	827
1985	19,222	17,024	16,931	16,131	931
1986	18,755	16,623	16,528	15,744	736
1987	19,745	17,212	17,091	16,294	973
1988	20,587	17,706	17,567	16,767	1,268
1989	20,661	17,879	17,740	16,971	1,354
1990	21,100	18,376	18,229	17,460	1,502
1991	21,322	18,336	18,169	17,351	1,738
1992	21,698	18,509	18,344	17,490	2,096
1993	22,279	18,832	18,609	17,740	2,304
1994	23,118	19,547	19,323	18,451	2,572
1995	23,277	19,402	19,123	18,233	2,785
1996	23,640	19,690	19,423	18,484	2,880
1997	23,737	19,727	19,475	18,531	2,935
1998	23,635	19,670	19,569	18,650	3,090
1999	23,355	19,524	19,416	18,462	3,515
2000	23,699 r	19,890 r	19,801 r	18,805 r	3,707 r
2001	23,995 r	20,309 r	20,225 r	19,290 r	3,899 r
January	2,025 r	1,672 r	1,665 r	1,588 r	336 r
February	1,821 r	1,493 r	1,487 r	1,418 r	299 r
March	2,037 r	1,677 r	1,670 r	1,593 r	325 r
April	1,946 r	1,608 r	1,602 r	1,528 r	311 r
May	2,023 r	1,680 r	1,673 r	1,596 r	310 r
June	1,963 r	1,637 r	1,630 r	1,555 r	311 r
July	2,000 r	1,694 r	1,687 r	1,609 r	337 r
August	1,999 r	1,676 r	1,669 r	1,592 r	348 r
September	1,864	1,562	1,555	1,483	328
October	1,946	1,604	1,597	1,523	336
November	1,970	1,659	1,652	1,576	324
December	2,063	1,697	1,690	1,612	362
2002 Total	**23,656**	**19,659**	**19,577**	**18,673**	**3,929**
January	2,062	1,711	1,704	1,625	338
February	1,884	1,551	1,545	1,474	291
March	2,089	1,739	1,732	1,652	306
April	1,981	1,652	1,646	1,570	289
May	2,025	1,701	1,694	1,616	299
June	1,958	1,637	1,631	1,556	278
July	1,992	1,667	1,661	1,584	338
August	N/A	N/A	N/A	N/A	330
September	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2003 Total	**13,992**	**11,659**	**11,613**	**11,077**	**2,469**

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* See Appendix D-5 for corresponding volumes at 14.73 psia and footnote in Appendix B.

TABLE 17

LOUISIANA AVERAGE CRUDE OIL PRICES

(Dollars per Barrel)

	SOUTH LOUISIANA SWEET		ALL GRADES AT WELLHEAD			
	Spot	Refinery		OCS	Severance	State
DATE	Market[10]	Posted	State[6]	Gulf[6]	Tax[8]	Royalty
1982	N/A	32.91	32.44	32.61	33.55	32.33
1983	30.63	30.63	30.02	29.77	30.38	28.64
1984	29.64	30.04	29.67	29.36	29.98	29.44
1985	28.42	27.86	27.22	27.33	27.18	27.40
1986	14.72	15.71	15.32	15.27	17.23	15.78
1987	19.38	18.52	17.97	17.54	17.55	17.85
1988	16.13	15.75	15.22	14.71	16.38	14.67
1989	19.75	18.97	18.39	17.83	17.87	17.92
1990	25.11	23.35	23.04	22.40	22.54	22.76
1991	21.70	20.60	20.15	19.40	21.13	19.90
1992	20.77	19.72	19.01	18.38	19.31	19.10
1993	18.56	17.27	16.72	16.17	17.39	16.84
1994	17.25	15.84	15.61	14.72	15.46	15.52
1995	18.60	17.16	17.06	16.16	16.98	17.06
1996	22.32	20.77	20.87	20.00	20.56	21.24
1997	20.69	18.90	19.23	18.63	19.80	19.22
1998	14.21	12.17	12.52	12.03	13.47	12.31
1999	19.00	16.73	17.55	16.46	16.09	17.22
2000	30.29	27.89	29.14	27.57	28.10	28.70
2001	25.84	23.35	24.70	23.36	26.23	23.14 r
January	20.10	17.01	18.63	17.07	18.12	17.06 r
February	21.06	18.10	19.40	17.95	17.59	17.78 r
March	24.76	21.83	22.93	19.44	19.11	20.28 r
April	26.65	23.47	24.54	22.20	20.19	24.00 r
May	26.57	23.92	25.72	24.74	23.76	24.99 r
June	25.65	22.71	24.74	24.19	27.87	22.57 r
July	26.97	24.22	25.82	24.45	23.90	23.80 r
August	27.95	25.32	26.80	25.97	33.06	25.02 r
September	29.19	26.60	28.29	26.65	24.11	27.92 r
October	29.02	26.00	27.70	26.67	37.15	25.13
November	26.25	23.53	25.69	25.54	26.89	23.83
December	30.04	26.71	28.81	25.47	25.31	27.69
2002 Average	**26.18**	**23.29**	**24.92**	**23.36**	**24.76**	**23.34**
January	33.57	29.79	31.48	28.32	30.24	33.59
February	35.81	32.71	35.41	32.46	32.77	37.21
March	33.46	30.19	32.49	31.72	33.28	32.50
April	27.92	25.11	29.43	28.00	33.82	28.89
May	28.23	18.14	27.84	26.28	29.98	28.43
June	30.26	20.05	29.54	27.45	27.20	28.78
July	30.44	19.96	30.32	28.45	28.45	28.18
August	31.57	20.65	30.60	29.00	30.24	15.43
September	28.55	18.56	27.49	26.80	30.25	30.22
October	30.88	20.19	29.41	27.42	N/A	29.16
November	31.13	20.92	N/A	N/A	N/A	30.56
December	32.59	21.38	N/A	N/A	N/A	32.00
2003 Average	**31.20**	**23.14**	**30.40**	**28.59**	**30.69**	**29.58**

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See footnote in Appendix B.

Figure 9

CRUDE OIL AVERAGE PRICES

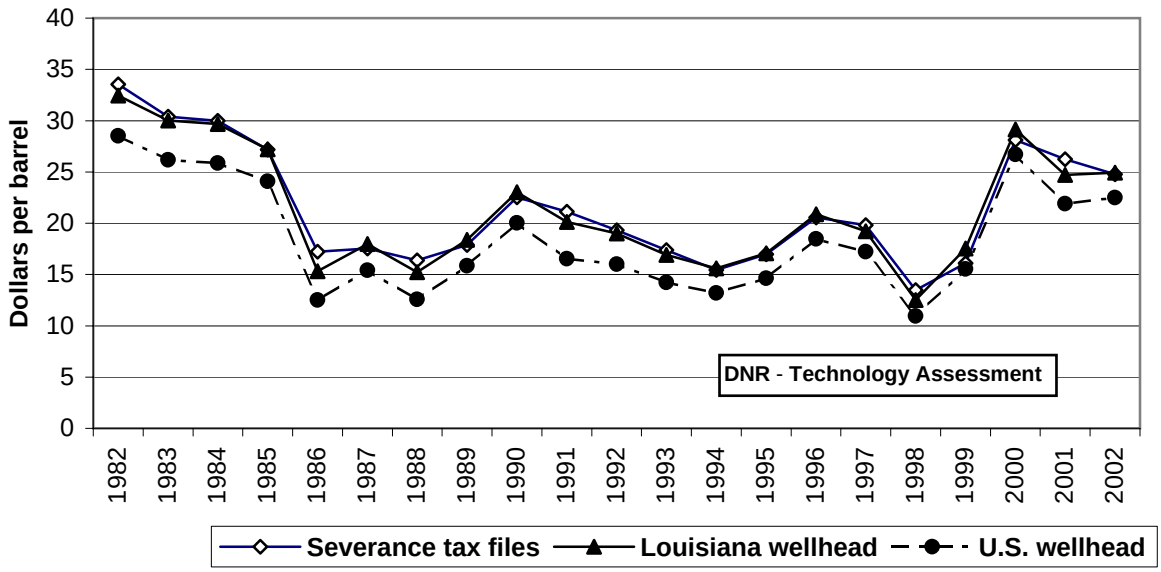

Figure 10

NATURAL GAS AVERAGE PRICES

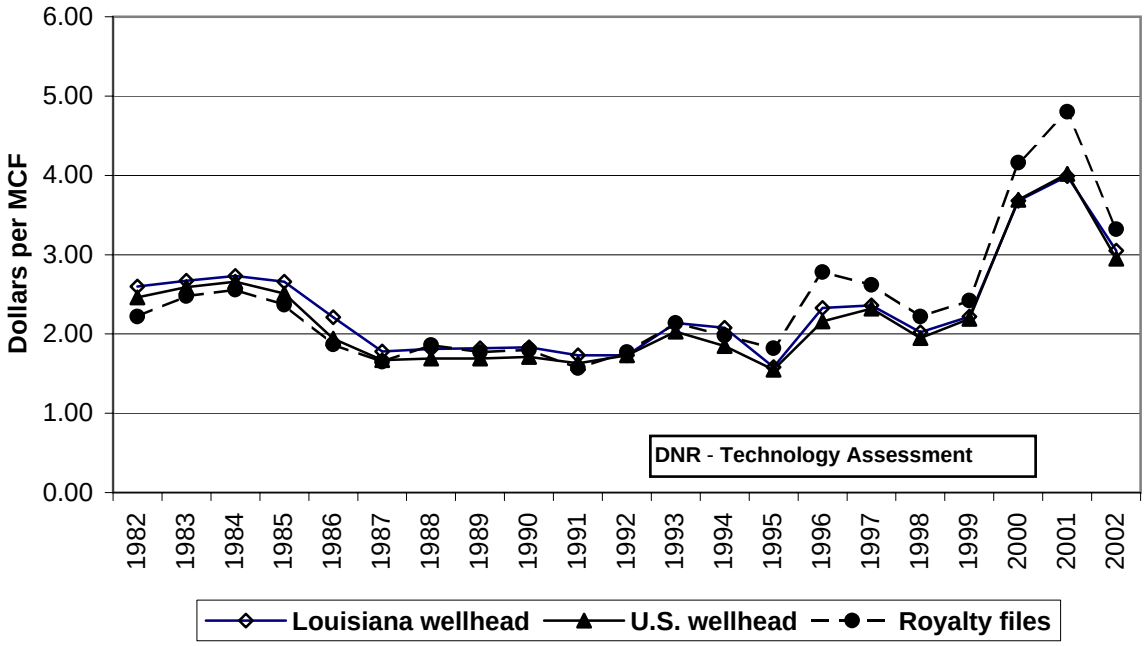

TABLE 18

UNITED STATES AVERAGE CRUDE OIL PRICES [2]

(Dollars per Barrel)

DATE	REFINERY ACQUISITION		DOMESTIC WELLHEAD	IMPORTS LANDED	IMPORTS FOB	IMPORTS OPEC FOB
	Domestic Costs	Imports Costs				
1982	31.32	33.55	28.52	33.18	32.02	33.48
1983	28.87	29.30	26.19	28.93	27.81	28.46
1984	28.53	28.88	25.88	28.54	27.60	27.79
1985	26.66	26.99	24.09	26.67	25.84	25.67
1986	14.82	14.00	12.51	13.49	12.52	12.21
1987	17.76	18.13	15.40	17.65	16.69	16.43
1988	14.74	14.56	12.58	14.08	13.25	13.43
1989	17.87	18.08	15.86	17.68	16.89	17.06
1990	22.59	21.76	20.03	21.13	20.37	20.40
1991	19.35	18.74	16.53	18.02	16.91	17.01
1992	18.62	18.12	16.00	17.65	16.66	16.76
1993	16.66	16.17	14.24	15.75	14.72	14.72
1994	15.64	15.41	13.19	15.07	14.13	13.94
1995	17.32	17.15	14.62	16.77	15.69	15.35
1996	20.81	20.60	18.46	20.27	19.24	18.87
1997	19.65	18.55	17.23	18.14	16.98	16.33
1998	13.15	12.35	10.94	11.86	10.75	10.17
1999	17.64	17.27	15.53	17.38	16.48	16.01
2000	29.08	27.68	26.72	27.54	26.26	25.55
2001	24.35	21.99	21.91	21.79	20.48	19.56
January	17.84	17.04	15.89	17.28	16.01	15.79
February	18.70	18.24	16.93	19.17	17.67	17.61
March	21.61	22.29	20.28	22.24	21.60	21.49
April	24.26	23.98	22.52	24.15	23.04	22.48
May	25.78	24.44	23.51	24.49	23.16	22.26
June	24.81	23.45	22.59	23.95	22.63	22.26
July	25.37	24.99	23.51	25.01	23.72	23.46
August	26.87	25.68	24.76	25.93	24.57	24.12
September	28.40	27.14	26.08	26.78	25.80	25.09
October	27.82	25.99	25.29	25.58	24.32	22.88
November	26.02	23.68	23.38	24.22	22.42	22.36
December	27.25	26.68	25.29	27.08	25.86	26.53
2002 Average	**24.56**	**23.63**	**22.50**	**23.82**	**22.57**	**22.19**
January	30.47	30.32	28.35	30.34	29.16	29.08
February	33.98	32.42	31.85	31.33	29.78	28.65
March	32.68	29.31	30.09	28.86	26.32	25.39
April	28.54	24.52	25.46	25.21	22.75	21.84
May	26.75	25.15	24.96	25.31	23.49	22.80
June	29.07	27.22	26.83	27.36	25.35	24.90
July	29.54	27.95	27.53	27.73	26.11	25.63
August	30.28	28.50	27.94	28.01	26.87	26.33
September	27.75	25.66	25.23	25.87	24.07	23.72
October	28.43	27.32	26.53	27.08	25.81	25.27
November	29.34	28.13	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A	N/A
2003 Average	**29.71**	**27.86**	**27.48**	**27.71**	**25.97**	**25.36**

e Estimated r Revised p Preliminary

See footnote in Appendix B.

Table 19

LOUISIANA NATURAL GAS WELLHEAD PRICES

(Dollars/Thousand Cubic Feet)

DATE	MMS OCS[12]	DOE State Wells[3]	DNR State Royalty	Henry Hub Settled NYMEX	SPOT MARKET[5] Low	SPOT MARKET[5] High	SPOT MARKET[5] Average
1982	2.65	2.60	2.21	N/A	N/A	N/A	N/A
1983	2.72	2.67	2.48	N/A	N/A	N/A	N/A
1984	2.70	2.73	2.56	N/A	N/A	N/A	N/A
1985	2.72	2.66	2.37	N/A	2.13	3.07	2.61
1986	2.26	2.21	1.87	N/A	1.46	2.34	1.76
1987	1.82	1.78	1.65	N/A	1.40	1.82	1.55
1988	1.84	1.81	1.86	N/A	1.40	2.29	1.79
1989	1.86	1.82	1.77	N/A	1.40	2.29	1.76
1990	1.87	1.83	1.80	N/A	1.35	2.60	1.77
1991	1.77	1.73	1.57	N/A	1.43	1.56	1.50
1992	1.77	1.73	1.77	N/A	1.74	1.85	1.80
1993	2.18	2.14	2.14	2.19	2.08	2.21	2.15
1994	2.10	2.08	1.98	1.97	1.86	1.95	1.91
1995	1.61	1.58	1.82	1.70	1.62	1.68	1.65
1996	2.37	2.33	2.78	2.69	2.47	2.69	2.60
1997	2.63	2.36	2.62	2.69	2.54	2.67	2.60
1998	2.36	2.02	2.22	2.19	2.08	2.18	2.14
1999	2.18	2.22	2.42	2.36	2.25	2.36	2.31
2000	3.59	3.68	4.16	4.04	3.92	4.03	3.98
2001	4.05 r	3.99 r	4.80 r	4.44	4.27	4.47	4.38
January	N/A	N/A	2.48	2.66	2.60	2.70	2.66
February	N/A	N/A	2.24	2.09	1.98	2.13	2.06
March	N/A	N/A	2.70	2.49	2.39	2.50	2.46
April	N/A	N/A	3.57	3.61	3.38	3.59	3.48
May	N/A	N/A	3.37	3.40	3.33	3.54	3.44
June	N/A	N/A	3.39	3.56	3.38	3.54	3.48
July	N/A	N/A	3.19	3.59	3.28	3.38	3.34
August	N/A	N/A	3.00	3.06	2.91	3.07	3.03
September	N/A	N/A	3.46	3.76	3.28	3.33	3.31
October	N/A	N/A	3.84	3.83	4.05	4.27	4.19
November	N/A	N/A	4.21	4.29	4.21	4.33	4.25
December	N/A	N/A	4.38	4.31	4.67	4.85	4.77
2002 Average	**2.98**	**3.05**	**3.32**	**3.39**	**3.29**	**3.43**	**3.37**
January	N/A	N/A	5.30	5.19	5.36	5.65	5.54
February	N/A	N/A	6.08	5.89	6.16	7.91	7.16
March	N/A	N/A	7.96	9.50	6.85	8.64	7.65
April	N/A	N/A	5.25	5.35	5.27	5.49	5.40
May	N/A	N/A	5.61	5.33	4.82	6.27	5.97
June	N/A	N/A	6.53	6.18	5.86	6.07	5.96
July	N/A	N/A	6.29	5.50	5.11	5.35	5.22
August	N/A	N/A	4.94	4.88	5.08	5.21	5.15
September	N/A	N/A	4.97	5.12	4.69	4.93	4.78
October	N/A	N/A	4.40	4.72	4.74	4.84	4.80
November	N/A	N/A	4.81	4.64	4.54	4.66	4.62
December	N/A	N/A	4.91	5.05	5.36	5.97	5.63
2003 Average	**N/A**	**N/A**	**5.59**	**5.61**	**5.32**	**5.92**	**5.66**

e Estimated r Revised p Preliminary

See footnote in Appendix B.

Table 20

LOUISIANA AVERAGE NATURAL GAS PRICES DELIVERED TO CONSUMER[3]

(Dollars/Thousand Cubic Feet)

DATE	CITY GATES	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	UTILITY
1982	3.38 e	5.32	4.93	3.16	3.23
1983	3.59 e	6.12	5.71	3.13	3.30
1984	3.78	5.96	5.54	3.18	3.18
1985	3.55	5.67	5.28	3.03	2.86
1986	2.95	5.77	5.25	1.91	1.94
1987	2.38	5.56	4.97	1.80	1.67
1988	2.93	5.74	5.14	1.99	1.70
1989	3.01	5.97	5.19	1.97	1.78
1990	2.97	6.09	5.26	2.00	1.73
1991	2.56	6.24	4.91	1.74	1.63
1992	2.48	6.19	4.85	2.00	1.93
1993	2.75	6.68	5.41	2.31	2.49
1994	2.52	6.78	5.39	2.18	2.24
1995	2.17	6.59	5.15	1.82	1.92
1996	3.03	7.55	6.18	2.83	3.07
1997	2.94	7.60	6.12	2.87	2.88
1998	2.32	7.51	5.72	2.43	2.40
1999	2.73	7.55	5.83	2.51	2.55
2000	4.50	9.20	7.52	4.01	4.56
2001	5.11 r	9.99 r	7.85 r	5.21 r	4.56 r
January	3.91	6.89 r	6.71 r	3.77 r	2.76 r
February	3.22	6.94	6.13 r	3.26 r	2.49 r
March	3.23	6.87	6.57	3.62 r	3.18 r
April	3.80	7.96	6.72	3.69 r	3.77 r
May	4.07	9.30	6.54	3.80 r	3.84 r
June	4.10	8.12	6.10	3.78	3.66
July	3.82	8.83	6.70	3.78 r	3.54
August	3.59	8.89	6.44	3.41	3.36
September	4.37	N/A	6.81	4.34	3.92
October	4.46	10.91	7.47	4.18	4.49
November	N/A	10.55	7.99	4.57	4.59
December	5.12	8.59	7.92	4.60	4.87
2002 Average	**3.97 r**	**8.53 r**	**6.84 r**	**3.90 r**	**3.71 r**
January	5.51	8.38	8.03	5.14	5.90
February	N/A	N/A	N/A	5.64	7.53
March	N/A	N/A	N/A	8.02	9.04
April	4.49	10.27	8.22	5.34	5.90
May	5.68	12.09	8.68	5.35	6.07
June	6.25	13.89	9.19	6.09	6.55
July	5.69	13.13	8.92	5.55	5.85
August	5.11	N/A	8.52	4.89	N/A
September	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2003 Average	**5.46 e**	**11.55 e**	**8.59 e**	**5.75 e**	**6.69 e**

e Estimated r Revised p Preliminary

See footnote in Appendix B.

Table 21

UNITED STATES AVERAGE NATURAL GAS PRICES

(Dollars/Thousand Cubic Feet)

DATE	WELLHEAD[3]	SPOT MARKET[5]	FOREIGN IMPORTS[3]	CITY GATES[3]	DELIVERED TO RESIDENTIAL[3]
1982	2.46	N/A	4.94	3.60	5.17
1983	2.59	N/A	4.51	4.04	6.06
1984	2.66	N/A	4.08	3.89	6.12
1985	2.51	2.49	3.19	3.75	6.12
1986	1.94	1.68	2.53	3.22	5.83
1987	1.67	1.48	2.17	2.87	5.54
1988	1.69	1.69	2.00	2.92	5.47
1989	1.69	1.64	2.04	3.01	5.64
1990	1.71	1.67	1.94	3.03	5.80
1991	1.63	1.45	1.82	2.90	6.22
1992	1.73	1.75	1.85	3.01	6.28
1993	2.03	2.10	2.03	3.21	6.67
1994	1.85	1.84	1.87	3.07	6.89
1995	1.55	1.56	1.49	2.78	6.58
1996	2.16	2.39	1.96	3.27	6.97
1997	2.32	2.54	2.15	3.66	6.94
1998	1.95	2.11	1.97	3.07	7.45
1999	2.19	2.28	2.23	3.10	7.34
2000	3.69	3.94	3.88	4.62	8.51
2001	4.02	4.34	4.36	5.24	9.91
January	2.35	2.63	2.72	4.04	7.29 r
February	2.14	2.02	2.31	3.77	7.27 r
March	2.52	2.40	2.61	3.85	7.06 r
April	3.02	3.43	3.27	4.17	7.65 r
May	3.01	3.34	3.25	4.07	8.54 r
June	2.94	3.29	3.09	4.14	9.57 r
July	2.89	3.19	2.84	3.92	10.15
August	2.77	2.91	2.70	3.62	10.40
September	2.98	3.13	3.06	4.07	10.19
October	3.35	4.13	3.57	4.29	8.56
November	3.59	4.09	4.05	4.61	7.98
December	3.84	4.57	4.20	4.69	7.80
2002 Average	**2.95**	**3.26**	**3.14**	**4.10**	**8.54**
January	4.47	5.30	4.87	5.26	8.07
February	5.45	6.99	5.69	5.88	8.42
March	6.69	7.34	7.55	7.59	9.71
April	4.71	5.14	4.99	5.61	10.04
May	4.97	5.64	5.01	5.66	10.56
June	5.35	5.82	5.42	6.40	11.78
July	4.91	5.10	N/A	5.81	12.54
August	4.72	5.10	N/A	5.42	12.76
September	N/A	4.68	N/A	N/A	N/A
October	N/A	4.71	N/A	N/A	N/A
November	N/A	4.57	N/A	N/A	N/A
December	N/A	5.44	N/A	N/A	N/A
2003 Average	**5.16**	**5.48**	**5.59**	**5.95**	**10.49**

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See footnote in Appendix B.

Table 22

LOUISIANA STATE OIL AND GAS DRILLING PERMITS ISSUED BY TYPE

Excluding OCS

DATE	DEVELOPMENTAL	+	WILDCATS	=	TOTAL	=	OFFSHORE	+	ONSHORE
1982	4,454		727		5,181		N/A		N/A
1983	4,852		642		5,494		201		5,293
1984	6,929		702		7,631		231		7,400
1985	4,811		599		5,410		165		5,245
1986	1,984		298		2,282		84		2,198
1987	2,148		284		2,432		73		2,359
1988	1,601		249		1,850		94		1,756
1989	1,486		204		1,690		75		1,615
1990	1,526		181		1,707		85		1,622
1991	1,209		100		1,309		77		1,232
1992	1,044		92		1,136		59		1,077
1993	1,040		109		1,149		76		1,073
1994	1,015		98		1,113		74		1,039
1995	979		86		1,065		68		997
1996	1,248		133		1,381		121		1,260
1997	1,424		138		1,562		85		1,477
1998	1,171		115		1,286		96		1,190
1999	908		109		1,017		79		938
2000	1,363		90		1,453		151		1,302
2001	1,277		88		1,365		96		1,269
January	42		3		45		3		42
February	62		8		70		6		64
March	77		7		84		3		81
April	74		12		86		6		80
May	95		5		100		5		95
June	64		7		71		8		63
July	82		12		94		11		83
August	70		26		96		9		87
September	88		7		95		6		89
October	86		12		98		12		86
November	90		18		108		10		98
December	72		6		78		11		67
2002 Total	**902**		**123**		**1,025**		**90**		**935**
January	92		11		103		6		97
February	84		5		89		14		75
March	80		7		87		8		79
April	125		5		130		4		126
May	94		10		104		7		97
June	95		7		102		4		98
July	107		6		113		9		104
August	104		20		124		7		117
September	100		6		106		5		101
October	101		11		112		8		104
November	80		9		89		5		84
December	90		15		105		6		99
2003 Total	**1,152**		**112**		**1,264**		**83**		**1,181**

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Figure 11

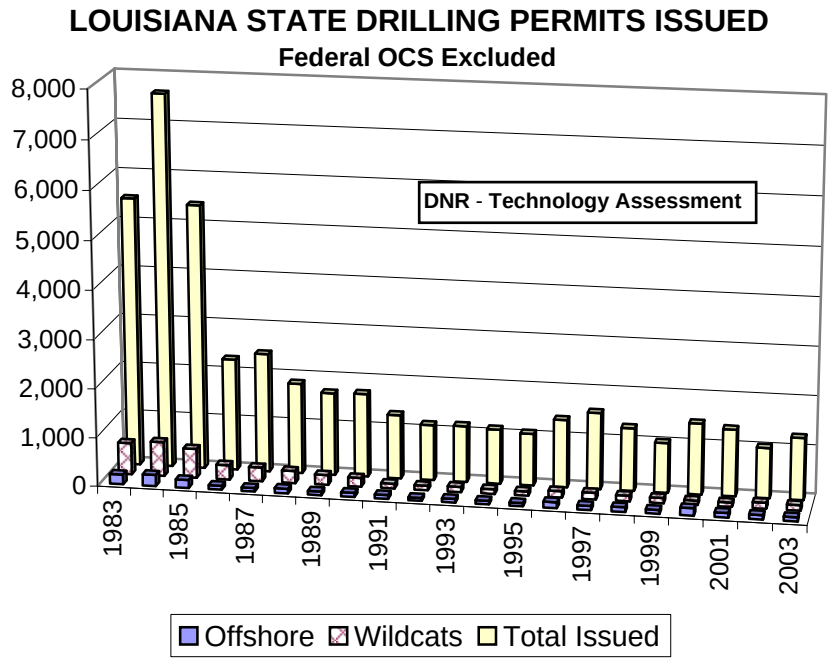

Figure 12

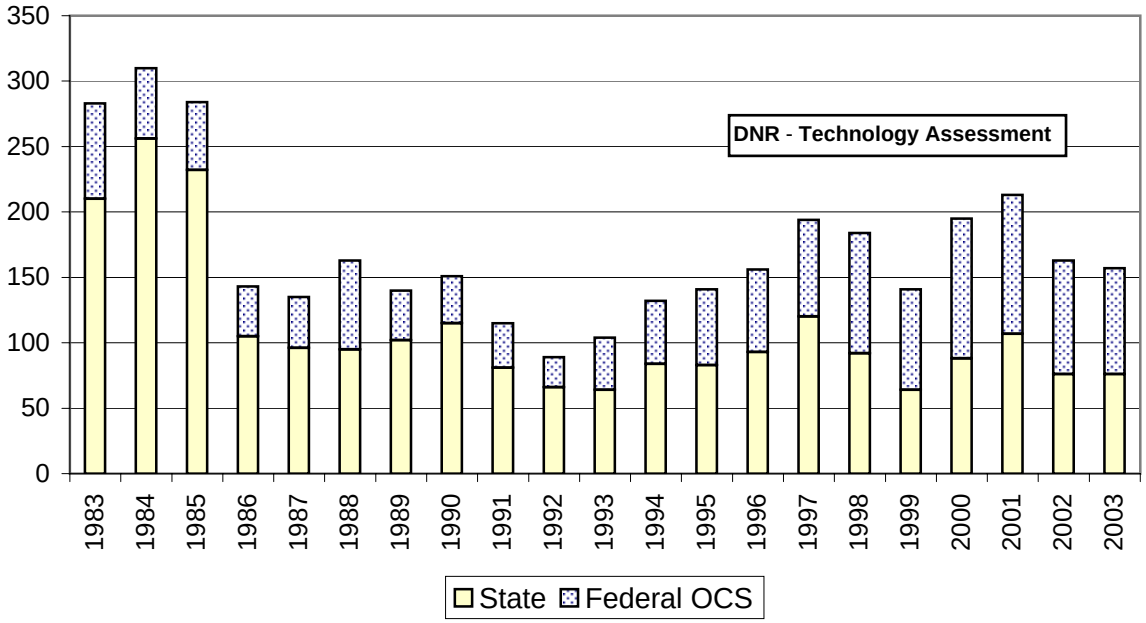

Table 23

LOUISIANA AVERAGE RIGS RUNNING

DATE	NORTH[4]	SOUTH INLAND		OFFSHORE			TOTAL
		Water[4]	Land[4]	State	O C S	(State+OCS)[4]	RIGS[4]
1982	58	83	160	85	69	154	455
1983	40	60	108	69	67	136	344
1984	29	47	82	51	73	124	283
1985	30	51	96	78	54	132	310
1986	25	44	86	78	52	130	283
1987	12	20	42	31	38	69	143
1988	11	23	36	26	39	65	135
1989	14	27	35	20	68	88	163
1990	16	17	35	34	38	72	140
1991	19	20	36	40	36	76	151
1992	11	16	31	23	34	57	115
1993	9	13	27	16	23	39	88
1994	11	12	22	19	40	59	104
1995	14	16	25	29	48	78	132
1996	16	15	28	23	58	82	141
1997	19	19	31	25	63	88	156
1998	21	23	48	28	74	102	194
1999	19	21	38	14	92	106	184
2000	16	16	21	12	77	88	141
2001	30	20	44	13	106	119	214
January	24	15	32	4	94	98	169
February	19	16	32	3	94	97	164
March	17	15	27	4	91	95	154
April	17	16	30	3	87	89	152
May	23	17	29	3	84	87	156
June	23	13	32	6	83	89	157
July	21	19	29	7	84	91	160
August	23	17	33	9	86	94	167
September	33	18	37	8	89	96	184
October	31	16	36	7	82	89	172
November	25	18	33	6	81	87	162
December	25	17	32	4	86	90	163
2002 Average	**23**	**16**	**32**	**5**	**87**	**92**	**163**
January	22	19	31	5	85	90	163
February	21	17	25	5	86	91	153
March	23	17	30	5	79	84	154
April	25	15	33	4	78	82	155
May	26	12	31	6	82	88	157
June	29	12	30	5	79	84	155
July	33	13	30	4	78	82	158
August	30	11	29	2	81	83	153
September	29	14	29	2	82	83	155
October	37	14	29	2	80	82	162
November	34	12	31	0	83	83	160
December	33	15	27	0	84	84	159
2003 Average	**28**	**14**	**30**	**3**	**81**	**85**	**157**

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Table 24

LOUISIANA STATE PRODUCING CRUDE OIL WELLS

Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1957	10,686	8,817	N/A	19,503
1958	10,950	9,541	N/A	20,491
1959	11,380	10,454	N/A	21,834
1960	11,501	11,173	N/A	22,674
1961	11,790	12,202	N/A	23,993
1962	12,192	13,344	N/A	25,536
1963	12,833	14,144	N/A	26,977
1964	13,901	13,661	1,265	28,826
1965	14,505	11,558	3,938	30,001
1966	14,419	12,165	4,330	30,915
1967	14,191	12,183	4,677	31,051
1968	13,856	11,698	4,767	30,321
1969	13,670	11,131	4,954	29,756
1970	13,166	10,363	1,179	24,707
1971	12,889	9,626	1,107	23,623
1972	12,475	8,912	1,048	22,436
1973	11,698	8,249	1,025	20,972
1974	11,984	8,262	985	21,230
1975	12,259	8,094	936	21,288
1976	12,393	7,730	1,073	21,196
1977	12,915	7,444	1,067	21,425
1978	13,019	7,219	1,086	21,324
1979	12,961	6,859	1,078	20,898
1980	13,981	6,832	1,073	21,885
1981	15,084	6,777	1,105	22,966
1982	15,540	6,608	1,112	23,259
1983	16,299	6,374	1,037	23,710
1984	17,544	6,300	1,038	24,882
1985	18,794	6,223	1,014	26,031
1986	19,346	6,061	1,001	26,408
1987	18,630	5,768	945	25,343
1988	17,953	5,698	964	24,615
1989	16,849	5,474	927	23,250
1990	17,369	5,215	906	23,490
1991	17,731	5,143	868	23,742
1992	17,449	5,155	842	23,446
1993	16,810	5,015	814	22,640
1994	15,904	4,682	805	21,392
1995	15,260	4,451	769	20,479
1996	15,148	4,295	719	20,163
1997	14,573	4,165	619	20,358
1998	13,975	3,962	546	18,484
1999	13,747	3,971	546	18,264
2000	14,450 e r	4,187 e r	575 e r	19,211 r
2001	14,368 e r	4,168 e r	703 e r	19,239 r
2002	14,242 e r	4,208 e r	687 e r	19,137 r
2003	15,062 e	4,305 e	640 e	20,006

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Figure 13

LOUISIANA WELL COMPLETIONS BY TYPE

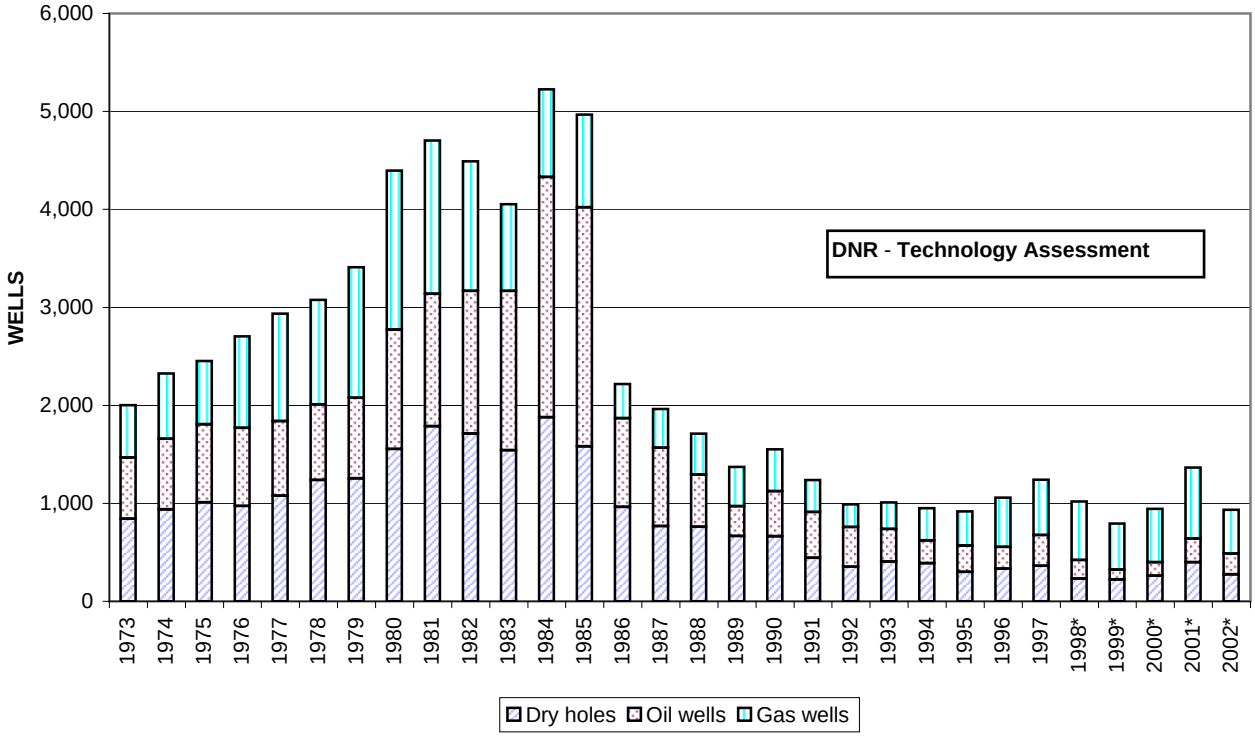

Table 25

LOUISIANA STATE PRODUCING NATURAL GAS WELLS

Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1957	3,182	1,717	0	4,899
1958	3,269	1,935	0	5,204
1959	3,398	2,306	0	5,704
1960	3,449	2,714	0	6,163
1961	3,611	2,996	0	6,607
1962	3,843	3,304	0	7,148
1963	4,103	3,545	0	7,648
1964	4,336	3,502	187	8,025
1965	4,477	3,227	618	8,321
1966	4,566	3,381	748	8,694
1967	4,548	3,448	882	8,878
1968	4,563	3,582	1,048	9,194
1969	4,558	3,451	1,297	9,306
1970	4,511	3,438	311	8,260
1971	4,449	3,389	327	8,164
1972	4,664	3,397	316	8,378
1973	4,927	3,449	332	8,707
1974	5,159	3,458	313	8,929
1975	5,373	3,331	308	9,012
1976	5,851	3,289	362	9,502
1977	6,343	3,331	449	10,123
1978	6,915	3,253	472	10,640
1979	7,372	3,214	514	11,100
1980	8,360	3,277	551	12,188
1981	9,479	3,226	557	13,262
1982	10,154	3,136	564	13,855
1983	10,502	3,065	549	14,115
1984	10,812	2,955	532	14,299
1985	11,026	2,887	511	14,424
1986	11,049	2,730	436	14,216
1987	10,726	2,635	413	13,774
1988	10,813	2,539	445	13,796
1989	10,861	2,474	501	13,836
1990	10,802	2,407	512	13,721
1991	10,702	2,261	496	13,459
1992	10,498	2,149	496	13,143
1993	10,506	2,192	490	13,189
1994	10,596	2,260	473	13,329
1995	10,452	2,200	335	12,987
1996	10,376	2,148	274	12,799
1997	10,446	2,149	296	12,891
1998	10,579	1,995	259	12,833
1999	10,581	2,010	262	12,853
2000	11,111 e r	2,134 e r	299 e r	13,545 r
2001	10,569 e r	2,194 e r	322 e r	13,085 r
2002	10,972 e r	2,132 e r	292 e r	13,397 r
2003	10,098 e	2,067 e	496 e	12,661

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Table 26

LOUISIANA STATE WELL COMPLETION BY TYPE AND BY REGION
Excluding OCS

	YEAR	OFFSHORE	SOUTH	NORTH	TOTAL
	1987	21	348	434	803
	1988	11	211	312	534
	1989	7	126	170	303
	1990	9	164	288	461
C	1991	22	178	266	466
R O	1992	19	163	222	404
U I	1993	24	136	173	333
D L	1994	13	103	117	233
E	1995	31	100	137	268
	1996	34	67	122	223
	1997	39	168	106	313
	1998	24 e	100 e	64 e	188
	1999	4 e	35 e	60 e	99
	2000	10 e	51 e	77 e	138
	2001	11 e	92 e	137 e	240
	2002	10 e	86 e	117 e	213
	1987	5	124	264	393
	1988	11	149	258	418
	1989	17	132	254	403
	1990	11	157	258	426
N	1991	9	126	192	327
A	1992	8	111	113	232
T G	1993	6	89	176	271
U A	1994	9	141	180	330
R S	1995	8	126	216	350
A	1996	22	154	325	501
L	1997	22	160	383	565
	1998	23 e	170 e	407 e	600
	1999	17 e	169 e	287 e	473
	2000	21 e	166 e	359 e	546
	2001	20 e	279 e	426 e	725
	2002	15 e	215 e	219 e	449
	1987	14	302	435	766
	1988	17	325	418	760
	1989	13	281	373	667
	1990	15	283	366	664
	1991	11	205	228	444
D H	1992	5	158	190	353
R O	1993	4	168	234	406
Y L	1994	12	141	236	389
E	1995	8	138	155	301
	1996	12	151	170	333
	1997	9	165	188	362
	1998	7 e	104 e	121 e	232 e
	1999	8 e	80 e	135 e	223 e
	2000	9 e	98 e	154 e	261 e
	2001	10 e	184 e	205 e	399 e
	2002	4 e	122 e	147 e	273 e

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Table 27

LOUISIANA STATE MINERAL BONUS, RENTAL AND ROYALTY OVERRIDE REVENUES, Excluding OCS

(Million Dollars)

DATE	BONUSES	OVERRIDE ROYALTY	RENTALS	TOTAL
1982	61.23	0.70	53.66	115.60
1983	53.03	0.67	27.73	81.43
1984	67.98	0.80	21.21	89.99
1985	32.08	0.90	20.86	53.84
1986	15.89	0.50	12.25	28.64
1987	26.82	0.39	6.70	33.90
1988	17.65	0.29	9.28	27.22
1989	11.59	0.29	8.34	20.21
1990	19.02	0.32	6.76	26.10
1991	9.82	0.32	8.71	18.85
1992	4.26	0.32	6.97	11.55
1993	13.29	0.20	4.20	17.68
1994	15.31	0.19	6.15	21.65
1995	31.96	0.69	9.47	42.12
1996	39.63	-0.27	18.40	57.76
1997	38.27	0.84	25.00	64.11
1998	42.27	0.69	25.86	68.82
1999	14.17	0.45	20.27	34.89
2000	21.12	1.13 r	14.16 r	36.41
2001	29.70	1.89	13.75	45.34
January	1.12	0.05	1.00	2.17
February	0.58	0.85	1.65	3.07
March	5.84	0.29	1.02	7.15
April	0.97	0.13	1.91	3.02
May	2.67	0.09	0.63	3.39
June	1.29	0.12	1.53	2.93
July	5.88	0.14	1.57	7.59
August	0.98	0.13	1.04	2.15
September	1.53	0.10	0.84	2.47
October	0.74	0.25	1.32	2.31
November	0.81	0.13	0.74	1.68
December	2.31	0.01	1.02	3.34
2002 Total	**24.74**	**2.29**	**14.26**	**41.28**
January	1.55	0.17	1.32	3.04
February	0.44	0.09	1.61	2.13
March	2.22	0.03	1.62	3.88
April	2.07	0.11	1.80	3.97
May	0.62	0.24	0.41	1.27
June	2.18	0.25	1.12	3.55
July	1.46	0.43	0.74	2.63
August	0.78	-0.98	0.99	0.79
September	1.61	1.74	0.59	3.94
October	1.96	0.41	1.07	3.44
November	3.45	0.44	0.42	4.31
December	1.22	0.41	1.25	2.87
2003 Total	**19.54**	**3.36**	**12.93**	**35.83**

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Table 28

LOUISIANA STATE MINERAL ROYALTY REVENUE

Excluding OCS
(Million Dollars)

DATE	OIL	GAS	PLANT LIQUIDS	OTHER	TOTAL
1982	248.44	204.25	14.35	1.82	468.86
1983	224.62	211.84	13.00	1.83	451.29
1984	226.64	210.99	13.06	2.29	452.98
1985	201.14	174.45	9.55	2.62	387.76
1986	122.22	154.83	6.34	1.96	285.34
1987	125.72	120.54	4.90	1.60	252.76
1988	98.55	124.06	4.39	1.35	228.35
1989	112.30	116.18	3.92	1.42	233.82
1990	135.44	113.14	3.80	0.90	253.28
1991	120.49	91.43	4.51	0.34	216.76
1992	113.29	97.07	4.69	0.00	215.04
1993	99.20	125.01	4.53	0.00	228.74
1994	85.72	102.95	4.05	0.00	192.72
1995	95.82	146.60	4.60	0.00	247.02
1996	123.51 r	211.31 r	6.72 r	0.00	341.54 r
1997	112.76 r	154.62 r	5.93 r	0.00	273.31 r
1998	68.85 r	121.17 r	2.58 r	0.00	192.60 r
1999	91.52 r	115.10 r	2.05 r	0.00	208.66 r
2000	143.96 r	212.71 r	3.46 r	0.00	360.14 r
2001	123.99 r	252.68 r	6.32 r	0.00	382.99 r
January	6.44 r	11.59 r	0.38 r	0.00	18.42 r
February	6.17 r	8.43 r	0.40 r	0.00	15.00 r
March	8.20 r	11.10 r	0.50 r	0.00	19.80 r
April	8.52 r	14.31 r	0.59 r	0.00	23.43 r
May	9.27 r	14.95 r	0.65 r	0.00	24.87 r
June	8.54 r	14.48 r	0.60 r	0.00	23.62 r
July	9.21 r	14.93 r	0.67 r	0.00	24.81 r
August	9.61 r	13.43 r	0.76 r	0.00	23.80 r
September	8.25 r	12.40 r	0.77 r	0.00	21.42 r
October	7.03 r	12.89 r	0.61 r	0.00	20.53 r
November	8.22 r	15.38 r	0.75 r	0.00	24.34 r
December	9.62 r	17.89 r	0.77 r	0.00	28.27 r
2002 Total	**99.07 r**	**161.78 r**	**7.46 r**	**0.00**	**268.31 r**
January	11.10	22.24	0.87	0.00	34.21
February	11.57	26.38	0.85	0.00	38.81
March	12.55	37.71	0.69	0.00	50.95
April	10.16	24.20	0.65	0.00	35.01
May	9.96	25.06	0.69	0.00	35.71
June	9.92	25.31	0.62	0.00	35.84
July	9.87	21.52	0.61	0.00	32.01
August	10.13	17.42	0.55	0.00	28.10
September	N/A	N/A	N/A	0.00	N/A
October	N/A	N/A	N/A	0.00	N/A
November	N/A	N/A	N/A	0.00	N/A
December	N/A	N/A	N/A	0.00	N/A
2003 Total	**93.29**	**200.14**	**5.53**	**0.00**	**298.96**

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Table 29

LOUISIANA STATE MINERAL SEVERANCE TAX REVENUE[8]

Excluding OCS
(Million Dollars)

DATE	OIL	GAS	OTHER MINERALS	SEVERANCE TOTAL
1982	766.49	147.53	N/A	914.02
1983	662.00	131.52	2.45	795.98
1984	652.39	130.99	3.62	787.00
1985	598.67	120.96	3.73	723.37
1986	389.87	125.14	3.42	518.42
1987	345.18	111.84	2.99	460.01
1988	296.45	106.29	2.65	405.39
1989	312.99	108.84	2.43	424.26
1990	373.21	124.61	2.75	500.58
1991	367.13	146.83	1.97	515.93
1992	326.07	126.24	1.63	453.94
1993	283.68	107.32	1.76	392.76
1994	229.40	114.58	2.02	346.00
1995	233.37	114.58	1.85	349.80
1996	270.36	98.60	1.88	370.84
1997	257.13	118.27	1.85	377.25
1998	148.96	120.98	1.40	271.34
1999	171.29	102.48	1.82	275.60
2000	337.51	104.33	1.50	443.34
2001	281.95	165.77	1.65	449.38
January	19.68	22.23	0.12	42.04
February	15.33	19.29	0.10	34.72
March	20.37	19.50	0.13	40.00
April	N/A	N/A	N/A	N/A
May	22.51	19.84	0.10	42.45
June	20.82	17.56	0.14	38.53
July	21.11	18.85	0.15	40.11
August	28.68	13.86	0.15	42.69
September	21.32	11.67	0.07	33.06
October	28.14	10.77	0.18	39.08
November	19.18	10.92	0.11	30.21
December	18.70	9.00	0.07	27.77
2002 Total	**235.84**	**173.51**	**1.33**	**410.67**
January	46.62	10.41	0.13	57.16
February	24.39	9.89	0.14	34.42
March	26.75	9.43	0.15	36.33
April	27.07	9.91	0.14	37.12
May	25.41	10.88	0.11	36.40
June	23.59	12.07	0.15	35.80
July	24.62	11.55	0.20	36.37
August	24.95	14.47	0.10	39.52
September	20.99	15.60	0.17	36.75
October	23.86	15.85	0.15	39.85
November	22.76	16.56	0.13	39.46
December	25.68	15.51	0.14	41.34
2003 Total	**316.70**	**152.13**	**1.70**	**470.53**

e Estimated r Revised p Preliminary

Table 30

STATE SECTION 8(g) REVENUE FROM LOUISIANA'S OCS[13]

(Dollars)

YEAR	RENTALS	BONUSES	ROYALTIES	8G ESCROW	SETTLE-MENT	TOTAL
1986	610,567	1,912,734	66,176,203			68,699,504
1987	148,578	3,150,519	11,043,115	572,000,000	2,520,000	588,862,212
1988	153,561	5,528,006	8,708,079		2,520,000	16,909,646
1989	175,817	2,890,298	7,163,105		2,520,000	12,749,220
1990	430,198	5,570,375	6,239,368		2,520,000	14,759,941
1991	303,824	2,220,094	8,461,261		2,520,000	13,505,179
1992	258,787	1,189,989	6,405,279		5,880,000	13,734,055
1993	235,250	965,504	7,373,550		5,880,000	14,454,304
1994	1,016,932	1,913,682	11,780,932		5,880,000	20,591,546
1995	255,213	890,002	8,012,718		5,880,000	15,037,933
1996	292,445	4,666,400	12,283,395		5,880,000	23,122,240
1997	686,051	5,689,689	11,855,454		8,400,000	26,631,194
1998	412,229	1,744,928	9,621,860		8,400,000	20,179,017
1999	357,379	241,659	6,284,879		8,400,000	15,283,917
2000	321,695	1,268,244	12,690,937	0	8,400,000	22,680,876
2001	303,675	2,148,111	29,789,999	0	8,400,000	40,641,785
2002	N/A	N/A	11,863,317	0	0	11,863,317
2003	317,787	2,773,594	26,472,863	0	0	29,564,244

See footnotes on Appendix B

Royalty revenues from Federal offshore leases on the Outer Continental Shelf (OCS) are distributed to the Land and Water. Conservation Fund, the Historic Preservation Fund, and the General Fund of the U.S. Treasury. Transfers are made in each fiscal year from OCS royalties, rentals and bonuses in order to maintain the Land and Water Conservation Fund's annual authorization of $900 million. Annually, $150 million is put into the Historic Preservation Fund. The balance of offshore revenue receipts is directed to the General Fund of the U.S. Treasury.

Section 8(g) of the Outer Continental Shelf Lands Act Amendments of 1978 provided that the states were to receive a "fair and equitable" division of revenues generated from the leasing of lands within 3 miles of the seaward boundary of a coastal state that contains one or more oil and gas pools or fields underlying both the OCS and lands subject to the jurisdiction of the state. The states and the federal government, however, were unable to reach agreement concerning the meaning of the term "fair and equitable". Revenues generated in the 3-mile boundary zone were subsequently placed into an escrow fund in August 1979.

Congress resolved the dispute over the meaning of "fair and equitable" in the Outer Continental Shelf Lands Act Amendments of 1985, Public Law 99-272. The law provided for the following distribution of revenues to the states under section 8(g):

Before 1986: Louisiana did not receive any shared revenue from OCS production prior to 1986.

1986: Louisiana received a payment of $68.7 million from royalties, rentals and bonuses collected in 1986 and prior years.

1998-2000: In 1987 Louisiana received an initial settlement payment of $572 million from the escrow funds. A series of annual settlement payments have been disbursed to the states over a 15-year period along with an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. The annual settlement payments are: From 1987 through 1991, Louisiana received an annual settlement payment of $2.52 million per year. From 1992 through 1996, the state received an annual settlement payment of $5.88 million per year. Beginning in 1997 until the last payment in 2001, Louisiana will receive an annual settlement payment of approximately $8.40 million per year.

2002 and After: No further settlement payments; states receive only a recurring annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. Louisiana will receive an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within Louisiana's affected 8(g) zone.

TABLE 31

LOUISIANA STATE TOTAL MINERAL REVENUE

(Dollars)

YEAR	FEDERAL OCS (8g)	FEDERAL ONSHORE	STATE BOUNDARIES	TOTAL
1980	0	355,000	1,072,513,958	1,072,868,958
1981	0	612,000	1,653,883,820	1,654,495,820
1982	0	617,000	1,498,482,501	1,499,099,501
1983	0	637,000	1,328,700,057	1,329,337,057
1984	0	905,000	1,329,965,030	1,330,870,030
1985	0	795,000	1,164,969,360	1,165,764,360
1986	68,699,504	555,000	832,406,385	901,660,889
1987	588,862,212	517,000	746,675,897	1,336,055,109
1988	16,909,646	545,000	660,959,699	678,414,345
1989	12,749,220	452,000	678,301,987	691,503,207
1990	14,759,941	542,000	779,963,703	795,265,644
1991	13,505,179	328,000	751,117,246	764,950,425
1992	13,734,055	376,000	680,527,788	694,637,843
1993	14,454,304	782,000	639,182,812 r	654,412,032 r
1994	20,591,546	532,000	560,371,998	581,495,544
1995	15,037,933	728,000	638,942,698 r	605,347,517 r
1996	23,122,240	943,209	733,235,111 r	726,355,108 r
1997	26,631,194	817,329	730,169,075 r	738,880,571 r
1998	20,179,017	996,000	539,513,979 r	560,688,996 r
1999	15,283,917	1,276,465	508,102,794 r	524,663,176 r
2000	22,680,876	1,024,730	823,227,720 r	846,933,326 r
2001	40,641,785	1,484,476	898,272,659 r	940,371,920 r
2002	11,863,317	N/A	720,266,161	N/A
2003	29,564,244	N/A	N/A	N/A

e Estimated r Revised p Preliminary
See footnote in Appendix B.

Federal OCS: See table 30.

Federal Onshore: Revenue distributed to the state under section 35 of the Mineral Leasing Act (MLA). MLA provides to the state 50% of mineral revenue from federal lands located within the state boundaries. Revenues came from royalties, rents and bonuses.

State Boundaries: Revenue from mineral production such as bonuses, override royalties, rents, royalties and severance taxes within state boundaries.

Table 32

REVENUE TO FEDERAL GOVERNMENT COLLECTED FROM OIL AND GAS LEASES IN THE LOUISIANA OCS [12]

(Area beyond the state's 3-mile offshore boundary)
(Dollars)

YEAR	BONUS PAYMENTS	RENTAL PAYMENTS	MINIMUM ROYALTIES	PRODUCTION ROYALTIES	TOTAL[a] COLLECTION
1962	488,923,341	7,707,267	497,202	65,253,373	562,381,183
1963	0	7,059,246	632,376	75,347,238	83,038,860
1964	60,340,626	7,040,422	823,439	112,999,967	181,204,454
1965	0	5,909,553	1,021,505	126,121,728	133,052,786
1966	238,958,065	4,736,294	1,327,830	131,253,307	376,275,496
1967	510,079,178	5,500,516	1,888,758	149,096,032	666,564,484
1968	149,868,789	5,275,979	2,140,858	190,907,982	348,193,608
1969	110,945,535	5,584,162	1,922,340	226,504,238	344,956,275
1970	945,064,773	6,243,362	1,692,274	262,709,833	1,215,710,242
1971	96,304,523	5,687,848	1,564,845	324,815,819	428,373,035
1972	2,251,347,556	6,396,291	1,725,573	342,476,302	2,601,945,722
1973	193,031,709	5,272,797	2,005,785	380,509,177	580,819,468
1974	3,528,744,084	8,350,760	1,739,159	535,836,029	4,074,670,032
1975	325,424,688	8,947,571	1,837,253	593,359,397	929,568,909
1976	482,592,035	12,974,770	1,879,704	682,922,971	1,180,369,480
1977	813,991,004	7,740,185	1,248,616	899,016,863	1,721,996,668
1978	1,015,873,944	8,616,027	1,502,963	1,086,517,424	2,112,510,358
1979	2,521,190,635	7,328,999	1,105,865	1,344,995,442	3,874,620,941
1980	2,676,927,673	7,361,904	1,277,987	1,866,737,837	4,552,305,401
1981	3,308,009,881	8,205,515	1,211,959	2,825,271,285	6,142,698,640
1982	1,110,172,751	7,288,316	1,349,850	3,166,294,042	4,285,104,959
1983	3,796,644,766	13,620,158	2,540,294	2,764,348,600	6,577,153,818
1984	1,154,495,009	16,323,567	2,010,462	3,195,995,282	4,368,824,320
1985	830,710,260	33,756,447	2,139,530	2,940,519,737	3,807,125,974
1986	113,731,609	34,110,029	3,199,547	2,006,205,199	2,157,246,384
1987	247,344,486	52,115,828	19,239,027	1,803,208,740	2,121,908,081
1988	388,730,457	35,752,757	8,727,373	1,571,981,500	2,005,192,087
1989	386,710,637	48,498,402	26,261,190	1,618,163,065	2,079,633,294
1990	421,375,632	55,568,777	16,028,740	2,068,487,831	2,561,460,980
1991	276,234,849	59,126,732	15,444,167	1,857,392,914	2,208,198,662
1992	53,716,797	49,087,621	33,533,897	1,848,599,157	1,984,937,472
1993	61,454,861	29,268,366	119,445,091	2,009,644,653	2,219,812,971
1994	256,271,643	30,003,884	141,190,812	1,888,953,102	2,316,419,441
1995	296,254,733	62,526,069	19,803,444	1,764,875,791	2,143,460,037
1996	24,330,068	53,231,380	40,394,227	2,549,759,516	3,154,940,691
1997	1,169,790	55,761,920	65,651,370	2,857,126,443	3,789,383,151
1998	9,207,972	51,518,286	-14,452,431 [b]	2,267,502,514	2,313,776,341
1999	1,169,790	40,463,226	49,219,184	2,228,250,265	2,319,102,465
2000	83,630,219	32,710,256	167,647,231	3,045,847,943	3,329,835,649
2001	160,037,859	30,078,009	177,773,259	5,126,344,201	5,494,233,328

[a] Total collection, including state 8G shares.

[b] Negative due to overpayment's refunds

See footnote in Appendix B.

Table 33

LOUISIANA ESTIMATED CRUDE OIL PROVED RESERVES [9]
EXCLUDING LEASE CONDENSATE
As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1982	240	611	1,677	N/A	2,528	27,858
1983	223	569	1,915	N/A	2,707	27,735
1984	165	585	1,911	N/A	2,661	28,446
1985	196	565	122	1,759	2,642	28,416
1986	160	547	119	1,640	2,466	26,889
1987	175	505	127	1,514	2,321	27,256
1988	154	511	135	1,527	2,327	26,825
1989	123	479	143	1,691	2,436	26,501
1990	120	435	150	1,772	2,477	26,254
1991	127	408	144	1,775	2,454	24,682
1992	125	417	126	1,643	2,311	23,745
1993	108	382	149	1,880	2,519	22,957
1994	108	391	150	1,922	2,571	22,457
1995	108	387	142	2,269	2,906	22,351
1996	128	382	148	2,357	3,015	22,017
1997	136	427	151	2,587	3,301	22,546
1998	101	357	97	2,483	3,038	21,034
1999	108	384	108	2,442	3,042	21,765
2000	97	310	122	2,751	3,280	22,045
2001	87	341	136	3,877	4,441	22,446
2002	75	335	91	4,088	4,589	22,677

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1984.
See footnotes on Appendix B N/A Not Available

Figure 14

UNITED STATES CRUDE OIL RESERVES
December 31, 2002
Excluding Lease Condensate
(Million Barrels)

STATE	VOLUME
Texas	5,372
Alaska	4,678
California	4,198
Louisiana	4,589
Oklahoma	598
Other	3,242
TOTAL	**22,677**

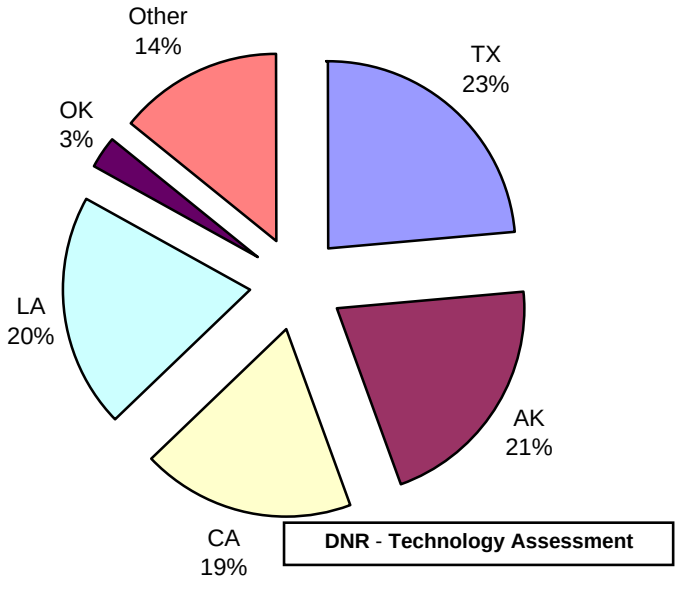


Table 34

LOUISIANA ESTIMATED LEASE CONDENSATE PROVED RESERVES[9]

As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1982	26	243	310	N/A	579	1,601
1983	24	238	300	N/A	562	1,613
1984	19	229	269	N/A	517	1,522
1985	18	220	257	N/A	495	1,453
1986	18	208	11	230	467	1,436
1987	17	194	13	223	447	1,402
1988	17	193	13	223	446	1,389
1989	20	196	12	278	506	1,389
1990	20	182	12	258	472	1,302
1991	21	175	9	253	458	1,244
1992	19	151	8	226	404	1,226
1993	19	133	9	235	396	1,192
1994	21	123	9	233	386	1,147
1995	24	136	11	305	476	1,197
1996	24	127	11	422	584	1,307
1997	30	134	12	433	609	1,341
1998	23	138	16	435	612	1,336
1999	25	134	15	435	609	1,295
2000	22	130	17	437	606	1,333
2001	27	141	19	325	512	1,398
2002	18	121	8	322	469	1,135

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1985.
See footnotes on Appendix B N/A Not Available

Figure 15

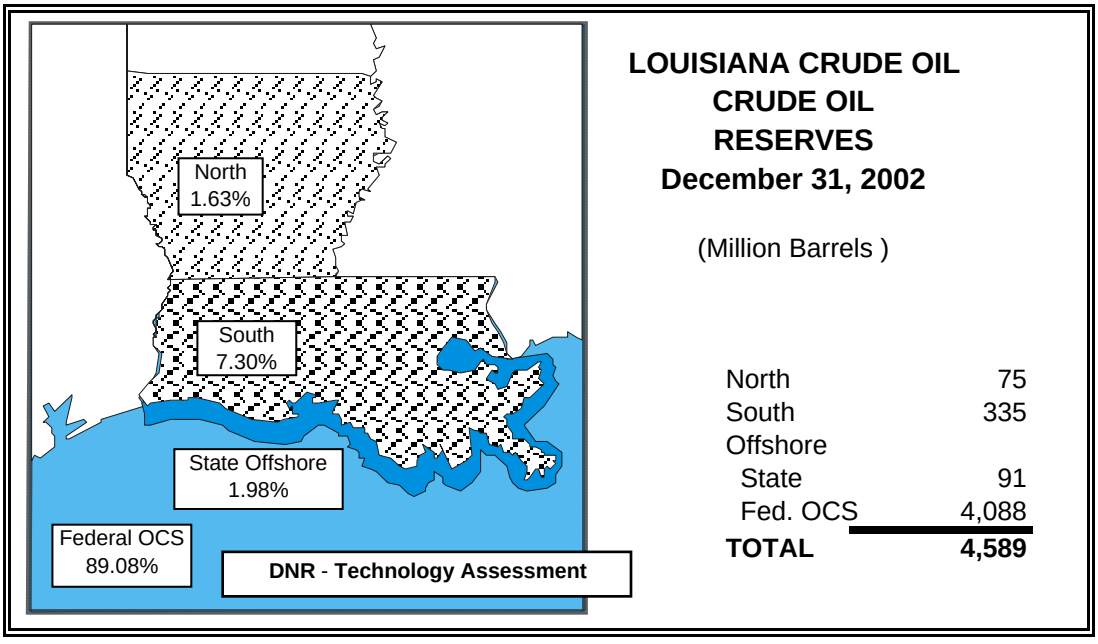


Table 35

LOUISIANA ESTIMATED DRY NATURAL GAS PROVED RESERVES[9]

As of December 31st of Each Year

(Billion Cubic Feet, at 14.73 psia and 60 degrees Fahrenheit)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1982	2,919	11,801	30,203 c	N/A	44,923 c	201,512
1983	2,939	11,142	28,480 c	N/A	42,561 c	200,247
1984	2,494	10,331	28,574 c	N/A	41,399 c	197,463
1985	2,587	9,808	1,643	26,113 c	40,151 c	193,369
1986	2,515	9,103	1,312	25,454 c	38,384 c	191,586
1987	2,306	8,693	1,431	23,260 c	35,690 c	187,211
1988	2,398	8,654	1,172	23,471 c	35,695 c	168,024
1989	2,652	8,645	1,219	24,187 c	36,703 c	167,116
1990	2,588	8,171	969	22,679 c	34,407 c	169,346
1991	2,384	7,504	1,024	21,611 c	32,523 c	167,062
1992	2,311	6,693	776	19,653 c	29,433 c	165,015
1993	2,325	5,932	917	19,383 c	28,557 c	162,415
1994	2,537	6,251	960	20,835 c	30,583 c	163,837
1995	2,788	5,648	838	21,392 c	30,666 c	165,146
1996	3,105	5,704	734	21,856 c	31,399 c	166,474
1997	3,093	5,855	725	21,934 c	31,607 c	167,223
1998	2,898	5,698	551	20,774 c	29,921 c	164,041
1999	3,079	5,535	628	19,598 c	28,840 c	167,406
2000	3,298	5,245	696	19,788 c	29,027 c	177,427
2001	3,881	5,185	745	19,721 c	29,532 c	183,460
2002	4,245	4,224	491	18,500 c	27,460 c	186,946

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1984.

N/A Not Available

[C] Includes Federal Offshore Alabama

Figure 16

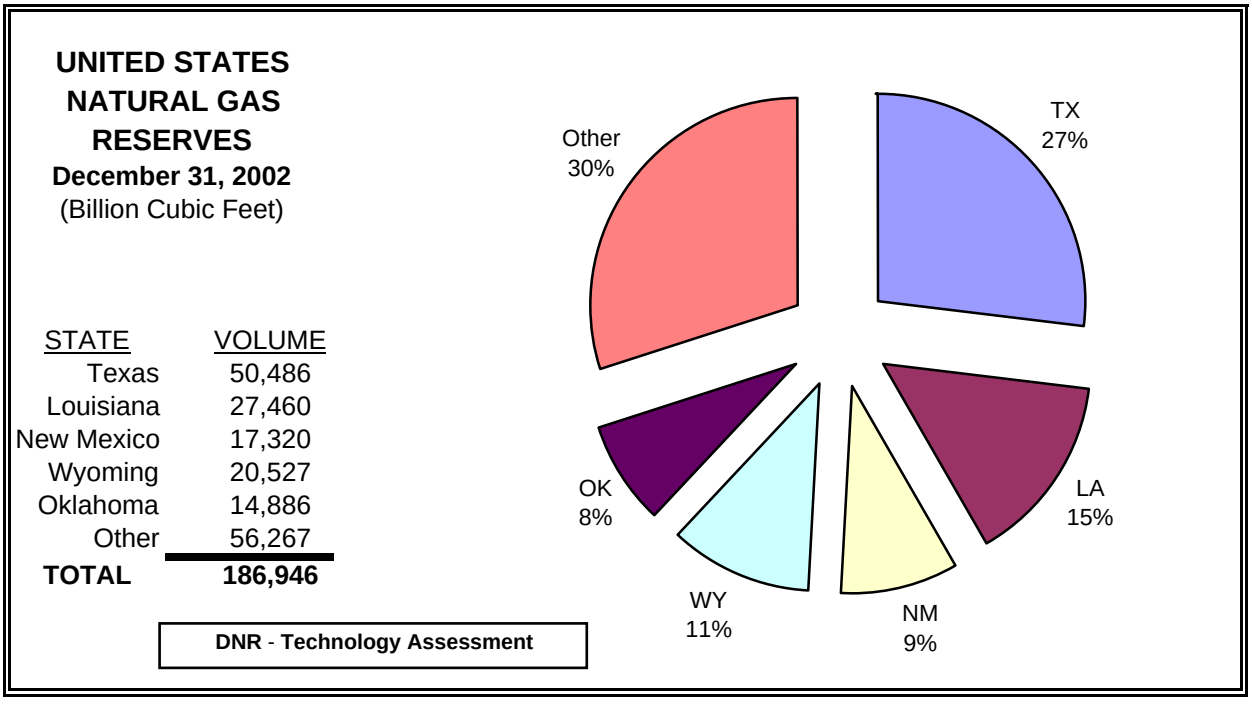


Table 36

LOUISIANA ESTIMATED NATURAL GAS LIQUIDS PROVED RESERVES [9] EXCLUDING LEASE CONDENSATE

As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1982	73	301	374	N/A	748	4,019 r
1983	61	263	409	N/A	733	4,675 r
1984	55	298	462	N/A	815	4,599 r
1985	39	234	420	N/A	693	5,038 r
1986	39	220	28	336	623	5,293 r
1987	33	235	33	309	610	5,343 r
1988	39	228	27	289	583	5,460 r
1989	40	215	39	297	591	4,991 r
1990	38	249	37	261	585	4,982 r
1991	38	242	41	292	613	4,978 r
1992	41	229	47	246	563	4,999 r
1993	38	201	21	255	515	4,838 r
1994	48	214	19	267	548	4,876 r
1995	55	359	16	191	621	5,005 r
1996	61	284	36	199	580	5,209 r
1997	50	199	12	352	613	5,291 r
1998	34	187	13	341	575	4,852 r
1999	36	230	19	398	681	5,316 r
2000	39	207	21	315	582	7,012 r
2001	35	128	41	273	477	6,595 r
2002	31	105	40	314	490	6,859

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1985.
See footnotes on Appendix B N/A Not Available

Figure 17

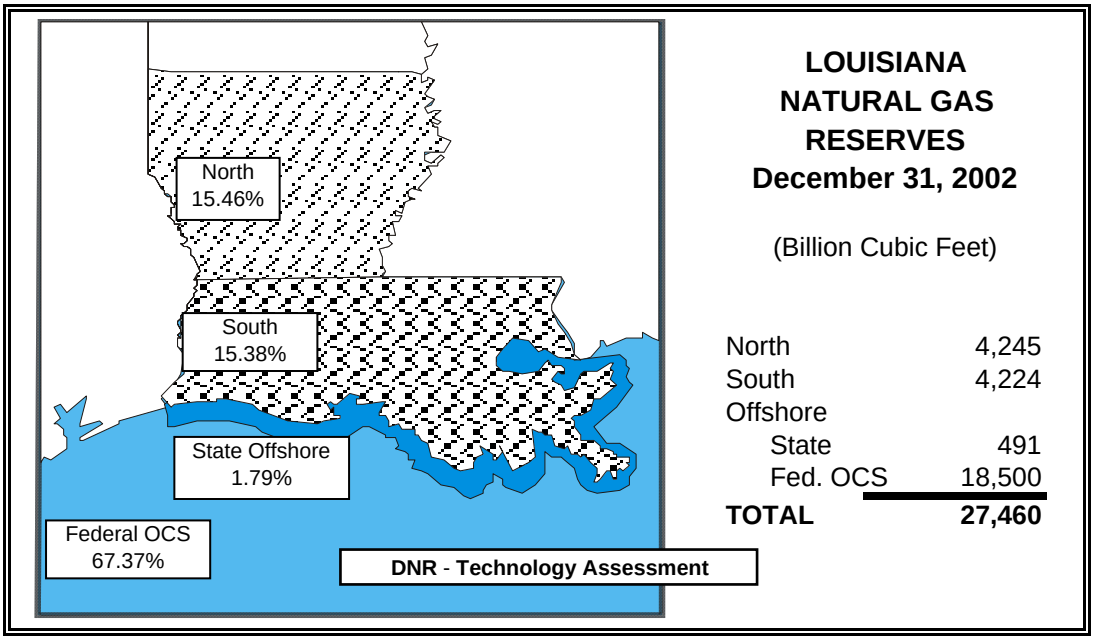


Table 37

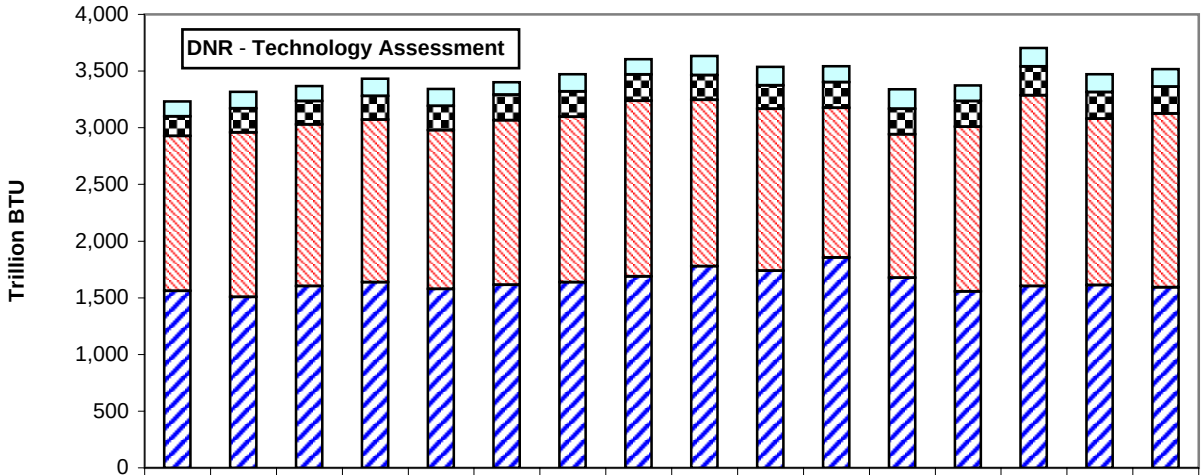
LOUISIANA NONAGRICULTURAL EMPLOYMENT [1]

DATE	OIL & GAS PRODUCTION	CHEMICAL INDUSTRY	PETROLEUM MANUFACTURING	ALL PIPELINE*	TOTAL EMPLOYMENT
1981	94,772	32,711	16,314	1,200	1,627,796
1982	92,225	33,984	13,111	1,033	1,571,017
1983	77,283	30,272	13,140	1,282	1,531,480
1984	78,032	29,104	13,053	1,247	1,568,064
1985	77,781	28,093	12,458	1,144	1,550,443
1986	58,888	25,998	12,233	1,168	1,475,318
1987	52,117	25,345	12,225	1,051	1,438,793
1988	54,565	26,957	11,258	1,039	1,468,508
1989	52,509	27,717	11,321	1,016	1,492,051
1990	54,063	29,083	11,535	1,041	1,546,820
1991	54,412	29,412	12,268	1,073	1,566,779
1992	45,869	30,349	12,543	1,095	1,583,423
1993	44,422	30,419	12,728	1,078	1,613,577
1994	44,885	30,014	13,037	1,014	1,671,087
1995	44,279	30,168	11,603	932	1,721,651
1996	46,885	30,096	11,262	789	1,757,619
1997	51,559	29,935	11,038	792	1,797,225
1998	54,875	30,196	10,984	702	1,837,505
1999	44,645	28,898	11,046	693	1,846,026
2000	45,714	28,335	10,345	724	1,872,494
January	45,243	28,006	10,275	2,427	1,847,547
February	46,278	27,968	10,419	2,681	1,854,853
March	47,082	27,994	10,505	2,679	1,868,488
April	46,989	27,450	10,671	2,430	1,878,416
May	47,675	27,459	10,752	2,465	1,888,026
June	48,413	27,469	10,799	2,472	1,895,966
July	47,902	27,334	10,909	2,326	1,850,606
August	48,247	27,075	10,883	2,311	1,861,694
September	48,036	26,936	10,798	2,277	1,871,422
October	47,146	26,944	10,529	2,318	1,867,690
November	45,523	26,739	10,618	2,310	1,871,223
December	45,579	26,664	10,554	2,309	1,870,897
2001 Average	**47,009**	**27,337**	**10,643**	**2,417**	**1,868,902**
January	45,312	26,374	10,596	2,269	1,831,650
February	44,935	26,265	10,570	2,273	1,837,948
March	44,631	26,186	10,568	2,260	1,847,797
April	43,398	25,936	10,606	2,265	1,854,508
May	43,674	25,700	10,598	2,286	1,860,271
June	44,064	25,629	10,610	2,284	1,865,707
July	43,816	25,576	10,620	2,337	1,832,083
August	44,151	25,537	10,607	2,341	1,843,454
September	43,940	25,351	10,533	2,333	1,852,839
October	42,801	25,336	10,496	2,354	1,845,435
November	42,676	25,243	10,501	2,342	1,855,310
December	42,670	25,190	10,481	2,331	1,856,865
2002 Average	**43,839**	**25,694**	**10,566**	**2,306**	**1,848,656**

* Natural Gas Pipeline employment is included in 2001 forward but excluded in prior years.
See footnote in Appendix B.

Figure 18

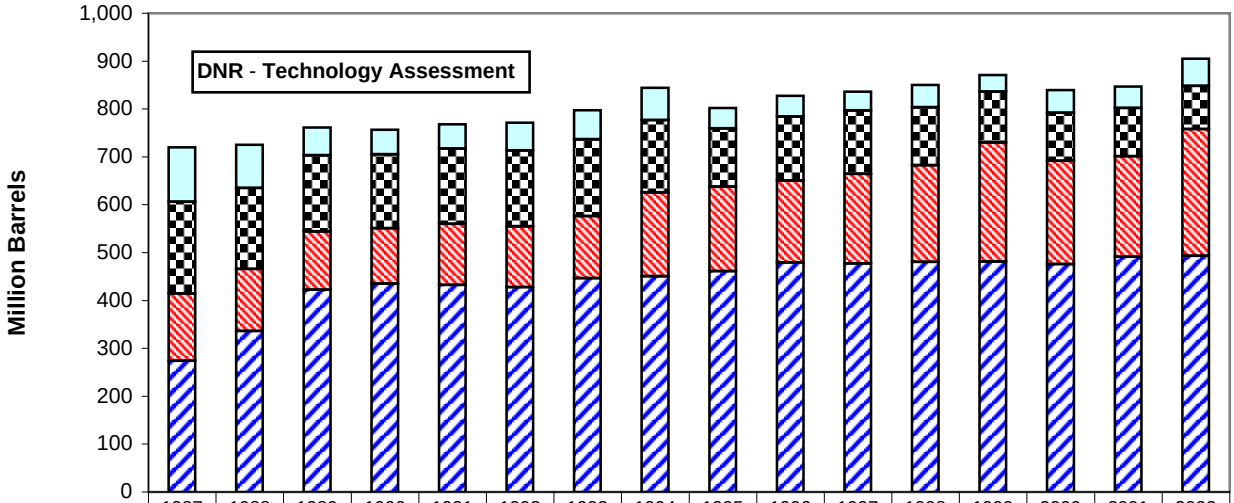
LOUISIANA ENERGY CONSUMPTION BY SOURCE



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Nuclear	133	148	133	152	150	111	154	136	167	166	142	172	137	165	158	153
Coal	172	212	207	209	214	224	223	231	218	206	225	225	228	253	235	239
Petroleum	1,367	1,451	1,424	1,436	1,398	1,453	1,460	1,550	1,469	1,430	1,320	1,266	1,452	1,681	1,466	1,533
Natural Gas	1,561	1,506	1,605	1,637	1,579	1,614	1,637	1,689	1,778	1,738	1,855	1,677	1,556	1,605	1,613	1,591
Total	3,233	3,318	3,368	3,433	3,341	3,401	3,473	3,606	3,632	3,538	3,542	3,340	3,373	3,703	3,472	3,516

Figure 19

LOUISIANA REFINERY CRUDE OIL INPUT BY SOURCE



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Other States	114	91	58	52	51	58	61	68	43	44	40	47	35	47	45	57
Louisiana	192	169	159	154	157	159	160	151	122	134	132	121	106	100	101	90
Federal OCS	141	130	121	115	128	127	130	176	176	171	187	201	249	216	210	265
Foreign	274	336	423	435	433	428	446	450	461	479	477	481	481	476	491	493
Total	720	726	761	757	768	771	797	844	802	828	836	850	871	839	847	905

Table 38

LOUISIANA ENERGY CONSUMPTION ESTIMATES BY SOURCE[11]

Year	Total Energy (TBTU)	Total Natural Gas (BCF)	Total Petroleum (MBBLS)	Total Coal (MST)	Total Nuclear (Million KWH)
1962	1,584.7	1,015	94,051	N/A	0
1963	1,689.5	1,091	99,427	N/A	0
1964	1,794.1	1,144	106,260	N/A	0
1965	1,766.8	1,110	109,325	N/A	0
1966	1,882.9	1,202	115,895	N/A	0
1967	2,124.1	1,394	123,074	N/A	0
1968	2,295.0	1,521	134,822	N/A	0
1969	2,572.3	1,763	148,052	N/A	0
1970	2,701.4	1,841	150,124	0	0
1971	2,809.3	1,884	163,298	0	0
1972	2,989.3	1,940	186,445	0	0
1973	3,225.9	2,010	212,662	0	0
1974	3,313.3	2,008	222,611	0	0
1975	3,028.8	1,789	214,065	0	0
1976	3,419.1	2,044	237,208	0	0
1977	3,794.6	2,191	270,987	79	0
1978	3,930.1	2,249	279,482	172	0
1979	3,823.5	1,978	307,896	118	0
1980	3,651.3 r	1,794	293,743	111	0
1981	3,688.6 r	1,782	295,191	1,363	0
1982	3,441.2 r	1,556	287,419	3,724	0
1983	3,284.5 r	1,413	275,058	6,154	0
1984	3,413.5 r	1,594	248,344	6,855	0
1985	3,192.5 r	1,386	240,776 r	9,217	2,457
1986	3,353.4 r	1,439	260,602	10,459	10,637
1987	3,435.5 r	1,501	257,313	10,391	12,324
1988	3,473.1 r	1,446	271,773	12,848	13,785
1989	3,592.6 r	1,538	266,193	12,471	12,391
1990	3,623.8 r	1,571	259,533 r	12,547	14,197
1991	3,545.9 r	1,508	256,789 r	12,965	13,956
1992	3,636.0 r	1,546	268,559 r	13,674	10,356
1993	3,688.6 r	1,578	273,580 r	13,676	14,398
1994	3,837.3 r	1,624	294,700 r	14,100	12,779
1995	3,837.2 r	1,718	288,998 r	13,357	15,686
1996	3,848.5 r	1,664	279,292 r	12,534	15,765
1997	3,828.0 r	1,661 r	258,290 r	13,874	13,511
1998	3,564.0 r	1,569 r	248,094 r	13,891	16,428
1999	3,608.6 r	1,495 r	278,926 r	13,953	16,428
2000	3,965.2 r	1,537 r	327,692 r	15,734	13,112
2001	3,712.6 e	1,304 r	288,776 r	14,526 e	15,796 e
2002	3,762.1 e	1,446 e	298,465 e	14,738 e	15,112 e

e Estimated r Revised p Preliminary

TBTU = Trillion BTU BCF = Billion Cubic Feet KWH = Kilowatt-hours

MBBLS = Thousand Barrels MST = Thousand Short Tons

See footnote in Appendix B.

TABLE 39

LOUISIANA REFINERY STATISTICS

DATE	AVERAGE STOCK ON HAND (Barrels)	DAILY AVERAGE RUNS TO STILL (Barrels)	LICENSED REFINERIES
1982	12,905,202	1,716,091	31
1983	13,317,761	1,649,283	27
1984	13,182,207	1,720,172	25
1985	13,425,129	1,735,402	24
1986	13,391,258	1,901,450	23
1987	13,967,381	1,947,187	22
1988	14,295,591	1,946,861	21
1989	14,158,306	2,051,304	23
1990	13,783,012	2,045,697	23
1991	14,197,185	2,071,276	23
1992	14,331,412	2,090,248	22
1993	14,521,046	2,159,422	20
1994	15,126,534	2,150,403	19
1995	14,325,305	2,109,245	19
1996	14,462,108	2,252,573	19
1997	14,275,221	2,257,275	19
1998	14,965,117	2,312,239	19
1999	15,467,674	2,414,781	17
2000	14,818,774	2,334,842	16
2001	15,425,670	2,480,357	17
January	15,178,418	2,416,488	18 r
February	15,316,613	2,465,836	18 r
March	16,120,236	2,576,468	18 r
April	17,523,281	2,612,358	18 r
May	17,850,256	2,567,134	18 r
June	17,456,105	2,473,324	18 r
July	16,842,057	2,480,877	18 r
August	18,446,270	2,442,770	17 r
September	15,354,587	2,212,462	17 r
October	15,507,717	2,190,950	17 r
November	15,500,882	2,595,667	17
December	14,926,101	2,612,335	17
2002 Average	**16,335,210**	**2,470,556**	**18**
January	16,293,211	2,344,706	17
February	17,499,492	2,326,752	17
March	16,298,280	2,552,728	17
April	16,214,958	2,645,474	17
May	14,990,732	2,565,893	17
June	14,789,533	2,359,482	17
July	14,242,758	2,348,925	16
August	13,848,727	2,421,229	16
September	13,239,902	2,415,069	16
October	14,674,341 p	2,408,062 p	16 p
November	14,293,673 p	2,376,545 p	16 p
December			
2003 Average	**15,125,964**	**2,433,169**	**17**

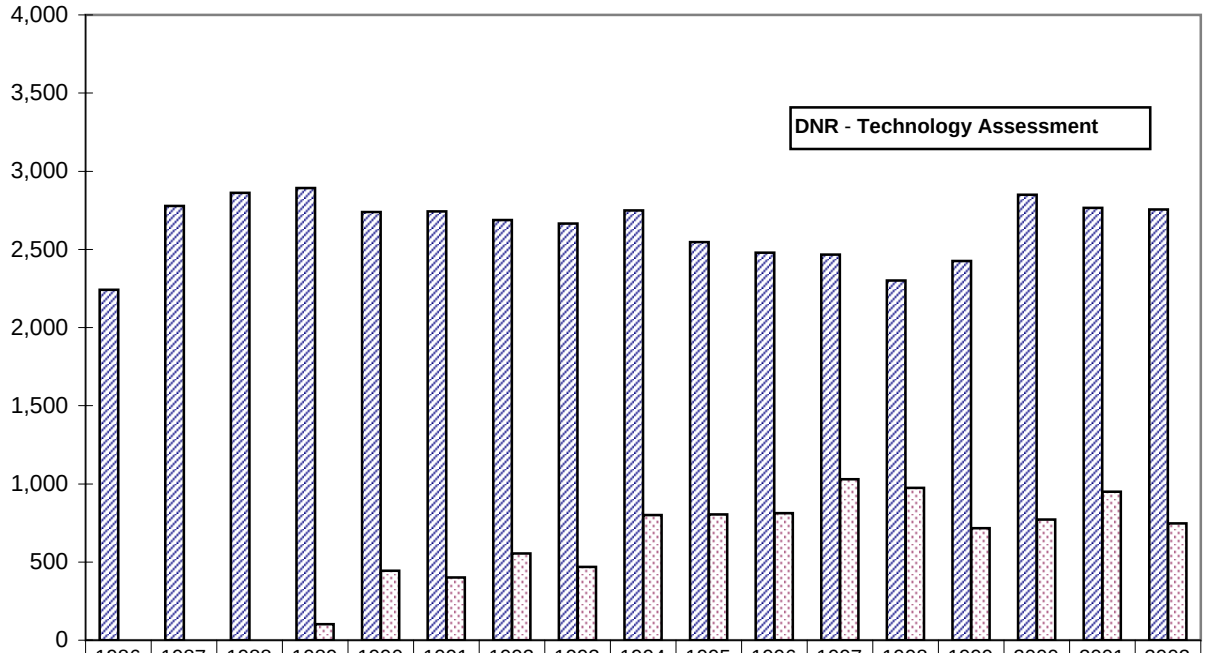
e Estimated r Revised p Preliminary

Exxon-Mobil Refinery - Baton Rouge

Figure 20

LOUISIANA LIGNITE PRODUCTION BY MINE SOURCE

(Thousand Tons Shipped)



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Dolet Hills	2,241	2,777	2,862	2,892	2,738	2,742	2,688	2,665	2,750	2,546	2,480	2,466	2,301	2,426	2,850	2,765	2,756
Oxbow	0	0	0	103	444	401	554	470	800	804	812	1,029	974	717	773	950	747
Total	2,241	2,777	2,862	2,995	3,182	3,143	3,242	3,135	3,550	3,350	3,292	3,495	3,275	3,143	3,622	3,715	3,503

* Projected

Table 40

LOUISIANA ELECTRIC UTILITIES NET ELECTRICITY GENERATION[14] BY FUEL TYPE

(Million KWH)

YEAR	COAL	LIGNITE	OIL	GAS	NUCLEAR	TOTAL
1961	0	0	23	12,605	0	12,628
1962	0	0	34	13,541	0	13,575
1963	0	0	37	14,808	0	14,845
1964	0	0	54	16,007	0	16,061
1965	0	0	26	17,819	0	17,845
1966	0	0	24	21,643	0	21,667
1967	0	0	20	23,132	0	23,152
1968	0	0	32	26,123	0	26,155
1969	0	0	26	32,301	0	32,327
1970	0	0	79	33,623	0	33,702
1971	0	0	N/A	N/A	0	37,118
1972	0	0	N/A	N/A	0	39,348
1973	0	0	14,353	36,351	0	40,704
1974	0	0	5,034	34,472	0	39,506
1975	0	0	3,257	35,967	0	39,224
1976	0	0	7,773	37,343	0	45,116
1977	0	0	13,255	35,196	0	48,451
1978	0	0	14,568	36,935	0	51,503
1979	0	0	8,259	38,396	0	46,655
1980	0	0	4,787	40,952	0	45,739
1981	1,529	0	2,634	39,947	0	44,110
1982	4,998	0	940	35,594	0	41,532
1983	8,377	0	356	28,311	0	37,044
1984	9,830	0	140	29,360	0	39,330
1985	13,968	0	100	27,736	2,457	44,261
1986	12,642	2,884	419	26,202	10,637	52,784
1987	12,176	2,926	60	23,823	12,324	51,309
1988	14,372	4,059	272	24,286	13,785	56,774
1989	14,227	3,854	298	21,900	12,391	52,670
1990	13,890	3,910	130	26,061	14,197	58,188
1991	14,786	4,126	45	24,245	13,956	57,158
1992	15,613	4,183	483	24,554	10,356	55,189
1993	15,794	3,572	1,838	23,751	14,398	59,353
1994	15,761	4,364	680	26,586	12,779	60,170
1995	14,632	4,321	49	30,867	15,686	65,555
1996	14,630	4,002	273	23,972	15,765	58,642
1997	16,453	4,499	645	26,580	13,511	61,688
1998	16,131	4,631	600	28,318	16,428	66,107
1999	16,386	4,780	397	30,162	13,112	64,837
2000	8,178 r	6,303 r	625 r	26,696 r	15,796	57,597 r
2001	6,164 * r	4,753 * r	1,722 r	20,402 r	17,366	50,378 r
2002	6,729 * e	5,188 * e	62 e	21,628 e	17,305 e	50,479 e

e Estimated r Revised p Preliminary

* Partial data, Big Cajun 1 & 2 did not report.

See footnotes on Appendix B

APPENDICES

The Sol of New Orleans II
The University of New Orleans's solar powered car

Appendix A

Abbreviations

BCF	Billion Cubic Feet
BTU	British Thermal Unit
DNR	Louisiana Department of Natural Resources
DOE	United States Department of Energy
DOI	United States Department of the Interior
EIA	Energy Information Administration, DOE
FOB	Free on Board
KWH	Kilowatt-hours
MBBLS	Thousand Barrels
MCF	Thousand Cubic Feet
MMS	Minerals Management Service, DOI
MST	Thousand Short Tons
NGC	Natural Gas Clearinghouse
OCS	Outer Continental Shelf
OPEC	Organization of Petroleum Exporting Countries
RAC	Refinery Acquisition Costs
SLS	South Louisiana Sweet Crude Oil
SPR	Strategic Petroleum Reserve
TBTU	Trillion BTU
TCF	Trillion Cubic Feet

State Abbreviations Used in the Louisiana Energy Facts Annual

AL	Alabama	MS	Mississippi
AK	Alaska	ND	North Dakota
CA	California	NM	New Mexico
CO	Colorado	OK	Oklahoma
IL	Illinois	TX	Texas
KS	Kansas	UT	Utah
LA	Louisiana	WY	Wyoming
MI	Michigan		

Appendix B

Data Sources

Unless otherwise specified, data is from the Louisiana Department of Natural Resources.

1. EMPLOYMENT AND TOTAL WAGES PAID BY EMPLOYERS SUBJECT TO LOUISIANA EMPLOYMENT SECURITY LAW, Baton Rouge, LA: Louisiana Department of Labor, Office of Employment Security, Research and Statistics Unit.

2. MONTHLY ENERGY REVIEW and ANNUAL ENERGY REVIEW, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

3. NATURAL GAS MONTHLY and NATURAL GAS ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

4. Baker Hughes from OIL & GAS JOURNAL, Tulsa, OK: Penn Well Publishing Co.

5. October 2002 to Present, NATURAL GAS WEEK, Washington, D.C.: Energy Intelligence Group. Prior, SURVEY OF DOMESTIC SPOT MARKET PRICES, Houston, TX: Dynegy Inc. (Formerly Natural Gas Clearinghouse).

6. PETROLEUM MARKETING MONTHLY and PETROLEUM MARKETING ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

7. PETROLEUM SUPPLY MONTHLY and PETROLEUM SUPPLY ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

8. SEVERANCE TAX, Baton Rouge, LA: Louisiana Department of Revenue and Taxation, Severance Tax Section.

9. U.S. CRUDE OIL, NATURAL GAS and NATURAL GAS LIQUIDS RESERVES, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

10. THE WALL STREET JOURNAL, Gulf Coast Edition, Beaumont, TX: Dow Jones and Company.

11. STATE ENERGY DATA REPORT, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

12. FEDERAL OFFSHORE STATISTICS, Washington, D.C.: U.S. Department of the Interior, Minerals Management Service.

13. MINERAL REVENUE, Washington, D.C.: U.S. Department of the Interior, Minerals Management Service, Royalty Management Program.

14. ELECTRIC POWER MONTHLY, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

Appendix C

Glossary

Bonus. A cash payment by the lessee for the execution of a lease. A lease is a contract that gives a lessee the right: (a) to search for minerals, (b) to develop the surface for extraction, and (c) to produce minerals within the area covered by the contract.

Casinghead Gas. All natural gas released from oil during the production of oil from underground reservoirs.

City-Gate. A point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system.

Commercial Consumption. Gas used by non-manufacturing organizations such as hotels, restaurants, retail stores, laundries, and other service enterprises. This also includes gas used by local, state, and federal agencies engaged in non-manufacturing activities.

Condensate. (See Lease Condensate).

Crude Oil. A mixture of hydrocarbons that existed in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

CRUDE OIL PRICES

Domestic Wellhead. The average price at which all domestic crude oil is first purchased.

Imports FOB. The price actually charged at the producing country's port of loading. It is the responsibility of the buyer to arrange for transportation and insurance.

Imports Landed. The dollar per barrel price of crude oil at the port of discharge. It includes crude oil landed in the U.S. and U.S. company-owned refineries in the Caribbean, but excludes crude oil from countries that export only small amounts to the United States. The landed price does not include charges incurred at the port of discharge.

Imports OPEC FOB. The average price actually charged by OPEC at their country's port of loading. This price does not include transportation or insurance.

OCS Gulf. The average price at which all offshore, Outer Continental Shelf, Central Gulf region crude oil is first purchased as reported by the U.S. Department of Energy, Energy Information Administration.

Refinery Acquisition Costs (RAC). The average price paid by refiners in the U.S. for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners.

a) **Domestic**. The average price of crude oil produced in the United States or from the Outer Continental Shelf of the U.S.

b**) Imports**. The average price of any crude oil not reported as domestic.

Refinery Posted. The average price from a survey of selected refiners' postings for South Louisiana Sweet (SLS) crude, which is effective at the middle and at the end of the month.

Severance Tax. The average wellhead price calculated from oil severance taxes paid to the Louisiana Department of Revenue and Taxation.

Spot Market. The spot market crude oil price is the average of daily South Louisiana Sweet (SLS) crude price futures traded in the month and usually includes transportation from the producing field to the St. James, Louisiana terminal.

State. The average price at which all Louisiana crude oil, excluding Louisiana OCS, is first purchased as reported in a survey by the U.S. Department of Energy, Energy Information Administration.

State Royalty. The average wellhead price from its royalty share of oil produced in state lands or water bottoms. The price is calculated by the ratio of received oil royalty gross revenue divided by royalty volume share reported to the Louisiana Department of Natural Resources.

Developmental Well. Wells drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Dry Gas. (See Natural Gas, "Dry").

Dry Hole. An exploratory or developmental well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Electric Utility Consumption. Gas used as fuel in electric utility plants.

Exploratory Well. A well drilled to find and produce oil or gas in an unproved area, to find a new reservoir in an old field, or to extend the limits of a known oil or gas reservoir.

Exports. Crude oil or natural gas delivered out of the Continental United States and Alaska to foreign countries.

Extraction Loss. The reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Federal Offshore or Federal OCS. (See Louisiana OCS)

FOB Price (Free on board). The price actually charged at the producing country's port of loading. The reported price includes deductions for any rebates and discounts or additions of premiums where applicable and should be the actual price paid with no adjustment for credit terms.

Gate. (See City-Gate)

Gross Revenue. Amount of money received from a purchaser, including charges for field gathering, transportation from wellhead to purchaser receiving terminal, and state production severance tax.

Gross Withdrawals. (See Natural Gas, Gross Withdrawals)

Imports. Crude oil or natural gas received in the Continental United States, Alaska, and Hawaii from foreign countries.

Industrial Consumption. Natural gas used by manufacturing and mining establishments for heat, power, and chemical feedstock.

Lease Condensate. A mixture consisting primarily of pentane and heavier hydrocarbons that is recovered as a liquid from natural gas in lease or field separation facilities, exclusive of products recovered at natural gas processing plants or facilities.

Lease Separator. A facility installed at the surface for the purpose of: (a) separating gases from produced crude oil and water at the temperature and pressure conditions of the separator, and/or (b) separating gases from that portion of the produced natural gas stream which liquefies at the temperature and pressure conditions of the separator.

Louisiana OCS. Submerged lands under federal regulatory jurisdiction that comprise the Continental Margin or Outer Continental Shelf adjacent to Louisiana and seaward of the Louisiana Offshore region.

Louisiana Offshore. A 3-mile strip of submerged lands under state regulatory jurisdiction located between the State coast line and the OCS region.

Louisiana Onshore. Region defined by the State boundary and the coast line.

Major Pipeline Company. A company whose combined sales for resale, and gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Marketed Production. (See Natural Gas, Marketed Production)

Natural Gas. A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The principal hydrocarbons usually contained in the mixture are methane, ethane, propane, butanes and pentanes. Typical non-hydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide and nitrogen. Under reservoir conditions, natural gas and the liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil, and are not distinguishable at the time as separated substances.

Natural Gas, "Dry". The actual or calculated volume of natural gas which remains after: (a) the liquefiable hydrocarbon portion has been removed from the gas stream, and (b) any volumes of non-hydrocarbon gases have been removed where they occur in sufficient quantity to render the gas unmarketable.

Natural Gas, Gross Withdrawals. Full well-stream volume, including all natural gas plant liquids and all non-hydrocarbon gases, but excluding lease condensate.

Natural Gas Liquids. Lease condensate plus natural gas plant liquids.

Natural Gas, Marketed Production. Gross withdrawals less gas used for repressurizing, quantities vented and flared, and non-hydrocarbon gases removed in treating or processing operations. It includes all quantities of gas used in field and processing operations.

Natural Gas, OCS Gas. OCS gas volume is as reported. Most is "dry" gas, though some is "wet" gas.

Natural Gas Plant Liquids. Those hydrocarbons remaining in a natural gas stream after field separation and later separated and recovered at a natural gas processing plant or cycling plant through the processes of absorption, adsorption, condensation, fractionation or other methods. Generally such liquids consist of propane and heavier hydrocarbons and are commonly referred to as condensate, natural gasoline, or liquefied petroleum gases. Where hydrocarbon components lighter than propane (e.g., ethane) are recovered as liquids, these components are included with natural gas liquids.

NATURAL GAS PRICES

Henry Hub Settled NYMEX The last trading day price for the month before delivery posted in the New York Mercantile Exchange for natural gas at Henry Hub.

Spot Market The average price of natural gas paid at the regional spot market receipt points or zones as reported by the Energy Intelligence Group's NATURAL GAS WEEK. The data are a volume weighted average and reflect market activity information gathered during the entire month before the publication date, regardless of delivery date. The data are not an arbitrary weighting by production zone, but a true deal-by-deal volume weighting of prices gathered. Data prior to October 2002 were from Dynegy's survey of the domestic natural gas spot market receipt points or zones located in Louisiana. The new and old points or zones are as follows:

NATURAL GAS PIPELINES AND SALES POINTS FOR PRICES

Dynegy	**Natural Gas Week**
ANR Eunice, LA	ANR Patterson, LA
COLUMBIA GULF Average Louisiana onshore laterals	COLUMBIA GULF TRANSMISSION Co. Average of Erath, Rayne, and Texaco Henry Plant in Louisiana
LOUISIANA INTRASTATES Average of Faustina, LIG, Bridgeline, and Monterrey pipelines	LOUISIANA INTRASTATES Average of LIG, Bridgeline, LRC, and Acadian pipelines
SOUTHERN NATURAL South Louisiana	SOUTHERN NATURAL Saint Mary Parish, LA
TENNESSEE GAS Vinton, LA	TENNESSEE GAS South Louisiana
TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)	TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)
GULF SOUTH PIPELINE	TRUNKLINE GAS Co.

OCS. The average wellhead price calculated from sales and volumes from Louisiana OCS natural gas as reported by the U.S. Department of Interior, Minerals Management Service.

State Royalty. The average wellhead price calculated from revenue received and volumes reported to the Louisiana Department of Natural Resources.

State Wells. The average price of gas sold at Louisiana wellhead. This price includes: (a) value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) State production, severance, and/or similar charges.

Major Pipelines Purchases.

a) **Domestic Producers**. The average price of natural gas produced in the United States or from the Outer Continental Shelf of the U.S.

b**) Foreign Imports**. The average price of any natural gas not reported as domestic.

Wellhead. The wellhead sales price including: (a) value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) State production, severance, and/or similar charges.

Natural Gas, Wet After Lease Separation. The volume of natural gas, if any, remaining after: (a) removal of lease condensate in lease and/or field separation facilities, and (b) exclusion of non-hydrocarbon gases where they occur in sufficient quantities to render the gas unmarketable. Also excludes gas returned to formation in pressure maintenance and secondary recovery projects and gas returned to earth from cycling and/or gasoline plants. Natural gas liquids may be recovered from volumes of natural gas, wet after lease separation, at natural gas processing plants.

Organization of Petroleum Exporting Countries (OPEC). Countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Outer Continental Shelf (OCS). All submerged lands that comprise the Continental Margin adjacent to the U.S. and seaward of the state offshore lands. Production in the OCS is under federal regulatory jurisdiction and ownership.

Processing Plant. A facility designed to recover natural gas liquids from a stream of natural gas which may or may not have passed through lease separators and/or field separation facilities. Another function of natural gas processing plants is to control the quality of the processed natural gas stream.

Proved Reserves of Crude Oil. As of December 31 of the report year, the estimated quantities of all liquids defined as crude oil which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of crude oil in underground storage are not considered proved reserves.

Proved Reserves of Lease Condensate. The volumes of lease condensate as of December 31 of the report year expected to be recovered in future years in conjunction with the production of proved reserves of natural gas as of December 31 of the report year.

Proved Reserves of Natural Gas. The estimated quantities of natural gas as of December 31 of the report year which analysis of geologic and engineering data demonstrates with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of natural gas in underground storage are not considered proved reserves.

Proved Reserves of Natural Gas Liquids. The volumes of natural gas liquids (including lease condensate) as of December 31 of the report year, which analysis of geologic and engineering data demonstrates with reasonable certainty to be separable in the future from proved natural gas reserves under existing economic and operating conditions.

Rental. Money paid by the lessee to maintain the lease after the first year if it is not producing. A lease is considered expired when rental is not paid on time on an unproductive lease.

Reservoir. A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system. Reservoirs are considered proved if economic producibility is supported by actual production or conclusive formation tests (drill stem or wire line), or if economic producibility is supported by core analysis and/or electric or other log interpretations. The area of a gas or oil reservoir considered proved includes: (a) that portion delineated by drilling and defined by gas-oil and/or gas-water contacts, if any; and (b) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data.

Residential Consumption. Gas used in private dwellings, including apartments, for heating, cooking, water heating, and other household uses.

Royalty (Including Royalty Override) Interest. Those interests which entitle their owner(s) to a share of the mineral production from a property or to a share of the proceeds from there. These interests do not contain the rights and obligations of operating the property and normally do not bear any of the costs of exploration, development, or operation of the property.

Royalty Override (Or Overriding Royalty). An interest in oil and gas produced at the surface free of any cost of production. It is royalty in addition to the usual landowner's royalty reserved to the lessor. The Layman's Guide to Oil & Gas by Brown & Miller defines overriding royalty as a percentage of all revenue earned by a well and carrying no cost obligation.

State Offshore. (See Louisiana Offshore**).**

Wet After Lease Separation. (See Natural Gas, Wet After Lease Separation).

Wildcat Well . (See Developmental Well).

Appendix D

Louisiana Gas Volume at 14.73 psia

Page

Appendix D-1

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas, Excluding OCS

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1982	381,956,386 r	1,548,825,526 r	362,541,475 r	2,293,323,387 r
1983	367,415,635 r	1,330,669,947 r	323,523,633 r	2,021,609,215 r
1984	389,939,125 r	1,400,621,534 r	320,286,543 r	2,110,847,202 r
1985	358,032,963 r	1,274,608,554 r	255,072,018 r	1,887,713,536 r
1986	370,901,958 r	1,240,893,984 r	251,033,103 r	1,862,829,044 r
1987	363,802,599 r	1,175,490,485 r	232,692,536 r	1,771,985,620 r
1988	382,100,449 r	1,192,889,101 r	218,544,278 r	1,793,533,828 r
1989	386,783,455 r	1,153,294,096 r	207,381,469 r	1,747,459,020 r
1990	398,236,494 r	1,160,425,829 r	185,678,416 r	1,744,340,739 r
1991	389,623,599 r	1,139,243,110 r	152,895,972 r	1,681,762,681 r
1992	379,671,005 r	1,146,893,542 r	149,933,256 r	1,676,497,803 r
1993	360,897,088 r	1,126,950,007 r	156,919,403 r	1,644,766,497 r
1994	361,146,486 r	1,048,229,785 r	158,315,609 r	1,567,691,880 r
1995	370,709,558 r	1,028,500,599 r	167,742,330 r	1,566,952,486 r
1996	425,506,052 r	1,048,009,685 r	189,331,696 r	1,662,847,432 r
1997	450,873,442 r	995,341,920 r	189,565,415 r	1,635,780,777 r
1998	446,138,374 r	979,584,537 r	183,246,642 r	1,608,969,552 r
1999	402,085,989 r	928,879,872 r	152,594,840 r	1,483,560,702 r
2000	395,857,269 r	945,959,335 r	152,498,651 r	1,494,315,254 r
2001	398,313,842 r	973,016,534 r	153,871,183 r	1,525,201,559 r
January	31,148,432 r	76,396,199 r	11,915,659 r	119,460,291 r
February	28,529,608 r	70,126,591 r	10,906,488 r	109,562,688 r
March	31,467,444 r	77,537,049 r	12,031,321 r	121,035,814 r
April	30,039,244 r	74,206,791 r	11,489,019 r	115,735,053 r
May	31,474,373 r	77,957,824 r	12,043,227 r	121,475,424 r
June	30,697,455 r	76,232,301 r	11,745,180 r	118,674,936 r
July	31,173,347 r	77,608,087 r	11,922,711 r	120,704,145 r
August	31,279,970	78,082,946	11,967,576	121,330,492
September	28,704,031	71,837,625	10,975,965	111,517,622
October	26,689,214	66,972,484	10,201,238	103,862,936
November	28,571,808	71,922,722	10,950,866	111,445,396
December	29,647,603	73,407,136	11,043,781	114,098,519
2002 Total	**359,422,530**	**892,287,755**	**137,193,030**	**1,388,903,315**
January	29,796,689	74,166,333	11,175,552	115,138,574
February	27,402,429	68,378,596	10,286,316	106,067,341
March	30,847,275	77,194,060	11,589,724	119,631,059
April	29,933,649	75,104,135	11,258,599	116,296,383
May	30,012,935	76,188,336	11,407,138	117,608,409
June	28,703,144	73,051,724	10,925,152	112,680,020
July	29,078,676	74,201,190	11,080,744	114,360,610
August	27,967,078	71,465,755	10,667,877	110,100,710
September	27,791,077	71,202,127	10,613,713	109,606,916
October	27,615,466	70,938,803	10,559,951	109,114,220
November	27,439,828 e	70,675,483 e	10,506,155 e	108,621,466 e
December	27,263,537 e	70,411,642 e	10,451,692 e	108,126,871 e
2003 Total	**343,851,783 e**	**872,978,184 e**	**130,522,613 e**	**1,347,352,579 e**

e Estimated r Revised p Preliminary

* See Table 11 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-2

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

	ONSHORE	OFFSHORE		TOTAL
DATE		**State**	**Federal OCS[12]**	
1982	1,930,781,912 r	362,541,475 r	4,106,494,590	6,399,817,977 r
1983	1,698,085,582 r	323,523,633 r	3,803,740,050	5,825,349,265 r
1984	1,790,560,659 r	320,286,543 r	3,173,892,354	5,284,739,556 r
1985	1,632,641,518 r	255,072,018 r	3,578,740,570	5,466,454,106 r
1986	1,611,795,941 r	251,033,103 r	3,116,884,490	4,979,713,534 r
1987	1,539,293,084 r	232,692,536 r	2,927,832,264	4,699,817,884 r
1988	1,574,989,550 r	218,544,278 r	3,180,107,195	4,973,641,023 r
1989	1,540,077,551 r	207,381,469 r	3,096,881,628	4,844,340,648 r
1990	1,558,662,324 r	185,678,416 r	3,006,576,061	4,750,916,800 r
1991	1,528,866,709 r	152,895,972 r	3,706,324,044	5,388,086,725 r
1992	1,526,564,547 r	149,933,256 r	3,289,968,602	4,966,466,405 r
1993	1,487,847,094 r	156,919,403 r	3,338,101,447	4,982,867,944 r
1994	1,409,376,270 r	158,315,609 r	3,386,808,653	4,954,500,533 r
1995	1,399,210,157 r	167,742,330 r	3,492,406,762	5,059,359,248 r
1996	1,473,515,737 r	189,331,696 r	3,636,067,997	5,298,915,429 r
1997	1,446,215,363 r	189,565,415 r	3,898,234,094	5,534,014,871 r
1998	1,425,722,911 r	183,246,642 r	3,913,885,048	5,522,854,600 r
1999	1,330,965,862 r	152,594,840 r	3,789,387,595	5,272,948,297 r
2000	1,341,816,603 r	152,498,651 r	3,987,022,817	5,481,338,071 r
2001	1,371,330,376 r	153,871,183 r	3,663,809,133	5,189,010,692 r
January	107,544,631 r	11,915,659 r	272,670,577 p	392,130,867 p r
February	98,656,199 r	10,906,488 r	242,827,946 p	352,390,634 p r
March	109,004,493 r	12,031,321 r	288,370,334 p	409,406,148 p r
April	104,246,035 r	11,489,019 r	282,684,272 p	398,419,326 p r
May	109,432,197 r	12,043,227 r	284,323,184 p	405,798,608 p r
June	106,929,756 r	11,745,180 r	301,970,600 p	420,645,536 p r
July	108,781,434 r	11,922,711 r	307,562,377 p	428,266,522 p r
August	109,362,916	11,967,576	321,909,161 p	443,239,653 p
September	100,541,657	10,975,965	252,902,541 p	364,420,162 p
October	93,661,698	10,201,238	247,305,339 p	351,168,275 p
November	100,494,529	10,950,866	312,927,361 p	424,372,757 p
December	103,054,738	11,043,781	299,447,413 p	413,545,932 p
2002 Total	**1,251,710,285**	**137,193,030**	**3,414,901,105 p**	**4,803,804,420 p**
January	103,963,022	11,175,552	290,000,000 e	405,138,574 e
February	95,781,025	10,286,316	251,000,000 e	357,067,341 e
March	108,041,335	11,589,724	289,357,805 e	408,988,865 e
April	105,037,784	11,258,599	282,220,236 e	398,516,618 e
May	106,201,270	11,407,138	288,033,980 e	405,642,389 e
June	101,754,868	10,925,152	272,742,997 e	385,423,017 e
July	103,279,866	11,080,744		114,360,610
August	99,432,833	10,667,877		110,100,710
September	98,993,203	10,613,713		109,606,916
October	98,554,269	10,559,951		109,114,220
November	98,115,311 e	10,506,155 e		108,621,466 e
December	97,675,179 e	10,451,692 e		108,126,871 e
2003 Total	**1,216,829,967 e**	**130,522,613 e**	**1,673,355,018**	**3,020,707,597 e**

e Estimated r Revised p Preliminary

* See Table 12 corresponding volumes at 15.025 psia and footnote in Appendix B.

NOTE: The 2003 Federal OCS production is estimated from the marketed production

Appendix D-3

LOUISIANA MARKETED AND DRY GAS PRODUCTION

(Billion Cubic Feet (BCF) at 14.73 psia and 60 degrees Fahrenheit)*

	MARKETED			EXTRACTION	
DATE	State	OCS	Total[3]	LOSS[3]	DRY[3]
1960	2,695 e	270 [12]	2,966 e	N/A	N/A
1961	2,785 e	315 [12]	3,100 e	N/A	N/A
1962	3,055 e	447 [12]	3,502 e	N/A	N/A
1963	3,317 e	559 [12]	3,876 e	N/A	N/A
1964	3,520 e	616 [12]	4,136 e	N/A	N/A
1965	3,731 e	639 [12]	4,370 e	N/A	N/A
1966	4,145 e	956 [12]	5,101 e	N/A	N/A
1967	4,640	1,076 [12]	5,717	115	5,602
1968	5,017	1,399 [12]	6,416	140	6,276
1969	5,424	1,804 [12]	7,228	179	7,049
1970	5,538	2,250 [12]	7,788	193	7,595
1971	5,474	2,608 [12]	8,082	195	7,887
1972	5,120	2,853 [12]	7,973	198	7,775
1973	5,217	3,025 [12]	8,242	207	8,036
1974	4,438	3,316 [12]	7,754	194	7,559
1975	3,792	3,299 [12]	7,091	190	6,901
1976	3,542	3,465 [12]	7,007	173	6,834
1977	3,604	3,611 [12]	7,215	166	7,049
1978	3,368	4,108 [12]	7,476	162	7,315
1979	3,149	4,117 [12]	7,266	166	7,101
1980	2,966	3,974 [12]	6,940	142	6,798
1981	2,715	4,065 [12]	6,780	142	6,638
1982	2,406	3,766 [12]	6,172	129	6,043
1983	2,190	3,142 [12]	5,332	124	5,208
1984	2,282	3,543 [12]	5,825	133	5,693
1985	1,928	3,086 [12]	5,014	118	4,896
1986	1,997	2,899 [12]	4,895	116	4,780
1987	1,974	3,148 [12]	5,123	125	4,998
1988	2,114	3,066 [12]	5,180	120	5,060
1989	2,102	2,977 [12]	5,078	121	4,957
1990	1,573	3,669 [12]	5,242	119	5,123
1991	1,777	3,257 [12]	5,034	129	4,905
1992	1,649	3,265 [3]	4,914	133	4,782
1993	1,674	3,317 [3]	4,991	130	4,861
1994	1,691	3,479 [3]	5,170	129	5,041
1995	1,683	3,425 [3]	5,108	146	4,962
1996	1,628	3,662 [3]	5,290	140	5,150
1997	1,505 [3]	3,725 [3]	5,230	150	5,080
1998	1,552 [3]	3,725 [3]	5,277	145	5,133
1999	1,567 [3]	3,709 [3]	5,276	165	5,111
2000	1,455 [3]	3,638 [3]	5,093	165	4,928
2001	1,503 [3]	3,747 [3]	5,249	153	5,097
2002	1,538 p	3,811 p	5,349 p	175 p	5,174

e Estimated r Revised p Preliminary

* See Table 13 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-4

UNITED STATES OCS GAS PRODUCTION[12]

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
PRIOR	157,485,180	0	0	157,485,180
1956	82,892,538	0	0	82,892,538
1957	82,568,807	4,797	0	82,573,604
1958	127,692,848	0	0	127,692,848
1959	207,156,296	0	0	207,156,296
1960	273,034,451	0	0	273,034,451
1961	318,280,095	0	0	318,280,095
1962	451,952,659	0	0	451,952,659
1963	564,352,606	0	0	564,352,606
1964	621,731,438	0	0	621,731,438
1965	645,589,469	0	0	645,589,469
1966	965,387,849	42,059,386	0	1,007,447,235
1967	1,087,262,804	99,952,946	0	1,187,215,750
1968	1,413,467,606	109,910,787	799,685	1,524,178,078
1969	1,822,544,142	127,096,982	4,845,851	1,954,486,975
1970	2,273,147,040	133,300,404	12,229,147	2,418,676,591
1971	2,634,014,031	127,357,908	15,671,479	2,777,043,418
1972	2,881,364,733	147,156,459	10,033,581	3,038,554,773
1973	3,055,628,236	148,673,637	7,286,549	3,211,588,422
1974	3,349,170,864	159,979,401	5,573,642	3,514,723,907
1975	3,332,169,057	122,572,764	3,951,633	3,458,693,454
1976	3,499,865,900	92,582,425	3,475,201	3,595,923,526
1977	3,647,513,674	86,943,285	3,289,963	3,737,746,922
1978	4,149,731,136	231,857,450	3,472,292	4,385,060,878
1979	4,158,521,710	511,590,607	2,866,822	4,672,979,139
1980	4,013,707,434	624,642,526	3,107,023	4,641,456,983
1981	4,106,494,590	730,275,831	12,766,307	4,849,536,728
1982	3,803,740,050	858,020,298	17,750,924	4,679,511,272
1983	3,173,892,354	850,817,211	16,024,292	4,040,733,857
1984	3,578,740,570	931,293,582	27,806,899	4,537,841,051
1985	3,116,884,490	834,926,523	49,164,213	4,000,975,226
1986	2,927,832,264	978,370,552	42,689,021	3,948,891,837
1987	3,180,107,195	1,204,488,337	40,986,158	4,425,581,690
1988	3,096,881,628	1,178,422,561	34,570,638	4,309,874,827
1989	3,006,576,061	1,165,112,953	28,574,912	4,200,263,926
1990	3,706,324,044	1,348,075,361	38,531,764	5,092,931,169
1991	3,289,968,602	1,184,936,494	40,626,577	4,515,531,673
1992	3,338,101,447	1,239,389,547	40,873,660	4,685,644,725
1993	3,386,808,653	1,027,937,755	42,082,090	4,533,389,731
1994	3,492,406,762	1,014,204,135	41,679,064	4,657,017,829
1995	3,636,067,997	908,520,050	36,425,501	4,692,270,825
1996	3,898,234,094	972,873,759	37,822,941	5,024,420,807
1997	3,913,885,048	965,334,787	40,722,084	5,076,996,337
1998	3,789,387,595	867,606,779	26,431,191	4,835,387,697
1999	3,987,022,817	814,124,878	37,261,450	4,992,363,948
2000	3,661,353,702 r	865,548,000 r	36,712,196 r	4,673,123,023 r
2001	3,959,435,998 p	601,937,028 p	41,266,568 p	4,712,026,562 p
2002	N/A	N/A	N/A	4,433,827,749 p

e Estimated r Revised p Preliminary

* See Table 15 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-5

UNITED STATES NATURAL GAS AND CASINGHEAD GAS PRODUCTION[3]

(Billion Cubic Feet (BCF) at 14.73 psia and 60 degrees Fahrenheit)*

DATE	GROSS	WET AFTER LEASE SEPARATION	MARKETED	DRY	GROSS IMPORTS
1982	20,272	18,675	18,582	17,820	933
1983	18,659	16,979	16,884	16,094	918
1984	20,267	18,412	18,304	17,466	843
1985	19,607	17,365	17,270	16,454	950
1986	19,131	16,956	16,859	16,059	750
1987	20,140	17,557	17,433	16,621	993
1988	20,999	18,061	17,918	17,103	1,294
1989	21,074	18,237	18,095	17,311	1,382
1990	21,523	18,744	18,594	17,810	1,532
1991	21,750	18,702	18,532	17,698	1,773
1992	22,132	18,879	18,712	17,840	2,138
1993	22,725	19,209	18,982	18,095	2,350
1994	23,581	19,938	19,710	18,821	2,624
1995	23,743 r	19,790 r	19,506 r	18,598 r	2,841 r
1996	24,114 r	20,084 r	19,812 r	18,854 r	2,937 r
1997	24,213 r	20,122 r	19,865 r	18,902 r	2,994 r
1998	24,108 r	20,064 r	19,961 r	19,024 r	3,152 r
1999	23,823 r	19,915 r	19,805 r	18,832 r	3,586 r
2000	24,174 r	20,289 r	20,198 r	19,182 r	3,782 r
2001	24,476 r	20,716 r	20,630 r	19,676 r	3,977 r
January	2,066 r	1,706 r	1,698 r	1,620 r	343 r
February	1,857 r	1,523 r	1,517 r	1,447 r	305 r
March	2,077 r	1,711 r	1,704 r	1,625 r	332 r
April	1,985 r	1,641 r	1,634 r	1,558 r	317 r
May	2,063 r	1,713 r	1,706 r	1,628 r	316 r
June	2,002 r	1,670 r	1,663 r	1,586 r	317 r
July	2,040 r	1,728 r	1,720 r	1,641 r	344 r
August	2,039	1,709	1,702	1,624	355
September	1,901	1,593	1,586	1,513	335
October	1,985	1,636	1,629	1,554	343
November	2,010	1,692	1,685	1,608	330
December	2,104	1,731	1,724	1,644	369
2002 Total	**24,130**	**20,053**	**19,969**	**19,047**	**4,008**
January	2,103	1,745	1,738	1,658	345
February	1,922	1,582	1,576	1,503	297
March	2,131	1,774	1,767	1,685	312
April	2,021	1,685	1,678	1,601	294
May	2,066	1,735	1,728	1,648	305
June	1,997	1,670	1,664	1,587	283
July	2,032	1,700	1,694	1,616	344
August	N/A	N/A	N/A	N/A	336
September	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2003 Total	**14,272**	**11,892**	**11,846**	**11,299**	**2,518**

e Estimated r Revised p Preliminary

* See Table 16 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix E

Louisiana Energy Briefs and Topics

AMERICA'S WETLAND ENERGY CORRIDOR TO THE NATION

Parts 5-7 of this series will be published in the next report.

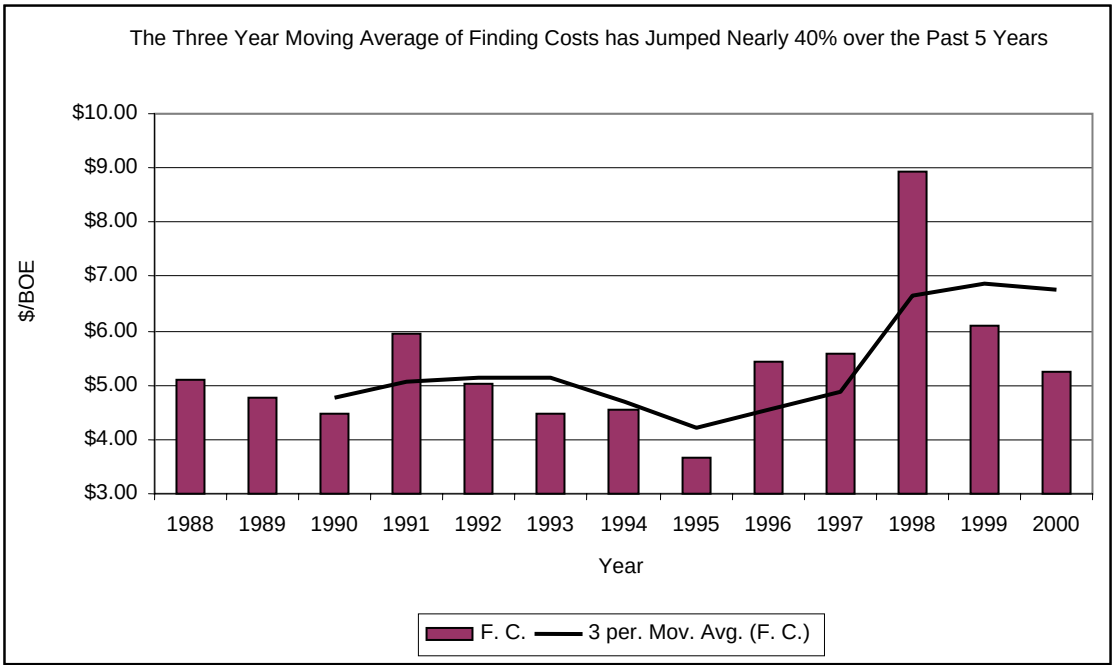
Calumet Refinery 1996

Originally Published in January 2003 Louisiana Energy Facts

FINDING COST INCREASE CHALLENGES E&P SECTOR

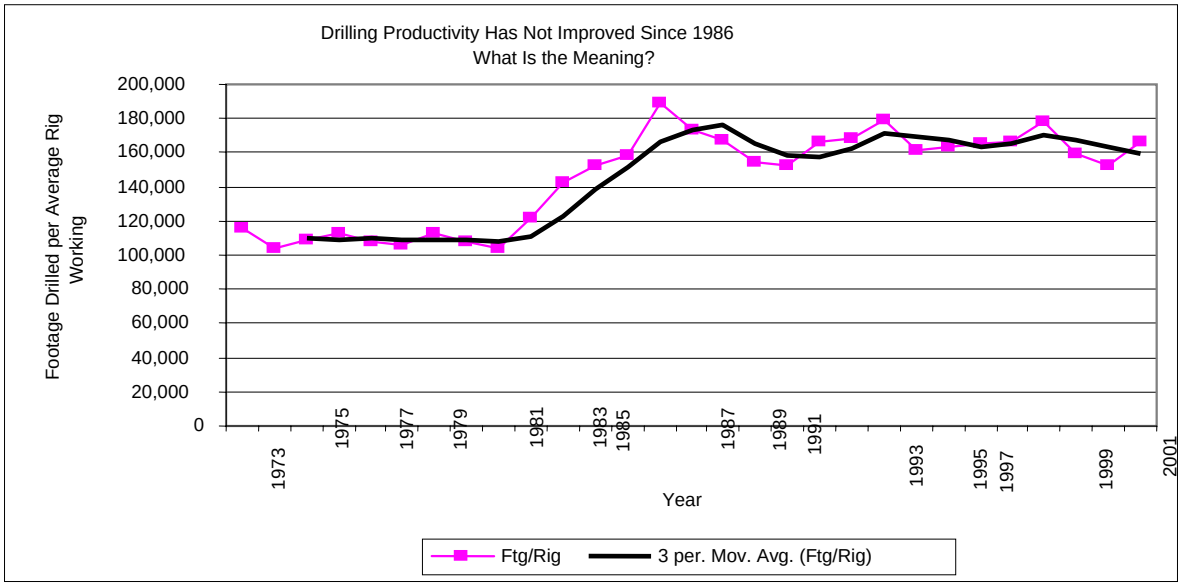
By Bob Sprehe, Energy Economist

For an exploration and production (E&P) company, finding costs are those costs associated with adding to the company's oil and gas reserves. These costs include surface costs and subsurface costs. The Energy Information Administration (EIA), through its Financial Reporting Service, keeps track of the cost elements associated with calculating an E&P company's finding costs. To calculate finding cost it is necessary to convert oil and natural gas reserves to a common unit, in this case Btus. Then the Btus can be converted back to a common denominator, barrels oil equivalent. The costs are accumulated and divided by BOE to arrive at an annual cost per BOE, expressed $/BOE. It is customary to average these costs over a 3 year period to eliminate annual volatility.

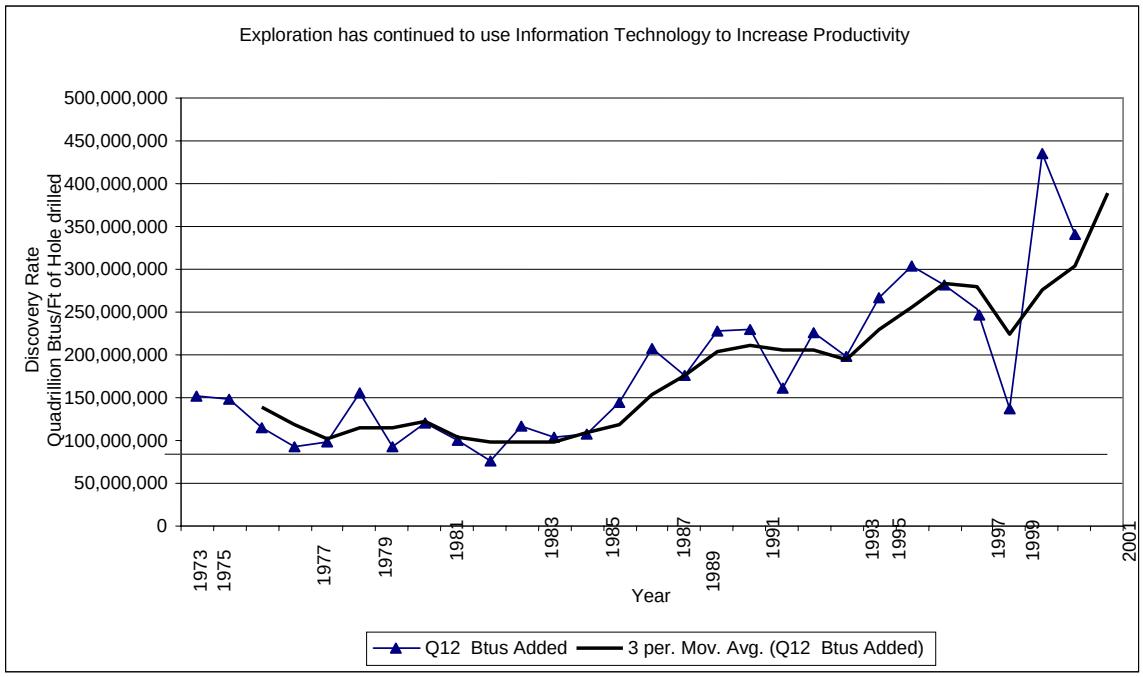


To analyze why costs have jumped in the recent past it is useful to examine two broader sets of productivity data: Physical Drilling Productivity and Knowledge Based Discovery Rate Productivity.

Despite sharing best practices, benchmarking, and the introduction of new technology, drilling productivity, as measured by footage drilled per rig per year, has remained relatively constant for the past 14 years (1987-2001).



Knowledge based geophysical and geological technology delivers a steady increase in industry productivity as measured by discovery rate per foot of hole drilled



While many factors go into the details of finding cost and why such costs might be rising, it should be noted that well drilling operations are conducted under highly prescriptive rules and regulations which add to costs; whereas seismic acquisition and reservoir characterization, and knowledge based activities are not. This may help explain why rig footage drilled productivity is flat while discovery rates are improving.

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Ethanol Industry Update

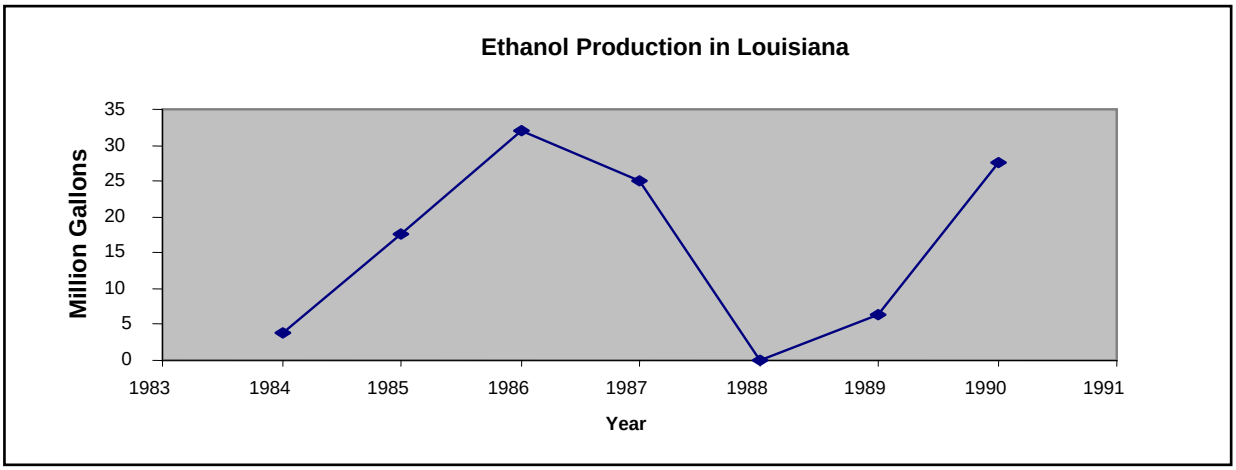
By Bryan Crouch, P.E.

At the state level, ethanol production has been dormant since 1990, but should soon be producing again. BC International's ethanol plant conversion in Jennings appears to be back on track after struggling to obtain financing for the project. State Agricultural Commissioner Bob Odom's plans for an ethanol plant in Lacassine have been shelved due to high cost estimates for construction, but local officials are still working to make it a reality.

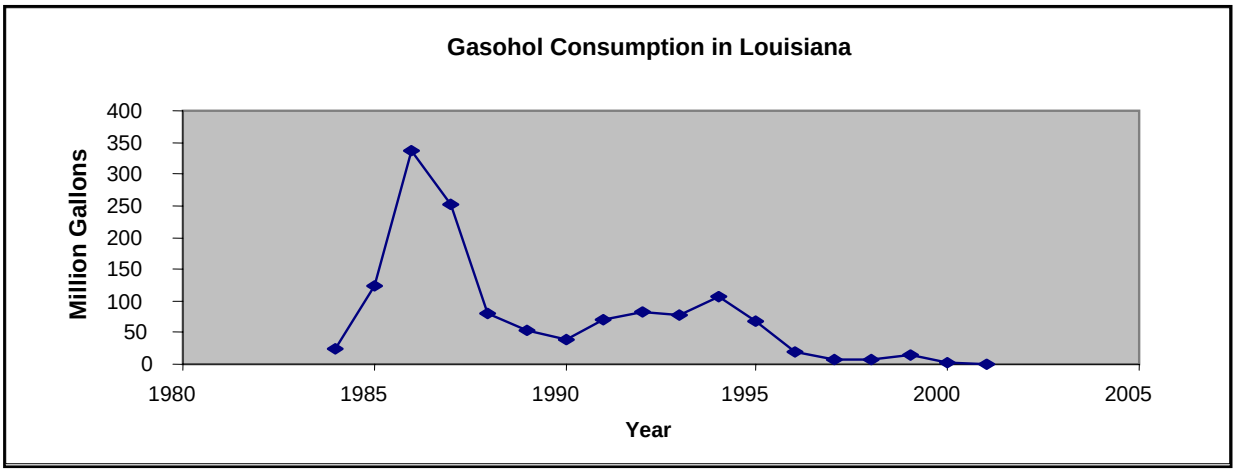
On the national level, the ethanol industry has received much attention lately. Much of the attention results from proposed federal energy legislation and states phasing out methyl tertiary-butyl ether (MTBE), which is widely used as an oxygenate and octane additive in gasoline. A federal energy bill is currently being debated in congress. One of the main goals is to heighten national energy security by reducing our dependence on foreign sources of energy. Another goal seeks to better the environment by reducing automobile pollution. A provision in the proposed federal energy bill aims at helping to meet both of these goals. The provision is a renewable fuel standard which would require a certain volume of the U.S. gasoline market to be composed of renewable fuels. A renewable fuel standard would more than double the current market for ethanol.

Louisiana

Ethanol was produced in Louisiana from 1984 to 1990 with a peak of 32 million gallons in 1986. When state subsidies ended in 1988, ethanol production was no longer economically feasible and the last plant ceased production in 1990.



Gasohol consumption also peaked in 1986 at 336 million gallons and has since declined to almost zero.



See the department's publication entitled *Ethanol in Louisiana 1993* for a more complete history of the ethanol industry in Louisiana. Contact the department for a copy[2]. There has been some renewed interest in ethanol in Louisiana and it may be produced in Louisiana again in the near future.

In 1994, the old Shepherd Oil refinery (converted to an ethanol plant) in Jennings, LA was purchased by Massachusetts firm BC International with plans to convert it into a 20 million gallon per year (MM GPY) biomass-to-ethanol facility. The plant would utilize mainly bagasse as a feedstock, although the process is able to use a wide variety of agricultural and paper or wood waste products. The patented BCI process uses a genetically engineered microorganism that breaks down complex sugars contained in biomass. These complex sugars cannot be broken down by fermentation. Fermentation is the process used in conventional ethanol plants that converts the simple sugars contained in sugar cane and starchy raw materials, such as corn, into ethanol. The ability to make ethanol from wood and cellulosic biomass such as bagasse, wood chips and waste paper opens up an opportunity to utilize much cheaper feedstocks than starch and sugar based crops. Due to the high yield of ethanol from the process, and the low cost of the feedstock, the ethanol produced at the facility is expected to be economically competitive with fossil fuels[1]. Financing for the project is still pending. The Louisiana State Bond Commission approved the issuance of $120 million in bonds in February, 2000, but BCI couldn't find buyers for the bonds due to unfavorable market conditions. BCI has since switched to private financing and has secured $100 million of the $120 million needed to complete the project. As of now, construction is scheduled to begin in 2003 and start operating in mid-to-late 2004.

State Agriculture Commissioner Bob Odom was investigating the possibility of a 60 MM GPY ethanol plant near Lacassine, but the idea was scrapped when the estimated cost to build the plant came in too high. Dubbed "The Louisiana Green Fuels Project," the plant was to produce ethanol from sugar cane and other agricultural products and be constructed with proceeds from the sale of bonds. The bonds were to be paid off with profits from the sale of ethanol. Local officials are still working to keep the idea alive. With ethanol poised to replace MTBE as an oxygenate in reformulated gasoline and/or the passage of a federal renewable fuels standard (discussed later), the plant would probably find a healthy market for its ethanol.

National

The ethanol industry is growing with a record 2 billion gallons produced in 2002. Much of the current growth can be attributed to some states banning or considering banning the use of MTBE due to its propensity to contaminate ground water. MTBE is an octane enhancer and oxygenate that is used in over 80% of reformulated gasoline (RFG) to fulfill the federal oxygenate requirement for RFG. Ethanol is an alternative to MTBE used in about 15% of RFG. California was the first state to ban MTBE, although it has extended the deadline to 2004 out of fear of gasoline shortages. California petitioned EPA for a waiver of the oxygenate requirement for RFG but was turned down. New York has also petitioned the EPA for a waiver of the oxygenate requirement for RFG. They point to research that shows that RFG can be produced without oxygenates that meets Clean Air Act specs. The EPA has yet to rule in their case.

Other issues are also involved in the MTBE vs. ethanol debate. When blended in gasoline, the resulting gasoline has a one pound higher vapor pressure than gasoline blended with MTBE. This leads to increased evaporative emissions which is a component in ground level ozone (smog) production. This is generally only a problem in the summertime, thus the reason for vapor pressure limits for summertime RFG. When ethanol is blended with gasoline, pentane must be removed from the RFG base in order to comply with the vapor pressure limit. This causes a significant volume loss of the refiners stock and can lead to gasoline shortages and price spikes in areas using RFG made with ethanol. This is exactly what happened in the mid-west US during the summer of 2000[4]. Also, ethanol is soluble in water, and gasoline blended with ethanol will separate if contaminated with water. Pipelines usually contain some moisture. For this reason, ethanol must be shipped by train or truck and blended into gasoline near distribution points instead of blended at the refinery and shipped by pipeline.

The use of MTBE and ethanol in gasoline is largely the result of federal mandates, some of which may be about to change. After a failing last fall, the effort to revamp national energy policy has been resumed in the 108th Congress. Both House and Senate versions of an energy bill contain a renewable fuel standard which would require gasoline to contain a certain volume of renewable fuel. A renewable fuel standard would be a boon to the ethanol industry because the vast majority of renewable fuel used to meet the requirement would be ethanol. The House renewable fuel standard would require 2.7 billion gallons of renewable fuel in 2005 gradually increasing to 5 billion gallons by 2015. The Senate version would require 2.6 billion gallons in 2005 gradually increasing to 5 billion gallons in 2012. For perspective, total annual gasoline consumption is 130 billion gallons in the US and 2 billion gallons in Louisiana. Both versions include cellulosic biomass ethanol and biodiesel in their definitions of renewable fuel, and both versions consider one gallon of cellulosic biomass ethanol to be equivalent to 1.5 gallons of renewable fuel. Both versions also eliminate the oxygen requirement for RFG, but only the Senate version bans the use of MTBE (subject to state law). Overall, the language of the House and Senate energy bills are very similar. This makes it likely that an energy bill will be passed and sent to the president to sign. Even without passage of an energy bill, the ethanol industry is expected to continue to grow due to many states phasing out MTBE. Ethanol producers are gearing up and expanding to meet the increased demand for their product.

Energy Balance Update

The debate still rages over whether or not corn ethanol has a positive or negative net energy value (NEV). NEV is the energy contained in ethanol minus the energy required to produce the same volume of ethanol. Since the 1970's, many studies have been undertaken to calculate the NEV and results have varied greatly. Most of the newer studies report a positive NEV. Most recently, the USDA updated their 1991 study and came up with an NEV of 21,105 Btu/gal, up slightly from their 1991 study. The study is available online[3]. The newest USDA study identifies several factors that have led to the wide differences in NEV from different studies and found that most of the variation resulted from assumptions about farm production and ethanol conversion. According to the USDA study, studies that report negative NEV tend to use older data that do not reflect the advances made in farm production and ethanol plant efficiency.

1. University of Florida website: http://www.napa.ufl.edu/98news/ethanol.htm

2. LA Department of Natural Resources, Technology Assessment Division, Phone: (225) 342-1270, E-mail: techasmt@dnr.state.la.us.

3. *The Energy Balance of Corn Ethanol: An Update*, U.S. Department of Agriculture, Office of Energy Policy and New Uses, Washington, DC; July, 2002.

4. "Environmental Impacts for RFG Without MTBE or Oxygenates". William J. Piel, TEIR Associates, Inc. 2000.

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SELECTED LOUISIANA ENERGY STATISTICS

Among the 50 states, Louisiana's rankings (in 2002 unless otherwise indicated) were:

PRIMARY ENERGY PRODUCTION
(Including Louisiana OCS)

1st in crude oil
2nd in natural gas
2nd in total energy

REFINING AND PETROCHEMICALS

2nd in refining capacity
2nd in primary petrochemical production

PRIMARY ENERGY PRODUCTION
(Excluding Louisiana OCS)

4th in natural gas
4th in crude oil
8th in total energy

ENERGY CONSUMPTION (2001)

3rd in industrial energy
3rd in per capita energy
3rd in natural gas
5th in petroleum
8th in total energy
22nd in residential energy

PRODUCTION

State controlled (i.e., excluding OCS) natural gas production peaked at 5.6 TCF per year in 1970, declined to 1.5 TCF in 1995, and rebounded 4.5% to 1.6 TCF in 1996. The 2000 gas production was, approximately, 1.46 TCF, the 2001 production was around 1.50 TCF, and the 2002 gas production was 1.36 TCF.

State controlled gas production is on a long term decline rate of 4.0% per year, though the current short term (2004-2008) forecast decline is around 5.3% per year.

State controlled crude oil and condensate production peaked at 566 million barrels per year in 1970, declined to 127 million barrels in 1994, recovered to 129 million barrels in 1996, and declined to 93.6 million barrels in 2002.

State controlled crude oil production is on a long term decline rate of 4.4% per year, though the current short term (2004-2008) forecast decline is around 5.0% per year. If oil stays around $25.00 per barrel, the decline will remain as predicted. If the price holds consistently above $25.00 per barrel, the decline rate may be lower.

Louisiana OCS* (federal) territory is the most extensively developed and matured OCS territory in the US.

Louisiana OCS territory has produced 90.5% of the 13.4 billion barrels of crude oil and condensate and 81.5% of the 143 TCF of natural gas extracted from all federal OCS territories from the beginning of time through the end of 2001.

Louisiana OCS gas production peaked at 4.16 TCF per year in 1979, declined to 3.0 TCF in 1989, and increased to 3.72 TCF in 2001.

Louisiana OCS crude oil and condensate production first peaked at 388 million barrels per year in 1972 and declined to 246 million barrels in 1989. In this decade, the production has steadily risen from 264 million barrels in 1990 to 502 million barrels in 2001 due to the development of deep water drilling.

REVENUE

At the peak of Fiscal Year (FY) 1981/82, oil and gas revenues from severance, royalties, and bonuses amounted to $1.6 billion, or 41% of total state taxes, licenses and fees. For FY 2002/03, these revenues are estimated to be in the vicinity of $731 million, or about 9% of total estimated taxes, licenses, and fees.

At constant production, the State Treasury gains or loses about $16 million of direct revenue from oil severance taxes and royalty payments for every $1 per barrel change in oil prices. This figure rises to $20 to $25 million per dollar change when indirect revenue impacts are included (e.g., income tax, sales tax, etc.).

DRILLING ACTIVITY

Drilling permits issued on state controlled territory peaked at 7,631 permits in 1984 and declined to a low of 1,017 permits in 1999. In 2001 there were 1,365 drilling permits issued, and in 2002 drilling permits fell to 1,025.

The average active rotary rig count for Louisiana, excluding OCS, reached a high of 386 rigs in 1981 and reached a low of 64 rigs in 1993. In 2000 the average was 69 active rigs, in 2001 it recovered to 108 active rigs, and in 2002 the average dropped to 76 active rotary rigs.

The 2002 average active rotary rig count for Louisiana OCS was 87 active rigs, 19 rigs, or 17.9% lower than 2001 average, and the highest active rotary rig count was 107 rigs recorded in 2000. In 1999, the average active rig count was 76, or 16.6% lower than the 1998 average active rotary rigs.

Note: Louisiana OCS or Outer Continental Shelf is federal offshore territory adjacent to Louisiana's coast beyond the three mile limit of the state's offshore boundary.
TCF= trillion cubic feet

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Alternative Motor Vehicle Fuels in Louisiana

By Bryan Crouch, P.E.

The three major driving forces behind the usage of alternative fuels for vehicles are:

1) There is a desire to reduce our reliance on foreign sources of oil: Of the 15.17 million barrels/day (MMB/D) of crude refined in the US during 2000, the US imported 2.41 MMB/D from Arab OPEC, 2.13 MMB/D from non-Arab OPEC, and 4.52 MMB/D from non-OPEC countries. The September 11, 2001, terrorist attack accentuated the vulnerability of our vital oil supplies.

2) It can be a means of reducing motor vehicle pollution problems: Gasoline is a very efficient and convenient way to store energy. One pound contains 19,000 BTU, and simply pours out of a nozzle as a liquid at normal temperatures and pressure. The problem is, when gasoline is combusted with air, it produces carbon dioxide and a myriad of pollutants, such as oxides of nitrogen and carbon monoxide. The oxides of nitrogen, when exposed to sunlight, produce smog, a major health hazard.

3) There is a limited supply of current fuel sources: Although we keep discovering new oil and gas fields, supplies will eventually run out. Time estimates vary greatly, but inevitably that day will come.

The two major stumbling blocks to conversion to alternative fuels are:

1) There is a lack of a marketing infrastructure and fueling convenience: No other fuel has the distribution network of gasoline. Electricity and natural gas are readily available, but battery technology limits the use of electricity, and natural gas must be compressed or liquefied to be useful in vehicles.

2) The economics for most new fuels is unattractive: Alternative fuels, and alternative fuel vehicles (AFVs), are not cost competitive with gasoline at the present time.

Alternative fuel and AFVs have the potential to become less expensive as technology matures. Gasoline will become more expensive as crude oil supplies dwindle. At some point, the price curves will meet and the economics of alternative fuels will be competitive. Until then, federal and state incentives are being used to help spur the development and distribution of alternative fuels.

Federal and state legislative deadlines mandating the increased use of alternative fuels have spurred some Louisiana vehicle fleet owners to begin converting a portion of their fleets. Most new conversions are to compressed natural gas (CNG), but the majority of AFVs now on the road are fueled by liquefied petroleum gas (LPG), commonly known as propane. However, Louisiana Department of Revenue and Taxation records show a steady decrease in the number of these vehicles over the past few years.

Ecogas of Louisiana began the conversion of a portion of the state government fleet to CNG in March 1994 in accordance with their contract with the state. The contract was terminated in December 1995 after 184 conversions had been completed due to high costs and insufficient refueling infrastructure. Some city and parish governmental entities have converted a few vehicles in their fleets. For example, the Baton Rouge Department of Public Works has 61 CNG vehicles operating, with plans for more in the future.

Currently, there are four unrestricted public access CNG refueling stations and a few others willing to provide limited access with prior coordination. Public demand for personal natural gas vehicles (NGVs) remains virtually nonexistent due to the high cost of conversion and the lack of adequate refueling infrastructure participation.

There are several federal programs designed to increase the use of alternative fuels. One such program is the Department of Energy's (DOE) Clean Cities Program. Stakeholders of the Clean City organizations are motivated by voluntary measures, not by government mandates. The stakeholders, whether fuel providers, vehicle manufacturers, fleet managers, or air quality representatives, work together as a coalition to further the development of the AFV market.

State government offers tax incentives to encourage increased use of AFVs. Act 1060 of 1991 provides for a 20% tax credit for AFV purchases, certain conversion costs, and fuel dispensing facilities. Natural gas and LPG fuels also enjoy a lower state and federal tax rate compared to gasoline.

Much progress has been achieved in hybrid electric vehicle (HEV) technology, and the number of HEVs is beginning to increase. As battery performance and mechanical drive components continue to improve, and costs are reduced, we can expect to see more of these vehicles in use in Louisiana. Currently, only Honda and Toyota have hybrid cars that can be purchased, but models from several other manufacturers are in the works for 2004 and beyond.

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A Hydrogen Primer

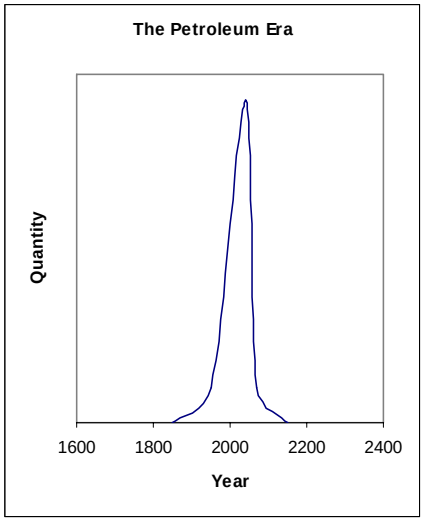
By Bryan Crouch, P.E.

The End of Cheap Oil

Energy is inextricably linked to our society and economy. We use energy as leverage for our physical strength and intellect to perform tasks we could not otherwise accomplish. Almost everything people do in the course of a day involves, or depends on, a machine using energy to produce work. Not just any energy will do, it must be affordable energy.

It has to be affordable because people are not interested in buying energy; they are interested in buying products and services. If the energy required to create products and services is unaffordable, the products and services become unaffordable. Currently, we get affordable energy from fossil fuels, a finite resource. Of the fossil fuels, oil is the most heavily relied on, but long before we run out of oil, we will run out of cheap oil.

At some point in the future, global oil production will peak and begin to decline. Some time after this, as demand rises and supply declines, prices will rise sharply. Prices will destabilize prior to this due to speculation and anticipation. Finally, prices will increase to a level beyond what the economy can support and the era of cheap oil, that began when Edwin Drake struck oil in 1859, will come to an end.



The world oil production curve will look something like the illustration on the right. The time frame for this sequence of events is the subject of much debate and speculation. The U.S. Department of Energy's Energy Information Administration predicts a peak between 2030 and 2075 (Energy Information Administration, 2000). Other experts on the subject predict a global peak ranging from 2000 to 2015 (Williams, 2003). The point is, whether the global peak occurs now, or 50 years from now, the petroleum era will be a short, finite blip in history.

The Hydrogen Economy

In order to maintain our economy and standard of living beyond the petroleum era, we will have to transition to some other energy regime. One possibility is hydrogen.

In 2002, the U.S/ Department of Energy released the National Hydrogen Energy Roadmap, and in 2003, President Bush announced $1.7 billion in funding for hydrogen energy in the State of the Union Address. Hydrogen has received a lot of attention lately, some portraying it as the cure-all for our energy problems, and some as an attempt to slash funding for research and development of other alternative energy sources.

The reasons for the wide ranging characterizations of hydrogen energy, other than political, are due to the fact that, in theory, hydrogen does indeed seem like a miracle solution to many energy problems, but many significant barriers exist to put it into practice. The following is an introduction to hydrogen and some of the possibilities and problems associated with a hydrogen based economy.

No one knows, yet, exactly what a hydrogen economy would look like, but the front running scenario would be based on hydrogen fuel cells producing electricity. The electricity would then be used to power vehicles, homes, businesses, etc. In this scenario, hydrogen is not an energy source, but rather a carrier. Hydrogen can, also, simply be used as a combustion fuel in an internal combustion engine. The only emission is pure water. Ford and BMW are actively pursuing this option as an alternative motor vehicle fuel.

Fuel Cells

A hydrogen fuel cell is a simple device that uses hydrogen and oxygen to produce an electric current. Sir William Grove is credited with the discovery of the fuel cell in 1839. His experiment was based on the known fact that, if an electric current was applied to water, it would separate into its constituents, hydrogen and oxygen (Figure 1). Grove's experiment simply showed that, if the electric current was removed, the reaction would reverse, and the hydrogen and oxygen would recombine into water and produce an electric current (Figure 2).

Figure 1

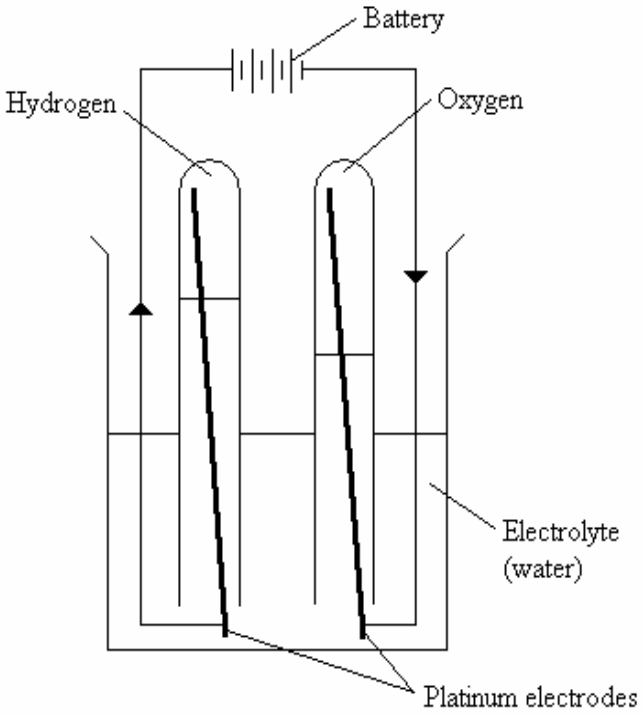
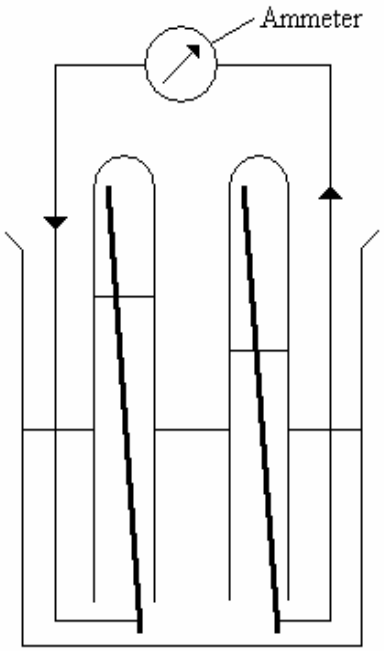
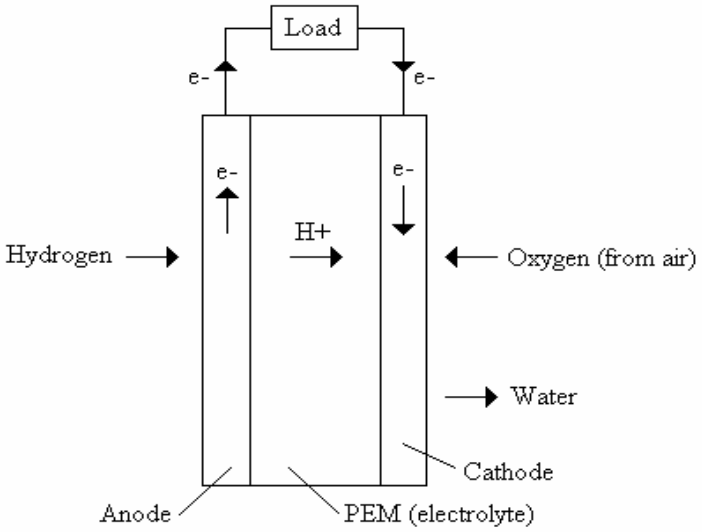


Figure 2



A practical fuel cell is more complex than the one shown in Figure 2, although the operating principle remains the same. One of the simplest types of a hydrogen fuel cell is the proton exchange membrane (PEM) fuel cell. A PEM is a specially designed polymer that functions as the electrolyte in the fuel cell assembly. The basic components of a PEM fuel cell are shown in Figure 3. Basically, a PEM fuel cell operates as follows: Hydrogen is fed to the anode and separated into hydrogen ions (protons) and electrons. The PEM allows the hydrogen ions to pass through to the cathode, but not the electrons. The electrons are given a separate path to the cathode, enabling electrical energy to be extracted. Oxygen is supplied to the cathode which combines with the hydrogen ions and electrons to form water. Another way of understanding the operation of a fuel cell is to think of the hydrogen as being "combusted," or oxidized, but, instead of producing heat energy, the reaction produces electrical energy. The voltage produced from this reaction is small, less than one volt. For this reason, several cells are connected in series, called a fuel cell stack, to produce the desired voltage. A typical PEM fuel cell is about 50% efficient, that is, it converts 50% of the energy contained in hydrogen into electricity. The efficiency can be increased substantially by capturing the waste heat and using it for space heating, water heating, or process heat. When the waste heat is utilized in a cogeneration setup, efficiencies can reach 90%.

Figure 3



Hydrogen Production and Transportation

The good news about utilizing hydrogen as an energy carrier is its abundance and its environmental benefits. The bad news is that it is always chemically bound to something else, usually oxygen and carbon. In order to obtain hydrogen, energy has to be exerted to break its chemical bonds with other elements. In general, with current technology, the energy required to obtain hydrogen renders the process uneconomical. While fuel cells have their own set of significant obstacles to overcome before being technologically and economically viable, the problems associated with obtaining and distributing hydrogen are generally thought to be more difficult to solve.

The ultimate objectives of hydrogen production for use as an energy carrier are producing it economically and renewably. There are several ways to produce hydrogen, some of them economical, and some of them renewable, but none that are both, as yet.

Over 9 million tons of hydrogen is produced yearly in the U.S. Most of it is used to make ammonia, while other users include refining, chemical, and food industries. Ninety five percent of this hydrogen is produced by using steam to reform natural gas (fossil fuels contain lots of hydrogen). This method can be economic, depending on the price of natural gas, but natural gas will eventually suffer a fate similar to that of oil since steam reformation of natural gas is a non-renewable source of hydrogen.

Renewable hydrogen production is accomplished by using renewable generated electricity (solar, wind, etc.) to perform electrolysis on water. Electrolysis, whether using renewable or non-renewable electricity, is inefficient, usually making it uneconomic. There are other ways of obtaining hydrogen including thermal water splitting, thermochemical water splitting, gasification of coal, and thermal and biological conversion of biomass. All of these methods are being investigated to determine their economic and technical feasibility.

The other major problem associated with hydrogen is transportation. Hydrogen gas is extremely lightweight, making it necessary to compress or liquefy it in order to be contained in a reasonably sized
volume for transportation by ship or truck. This adds considerably to the cost. Hydrogen can be transported effectively by pipeline, but few dedicated hydrogen pipelines currently exist. In the beginning stages, hydrogen will have to be produced on or near site. As hydrogen usage expands, the economics will change and, depending on technological advances, central hydrogen production may make sense.

Transition and the Future

This discussion, so far, focuses on the current state of hydrogen in relation to its use as an energy carrier. It's clear that a hydrogen based energy regime will have to begin with the non-renewable production of hydrogen for economic reasons. As the transition to a new energy regime occurs, the technology and economics will change, hopefully leading to the economic, renewable production of hydrogen. For example, hydrogen will accelerate the development of wind and solar power by enabling the storage of energy produced by these intermittent sources. This would allow wind and solar to move into geographic areas that are not, otherwise, ideal for their usage. Another renewable technology that may mesh well with hydrogen is off shore geothermal electricity generation. This technology uses the temperature difference in water depth to drive a thermodynamic cycle and generate electricity. Although the process is extremely inefficient, the size of the resource is huge, including all tropical oceans and the Gulf of Mexico. The electricity can then be used to electrolyze sea water to produce hydrogen, which is then liquefied and shipped to shore for distribution.

The Louisiana Connection

Whether or not hydrogen proves to be the foundation of future energy production, a lot of resources are being directed towards hydrogen and fuel cell development. Louisiana is one of the few places in the country that has an existing hydrogen infrastructure. Air Liquide, Air Products, and Praxair operate hydrogen pipelines in Louisiana, and Louisiana is home to many chemical plants and refineries that produce and use hydrogen. The existence of this hydrogen market creates a ripe environment for hydrogen and fuel cell development. If taken advantage of, Louisiana could become a hub of hydrogen and fuel cell development. For example, in the largest fuel cell transaction to date, Dow Chemical and General Motors recently announced a deal in which GM will provide fuel cells to the Dow plant in Freeport, Texas. Dow will use excess hydrogen generated as a byproduct from chlorine production to feed the fuel cells. The electricity generated by the fuel cells will be used for general power in the plant. The fuel cells are expected to produce 35 megawatts of power over the life of the project. Dow and GM are discussing plans for similar projects at other Dow plants.

We will still be using fossil fuels well into the future, but, eventually we'll have to derive energy from some other source. A lot will be at stake for Louisiana when this happens. Everyone knows what would happen to Louisiana's economy if the oil and gas industry weren't here. If electricity produced via hydrogen turns out to be the alternative, and we take advantage of the opportunity, Louisiana could continue its role as a leader in energy production and technology well into the future.

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AMERICA'S WETLANDS: ENERGY CORRIDOR TO THE NATION

By Bob Sprehe, Energy Economist

A Proud History of Service to America's Energy Needs

Part 1 of a series of 7 articles

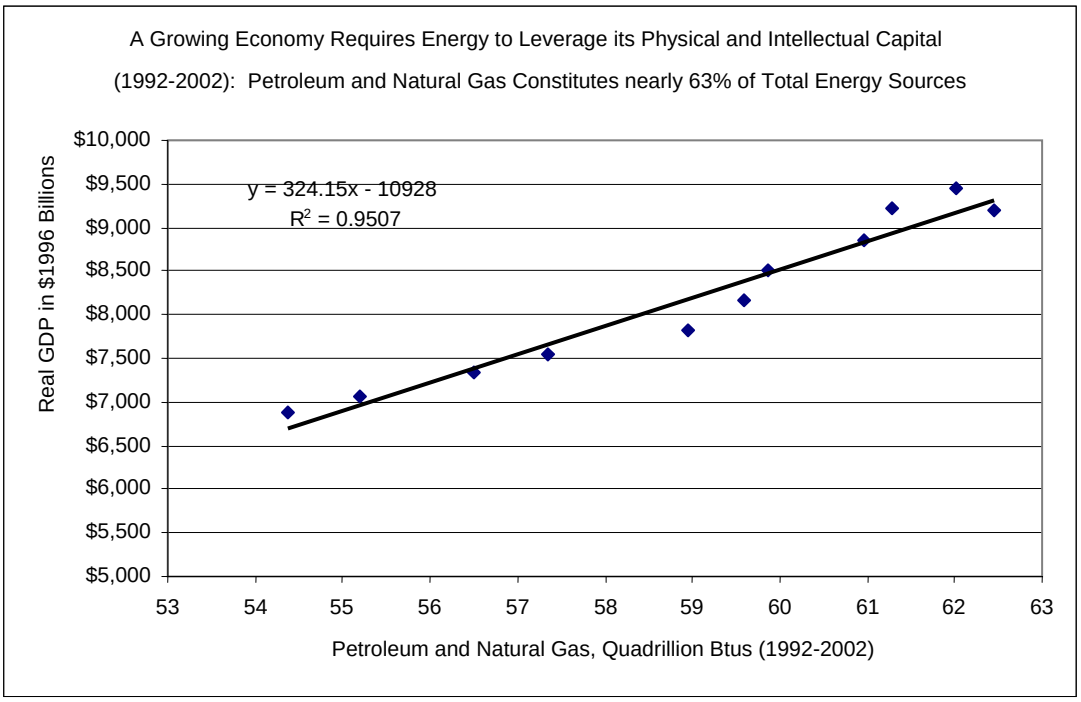
Louisiana's coastline measures just under 400 miles from the Texas border to the Mississippi line. This represents less than 6% of the contiguous lower 48 states' coastline. From this coastline up to Interstate 10, which traverses the state east to west, lies about 5,300 square miles (or 3.4 million acres) of coastal wetlands (America's Wetlands).

Within, and across, this wetlands area are:

1) oil and natural gas drilling slips and production facilities,
2) natural gas and crude oil pipelines, both onshore and from the state and federal offshore,
3) the intersections of oil and natural gas intrastate and interstate pipeline networks, from both onshore and offshore, which serve as the reference for Wall Street's Commodity Futures markets such as the Henry Hub for natural gas, the St. James Louisiana Light Sweet Crude Oil, and the Mars Sour Crude Oil contracts,
4) subsurface salt domes which store a significant portion of the nation's Strategic Petroleum Reserve (SPR),
5) the St. James oil terminal on the Lower Mississippi River, capable of offloading ocean going oil tankers, or loading barges for further inland shipment, and the origination of Shell Oil Company's CAPLINE pipeline network transporting oil and petroleum products north into the nation's heartland,
6) the Louisiana Offshore Oil Port (LOOP), the nation's major import terminal for foreign oil, the associated east-west LOCAP pipeline network, and onshore salt dome storage facilities,
7) an LNG (liquefied natural gas) terminal, site of one of the nation's major import facilities for natural gas and, now,
8) Port Fourchon, near the termination of Louisiana Highway 1 at Leeville, Louisiana, located directly on the Gulf Coast, the oil field services and supply port supporting the deepwater offshore exploration and production efforts, the only growing source of domestic crude oil production in the United States.

This compact coastal geographic area of the United States and its network of energy facilities, in the aggregate, accommodate the movement of over 26% of the nation's natural gas supply, as well as, over 26% of the nation's crude oil supply. Together with the facilities in the rest of the state, nearly 34% of the nation's natural gas supply, and over 29% of the nation's crude oil supply, moves through the state of Louisiana and is connected to nearly 50% of U. S. refining capacity. Not considering other value, this volume of crude oil and natural gas flowing through Louisiana's Energy Corridor represents, approximately, $150 billion in annual energy value, equivalent to about $50,000 per acre of wetlands (about $30,000,000 per square mile). **No other similar sized geographic area of the United States impacts the nation's aggregate economy like this vital Wetlands Energy Corridor.**

U. S. Citizens use Energy to Leverage their Physical and Intellectual Capital and to raise Living Standards. Crude Oil and Natural Gas are the primary sources of that energy.



Louisiana's Proud Energy Heritage

Col. Edwin L. Drake is widely credited with drilling the first successful oil well in the United States, near Titusville, Pennsylvania in 1859. This is acknowledged in history as the beginning of the oil industry in America.

But Louisiana has been a vital participant in this nation's proud energy history for over 130 years, spanning parts of the 19th, 20th and 21st Century.

An Historical Timeline of Louisiana's Wetlands Resources as America's Energy Corridor

Year	Event
1868	Louisiana's first well, an exploratory well near Bayou Choupique, Hackberry, LA was a dry hole.
1901	The No. 1 Jules Clement, 5 miles northeast of Jennings, completed as a producer Sept. 21, 1901.
1906	First North Louisiana well (natural gas) completed March 26, 1906 in Caddo Parish.
1906	First interstate natural gas pipeline system from Caddo Field to Marshall, TX.
1909	First processing at Baton Rouge refinery, September 1909.
1910	First interstate oil pipeline from Oklahoma through Caddo Lake area to Baton Rouge.
1910	Gulf Oil completes the first oil well over water in Caddo Lake, 1910.
1933	First well drilled on state offshore lands, 3,000 ft. from the beach near Creole, LA, in 12 ft of water.
1937	First offshore field production in 26 ft. of water, 1.5 miles off the beach, Creole, LA.
1947	First offshore well drilled out of sight of land by Kerr McGee in Ship Shoal Block 32.
1976	Shell Oil announces discovery of first deepwater field, called Cognac, in 1,025 ft. of water at Mississippi Canyon 194.
1977	DOE SPR initiative completes St. James terminal and salt dome storage facility at Bayou Choctaw.
1979	A consortium of private companies completes the Louisiana Offshore Oil Port, salt dome storage, and LOCAP pipeline.
1981	Panhandle Eastern Pipeline company completes its LNG terminal at Lake Charles, LA.
1991	State of Louisiana organizes the Louisiana Oil Spill Coordinators Office to pro-actively manage spill threats to Wetlands Resources.
1997	Port Fourchon, the nation's only port serving the deepwater oil and natural gas infrastructure, expands operationally.
2001	Thunder Horse, largest deepwater reservoir yet discovered (in 5,640 ft. of water) is announced by owners BP and Exxon.
2002	Marathon and TotalFinaElf set water depth record for natural gas pipeline tie in (7,209 ft. water depth).
2002	MMS implements Presidential Directive to fill SPR with Royalty in Kind Oil, rate reaches 100,000 BOPD in October 2002.
2002	ChevronTexaco files first LNG proposal under the Deepwater Ports Act with the USGS on December 3, 2002 (Port Pelican).

In 1868, 9 years after Col. Drake drilled his first discovery, a dry exploration well was drilled near Hackberry, LA. Instead of oil, sulfur was discovered. (Source: Morning Advocate, October 10, 1956, “Oil Progress Week Begins, History of Oil is Related”)

Louisiana’s first oil discovery was on September 9, 1901 near Jennings, LA, about 9 months after the discovery of the legendary Spindletop field near Beaumont, TX. (Source: Morning Advocate, October 10, 1956)

In 1906, the first gas well was completed in Caddo Parish by a group of Chicago businessmen in the synthetic gas business. (Source: *Natural Gas, The Gulf South’s Symbol of Progress* by Norris Cochran McGowen, member of the Newcomen Society, President of United Gas Corporation, 1951)

Later that same year (1906), the first interstate natural gas pipeline was laid from the Caddo field to Marshall, Texas. (Source: Natural Gas, McGowen)

In 1909, oil refining started in Baton Rouge at, what is today, the site of the giant Baton Rouge refinery. (Source: Morning Advocate, October 10, 1956)

In 1910, the first interstate oil pipeline was completed from Oklahoma to Baton Rouge, running through Caddo Parish and incorporating the oil production from the Caddo field. (Source: *Louisiana Oil and Gas Facts*, Mid-Continent Oil and Gas Association, 30th Edition).

Also in 1910, Gulf Oil completed the first well drilled over water in Caddo Lake. (Source: Louisiana Department of Natural Resources, Office of Conservation web site, Centennial Slide Show, "First 100 Years")

In 1933, the first well drilled on state offshore lands was drilled at Creole, LA, approximately, 3,000 ft. off the beach in 12 ft. of water. (Source: Jim Lavin, Louisiana Department of Natural Resources, Office of Mineral Resources [OMR], Petroleum Lands)

In 1937, the first offshore field was placed on production at Creole, LA, about 1.5 miles offshore in 26 ft. of water. (Source: Jim Lavin, Louisiana Department of Natural Resources, Louisiana Department of Natural Resources, OMR)

In 1947, the first offshore well, out of sight of land, was drilled by Kerr-McGee Oil Company at Ship Shoal Block 32. (Source: Jim Lavin, Louisiana Department of Natural Resources, OMR)

In 1976, Shell Oil Company announced the first deepwater discovery at their Cognac platform in Mississippi Canyon Block 194 in 1,025 ft. of water. (Source: Minerals Management Services, MMS, Milestones, Directors' page web site)

In 1977, the Department of Energy opened its St. James docking and terminal facilities and its Bayou Choctaw Strategic Petroleum Reserve (SPR) salt dome storage site to commercial operation. (Source: Department of Energy, DOE, Fossil Fuels web site)

Two years later, in 1979, a consortium of private energy firms opened the Louisiana Offshore Oil Port (LOOP) for commercial operations, including underground salt dome storage and the LOCAP pipeline connecting with the already operational CAPLINE complex, and extending east-west to refineries within Louisiana, and across the borders to Texas and Mississippi. (LOOP web site)

In 1981, Panhandle Eastern Pipeline Company completed its Liquefied Natural Gas (LNG) Storage and Regasification facilities at Lake Charles, importing LNG from Algeria by specially constructed LNG tankers for resale to the Midwest natural gas markets. (Source: *Louisiana Contractor* magazine, July 1980, "Liquefied Natural Gas Has A Role in the Energy Crisis and a Base in Louisiana")

With Congressional passage of the Oil Pollution Act of 1990 (in response to the Exxon Valdez oil spill off the coast of Alaska), the Louisiana State Legislature created the Louisiana Oil Spill Coordinators Office (LOSCO) in 1991 to pro-actively manage the state's environmental exposure to spills from the myriad pipeline, shipping, drilling, and producing locations, particularly in, and near, the environmentally sensitive coastal wetlands areas. (Source: Louisiana Oil Spill Coordinators Office brochure, Office of the Governor, State of Louisiana)

As the deepwater discoveries increased in numbers, the nation's only port serving the exclusive needs of the deepwater oil and natural gas exploration and production sector, Port Fourchon, near Leeville and Grand Isle, Louisiana expanded its land based facilities to meet the escalating needs of deepwater operators and American consumers.

In 2001, BP and Exxon announced the largest deepwater oil discovery to date in the Gulf of Mexico, located in 5,640 ft. of water, called Thunder Horse. (Source: MMS Milestones)

In 2002, Marathon and TotalFinaElf marked another milestone for deepwater operations by successfully installing a natural gas pipeline tie in 7,209 ft. of water. (Source: MMS Milestones)

In October 2002, the Minerals Management Service (MMS) implemented a Presidential Directive to fill the Strategic Petroleum Reserve (SPR) by taking Federal Government royalties "in kind", achieving a fill rate of 100,000 barrels oil per day (BOPD). (Source: MMS Milestones)

In December 2002, ChevronTexaco filed the first application for permit under the Federal Deepwater Ports Act for an LNG terminalling facility in the Gulf of Mexico, initially to be known as "Port Pelican." (Source: MMS Milestones)

Subsequent to the Chevron filing, natural gas supply and pricing has received much public attention, largely because of the special testimony of Federal Reserve Board Chairman Alan Greenspan to Congressional panels on the critical role of natural gas in the Nation's economy.

NOTE: The Department of Natural Resources wishes to thank the Research Librarians at the State Library of Louisiana for their assistance in locating these many references.

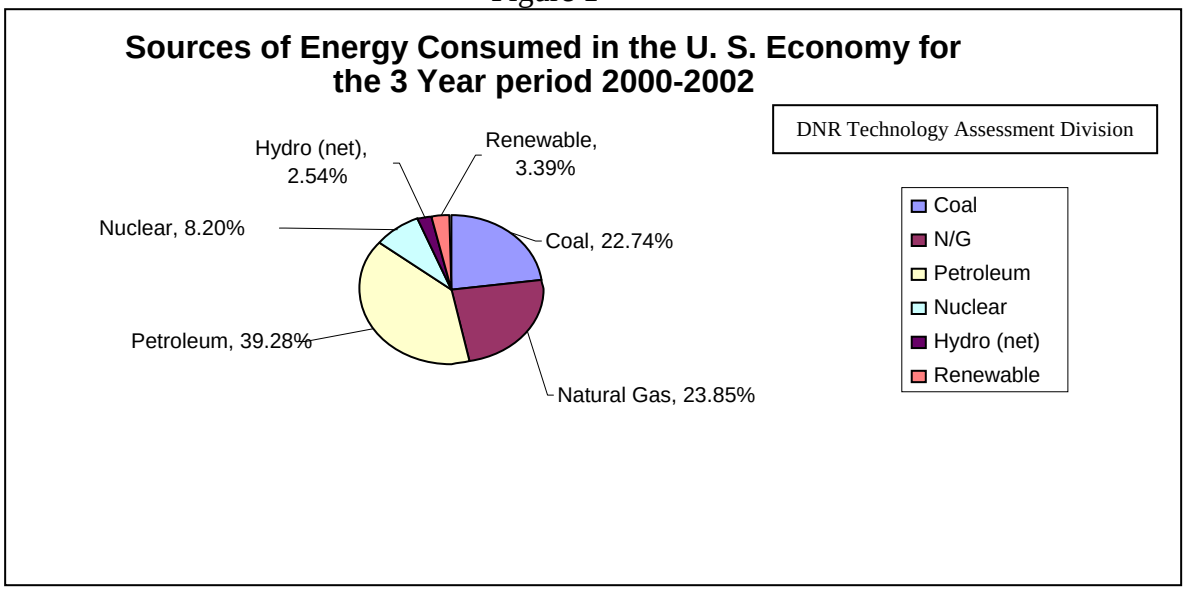
Originally Published in October 2003 Louisiana Energy Facts

The Department of Energy's (DOE) Strategic Petroleum Reserve (SPR)

Part 2 of a series of 7 articles

The U. S. uses energy to leverage its physical and intellectual capabilities to raise living standards. Nearly 63% of that energy comes from crude oil and natural gas. These two fossil fuels, especially crude oil, have dominated the energy supply equation for the U. S. economy, not only in the past 100 years, but likely into the foreseeable future.

Figure 1



The importance of crude oil imports to the U. S. economy becomes quite clear from the American Petroleum Institute (API) data tracing historical crude oil production and imports (Figure 2). Over 56% of America's supply of crude oil now comes from foreign imports. With this magnitude of import reliance, the need for a strategic reserve of crude oil supply as a hedge against supply disruptions which could destabilize the U. S. economy is readily apparent.

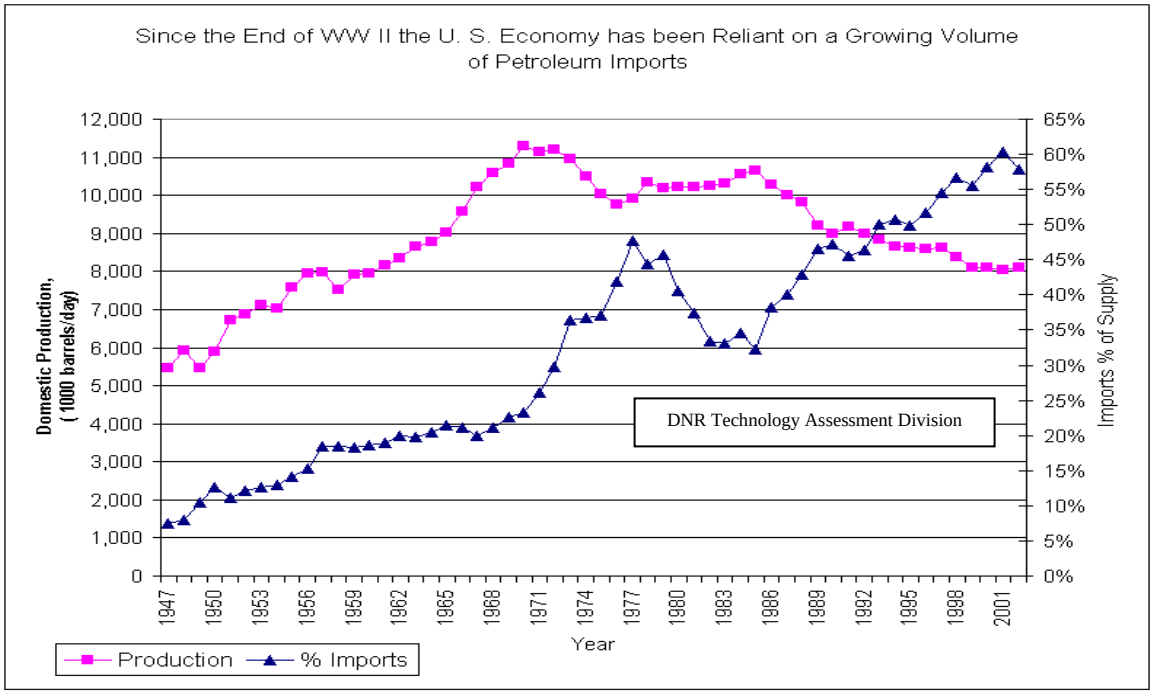
History of Strategic Oil Reserve Policy Discussions

The DOE web site, *Fossil.Energy.gov*, details the history of policy discussions within Administrations since 1944 and is the primary source for a wealth of knowledge about the SPR.

> "Secretary of the Interior Harold Ickes advocated the stockpiling of emergency crude oil in 1944. President Truman's Minerals Policy Commission proposed a strategic oil supply in 1952. President Eisenhower suggested an oil reserve after the 1956 Suez Crisis. The Cabinet Task Force on Oil Import Control recommended a similar reserve in 1970."

But the Arab oil embargo of 1973-74 triggered action. President Ford signed the Energy Policy and Conservation Act (EPCA) on December 22, 1975. This legislation declared it to be the policy of the United States to establish a reserve of up to 1 billion barrels of petroleum.

Figure 2



Louisiana's Wetlands Energy Resources

Because of the existence of a concentration of refineries and distribution points for tankers, barges, and pipelines along the Gulf of Mexico it was logical to look for storage in this geographic area. A large number of subsurface salt domes were identified across Louisiana, Texas, and Mississippi. The subsurface storage of crude oil in salt caverns offered the best security for the Strategic Petroleum Reserve (SPR), low environmental risk, and also the least costly storage mechanism, as salt dome storage is considered about one-tenth the cost of surface storage of crude oil.

Storage locations along the Gulf Coast in Louisiana and Texas were selected because they provided the most flexible means for connecting the SPR storage sites to the existing commercial pipeline and waterways network, subsequently reaching over 50% of the nation's refineries.

In April 1977, the government acquired several existing salt caverns to serve as the first storage sites. Sites were acquired at 3 locations: Bayou Choctaw, near St. James, Louisiana; West Hackberry, near Hackberry, Louisiana; and Bryan Mound, near Freeport, Texas. In 1982, a fourth complex was added, the Big Hill Storage site near Nederland, Texas. Surface facility

construction at Bayou Choctaw and St. James, Louisiana began in June 1977. On July 21, 1977, the first oil was delivered to the SPR, a shipment of Saudi Light crude.
The SPR, currently, has 62 caverns for storage of the SPR crude oil reserve. These salt caverns range between 6 and 30 million barrels in capacity. A typical cavern contains 10 million barrels, is cylindrical in shape, has a diameter of about 200 feet, and a height of about 2,000 feet. The caverns are created by drilling into the salt dome, then circulating fresh water to dissolve the desired cylindrical shape.

President Bush has authorized filling the reserve up to its current capacity of 700 million barrels. The SPR is currently receiving oil and will reach that storage capacity by the 4th Quarter of calendar year 2005. Currently, there are 618.4 million barrels of crude oil in SPR inventory. The priority in managing the SPR, under the direction of the Office of Fossil Fuels, is to maintain the readiness of the oil stockpile for emergency use at the President's direction. The current maximum draw down rate is 4.35 million barrels per day.

The St. James, Louisiana Marine Terminal

Surface facilities for oil cargo handling were also needed to sustain the ongoing operation of the subsurface salt dome storage facilities. DOE constructed a marine terminal site in St. James, Louisiana, St. James Parish at mile marker 158.3 on the Mississippi River, approximately, 45 miles west of New Orleans and 30 miles southeast of Baton Rouge, Louisiana. Marine site construction began in 1978 and was completed in 1980. The facilities comprise 2 main sites: "a main terminal occupying, approximately, 105 acres of land, and 2 marine docks occupying, approximately, 48 acres of land."

"The main terminal consists of 6 surface storage tanks totaling 2,000,000 barrels of capacity, crude oil pumping stations, metering stations, and control and maintenance facilities.

Each marine dock is capable of berthing up to 123,000 Dead Weight Ton (DWT) vessels. Vessel loading or unloading is at the rate of 40,000 barrels per hour at pressures from 50-150 pounds per square inch gauge (psig). Oil Barges may also be loaded at Dock 1 at rates ranging from 3,000 barrels per hour to an 8,000 barrel per hour rate.

These surface facilities also have their own award winning, trained fire fighting crews and fire protection system. Likewise, each of the dock platforms has been designed to contain a 666-barrel oil spill before overflowing. Additional containment equipment stored at the terminal includes, approximately, 2,000 feet of containment boom, and several boats for immediate spill boom deployment and oil spill containment.

SPR: From Louisiana's Wetlands to Wall Street

The Strategic Petroleum Reserve (SPR) is now 25 years old (1978 - 2003). Current capital improvements will extend the operating life to the year 2025.

SPR staff benchmark their operation against similar international facilities. The SPR is the lowest cost operation of its kind in the world.

Cost Categories	Cost Range
Storage Development Cost	$4.50 - $5.00/barrel (bbl)
Operating Costs	$0.205/bbl
Drawdown Costs	$0.15/bbl

Not only does the Department of Energy (DOE) SPR staff maintain efficient economic operations, but their environmental record has earned award winning performance. Each site has an emergency response team equipped to respond should an emergency situation develop.

DOE's SPR is a responsible operator in Louisiana's Wetlands. This is yet another example of the successful coexistence of oil and gas operations within a sensitive environmental setting while complying with State laws and regulations.

This successful coexistence then facilitates a crucial consumer service: a price discovery mechanism for Wall Street which further facilitates least cost delivery of energy products to America's Consumers.

A most important role for the St. James terminal location, and associated pipeline intersections, is in representing the standards for two forms of Futures contracts in crude oil: (1) St. James Light Sweet Crude Oil, and (2) Mars Sour Crude Oil. Both of these are reference contracts on the New York Mercantile Exchange (NYMEX). [For further information on this Futures market reference see Part 3 of this 7 Part series].

The current SPR inventory by type of crude oil, as of September 8, 2003, was:

Sweet	233.8 million barrels
Sour	384.6 million barrels
Total	618.4 million barrels

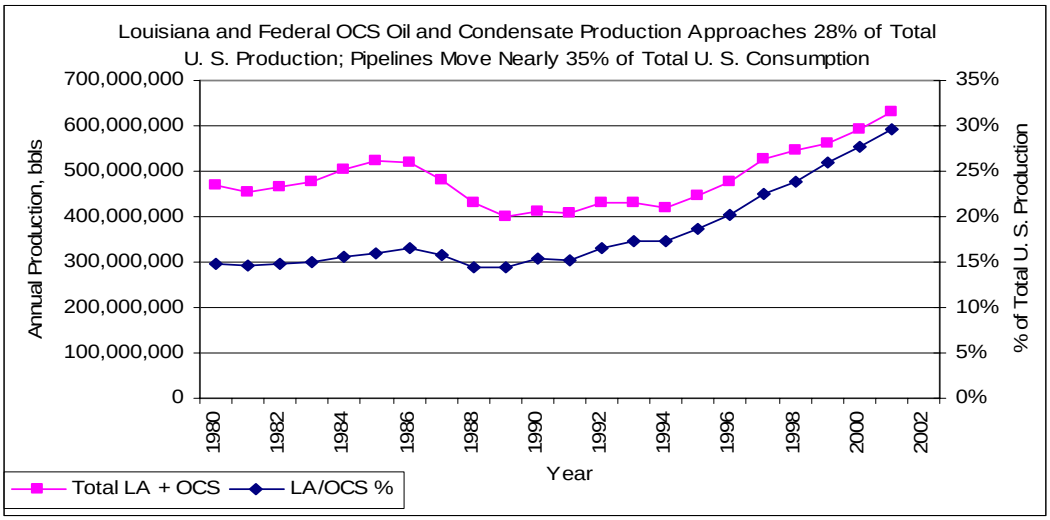
NOTE: The Department of Natural Resources wishes to thank the Department of Energy for its cooperation in assembling this part of our 7 part series. We would especially like to thank the retired Deputy Assistant Secretary for Petroleum Reserves, Richard Furiga and Director of Planning and Engineering, Dave Johnson, of Washington, D. C.; Special Assistant to the SPR Project Manager, Ann Rochon, Director, Crude Oil, Drawdown Readiness, and Cavern Integrity Division, Nabil Shourbaji, and Petroleum Engineer, Robert Myers, all from the New Orleans office; and to the Research Librarians at the State Library of Louisiana.

Originally Published in November 2003 Louisiana Energy Facts

The Louisiana Offshore Oil Port (LOOP) and Connected Interstate Delivery Network

Part 3 of a series of 7 articles

As the nation's reliance on imports has grown, so too has the domestic reliance on increased deepwater production, much of it flowing through the LOOP offshore facility to shore.



History of LOOP

In 1972, just as U. S. production peaked and oil import growth accelerated (see graph in Part 2 of this 7 part series), several major oil companies with growing reliance on imported oil to fuel their own refineries organized a company for the purpose of constructing and operating an oil import terminal. The new maritime construction and shipping technology of ultra large crude oil carriers (ULCC), and very large crude carriers (VLCC), was changing the economics of oil transport. LOOP's license to construct and operate the deepwater port was issued in 1977.

As with the Strategic Petroleum Reserve (SPR), the most likely location for such a terminal was along the Gulf Coast within the arc of the bulk of the nation's refining capacity in Louisiana and its east-west bordering states, Texas and Mississippi, and where access to salt dome storage would safely lower the capital and operating costs of large inventories of crude oil.

Since bringing these ULCCs and VLCCs into an onshore port was both risky, as well as politically sensitive, and offloading their cargo into smaller tankers in deeper water was inefficient and expensive, it was logical to think in terms of an offshore location away from land. These ULCC and VLCC ocean going vessels can carry as much as 4.2 million barrels of crude oil, draw an 85 foot draft, range in length up to 1,500 feet and 280 feet in width. The location selected was in the Gulf of Mexico about 18 miles south of Leeville and Grand Isle, Louisiana in

110 feet of water, and already the site of considerable drilling and production activity at Bay Marchand.

Construction began in 1978. LOOP became operational in 1981. LOOP operates under both a Federal and a State of Louisiana regulatory regime. The Coast Guard coordinates all federal agency activity relative to deepwater ports, and the Louisiana Offshore Terminal Authority (LOTA) performs the same on behalf of the State of Louisiana.

LOOP's environmental record has been exemplary. There has been no major oil spill since operations began in 1981. The LOOP Environmental Monitoring Program is conducted on a routine basis to insure there are no adverse environmental impacts resulting from the operation of the facility.

The current owners of LOOP are Ashland Inc., Marathon Ashland Pipe Line LLC, Murphy Oil Corporation (a major refiner of crude oil), Shell Pipeline Company LP and Shell Oil Company (a major international oil company), and the American unit of Royal Dutch Shell of the Hague, Netherlands.

Louisiana's Wetland Resources Ideal for LOOP Facilities

LOOP's offshore facilities comprise the Marine Terminal (two platforms; one pumping, the other control and living quarters), and three single point mooring buoys (SPM). Tankers from around the world including, but not limited to, the Middle East, West Africa, the North Sea, Columbia, South America, Mexico and Russia deliver crude oil to LOOP. These tankers tie up to the SPM buoys and are able to operate in, virtually, all weather and current conditions.

The Marine Terminal has four 7,000 horsepower (HP) pumps available for offloading tankers. The Marine terminal can accommodate 100,000 barrels per hour flow rates. Approximately, 365,000,000 barrels per year of imported oil flow through this offshore terminal. Oil flows to shore through a 48" pipeline. A booster station is located at Fourchon, the point where the 48" line comes ashore (near Leeville, Louisiana on the Gulf of Mexico). The Fourchon booster station is powered by four 6,000 HP pumps. Fourchon also has the facilities to pump diesel through a 4" line out to the Marine terminal for fuel supply.

Oil flows 25 miles inland from the Fourchon station to the Clovelly terminal through a 48" pipeline. LOOP has over 48,000,000 barrels of subsurface salt dome storage capacity at the Clovelly Dome Storage Terminal.

The subsurface storage capacity is contained in eight subsurface caverns, each with more than 5,000,000 barrels capacity. There is a 25,000,000 barrel surface brine storage reservoir at the Clovelly terminal. Brine is pumped into the caverns to displace the oil from them for transport through the connecting pipeline system to other pipelines and on to refineries. When oil is pumped into storage, brine is displaced into the brine reservoir. The brine storage reservoir covers 220 acres.

All of this flow is controlled by Oil Movement Controllers (OMCs), stationed at LOOP's control center located in Galliano, Louisiana. Like the Marine terminal, the control center is manned 24 hours per day.

LOOP also operates a 53 mile, 48" pipeline system connecting the Clovelly site to the St. James, Louisiana terminal. Through these interconnections, and four other pipeline connections onshore, LOOP handled crude oil can reach nearly 50% of the nation's refining capacity, from within Louisiana, to the Texas City area to the west, and to the Midwest and Upper Midwestern part of the United States through the 40" Capline system. LOOP can, also, access three of four SPR sites. (Note: When the SPR is included, flow reaches nearly 50% of the nation's refining capacity.)

The Deepwater Connection

Shell Oil Company has made several discoveries in the Mississippi Canyon area of the deepwater Gulf. Shell's production from Ursa, Mensa, and Mars platforms commingles with production from the Amberjack pipeline volumes to make up the MARS Blend sour crude oil ("sour" referring to sulfur content).

The MARS pipeline system takes its production from these deepwater offshore platforms to LOOP's Clovelly terminal and, subsequently, flows on to the refineries just as the imported oil is handled.

British Petroleum (BP) operates the Thunderhorse discovery in the deepwater Gulf. Thunderhorse is the largest oil discovery to date in the deepwater. Thunderhorse oil will be pumped to the LOOP Clovelly terminal then, subsequently, on to refineries as MARS and the imported oils are handled.

The NYMEX Connection

Producers of commodity type products use a Commodities Futures Market to better manage their price and volume risk as they sell and buy products with various counterparties—counterparties are the other parties to the transaction, be it buying or selling. To become a reference point for crude oil on the Futures Exchanges, such as the New York Mercantile Exchange (NYMEX), the facilities to handle a large volume of oil product of a consistent grade and to transport said product to many points, is essential. This is what the LOOP and St. James terminal locations offer. St. James is a major crude oil gathering, trading, storage, and distribution hub for, approximately, 2,000,000 barrels per day of crude oil. The St. James hub is one of the world's premier trading hubs.

The contracts are referenced at St. James: (1) the Louisiana Light Sweet Crude Oil (LLS), and (2) MARS Blend Sour Crude Oil (MARS) is referenced at LOOP. The LLS crude is a high quality premium crude oil, low in sulfur content. The MARS Blend is a medium sour blend crude and serves as a price reference with Kuwaiti Medium, Arab Medium, and Latin American

sour crude oils, linking it to the world market. Both types of crude oil flow at a rate of about 400,000 barrels per day through the St. James hub.

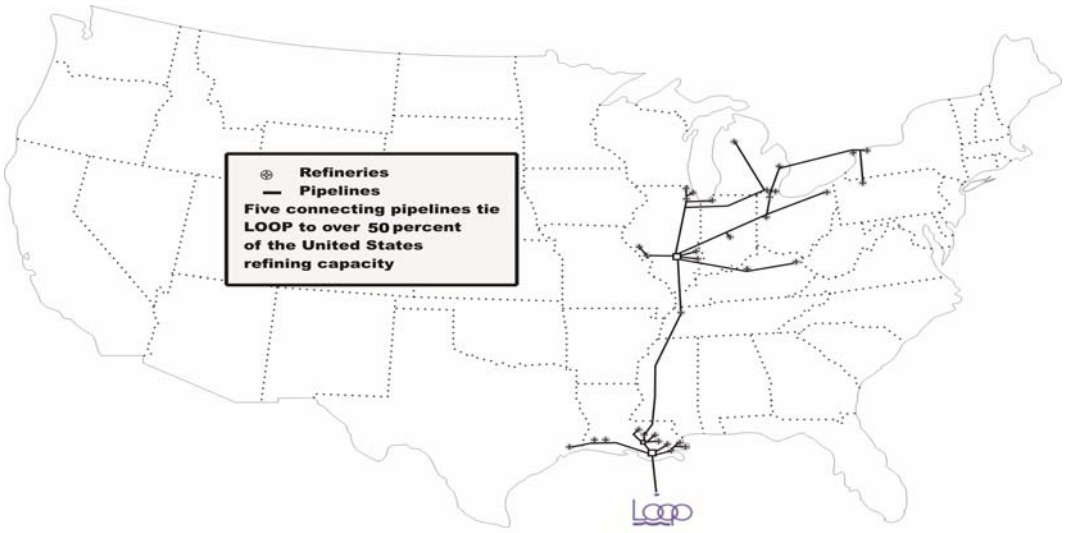
Capline

Several major pipelines transport crude oil out of Louisiana in north, east, west, northwest, and northeast directions. But of these entire pipeline delivery systems, one of the most important is the Capline system, operated by Shell Pipeline Company. Capline delivers crude oil to the important consumption areas of the Midwestern markets, serving refineries near Memphis, St. Louis, Chicago, Detroit, Toledo, Cleveland, Canton and Ashland (Kentucky). Capline has a flow capacity in excess of 1,100,000 barrels per day from the St. James terminal hub.

America's Wetlands: Energy Corridor to the Nation

Taken together, LOOP, LOCAP, SPR, Bayou Choctaw, St. James, Capline and the NYMEX financial market connections, the Louisiana Wetlands Resources play an extraordinarily prominent role in the daily life and financial stability of America's consumers, corporations, and the nation's energy security.

A Schematic of the Geographic Area Served through Louisiana's Wetlands Resources



NOTE: The Department of Natural Resources wishes to thank the staff of the Louisiana Offshore Oil Port (LOOP) for its cooperation in assembling this part of our 7 part series, as well as, the Louisiana Offshore Terminal Authority (LOTA), Department of Transportation and Development, Baton Rouge, LA, and the Research Librarians at the Louisiana State Library.

Originally Published in November 2003 Louisiana Energy Facts

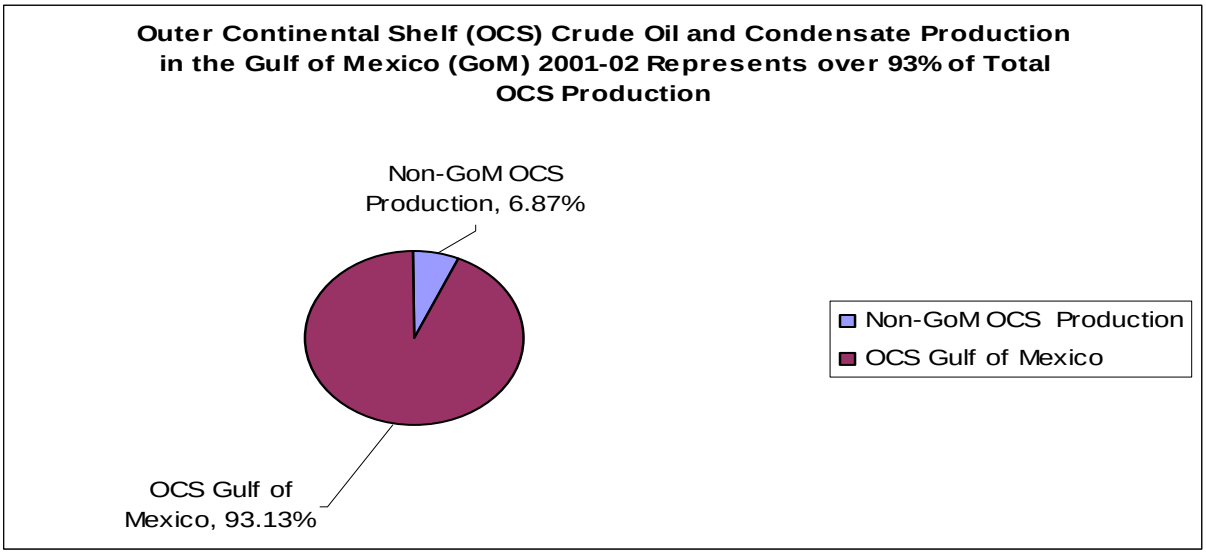
The Louisiana Oil Spill Coordinator's Office (LOSCO): A Responsible Steward of Wetland Resources

Part 4 of a series of 7 articles

Federal Oil Pollution Act of 1990

The year 1989 was a year filled with international events of global impact, the Exxon Valdez oil spill off the Alaskan coast was one such event. The spill triggered passage of the Federal Oil Pollution Act of 1990 (OPA) (33 USC 2701 *et seq*) which incorporated into OPA the requirement for a national contingency plan for cleanup of oil spills and discharges. The Act includes provisions relating to the responsibilities of state agencies designated as natural resources trustees.

Production of oil and condensate in the Gulf of Mexico Outer Continental Shelf (OCS), off of the Louisiana Coast, exceeds 93% of total OCS production in years 2001-2002



Louisiana Recognizes it's Environmental and Energy Challenges and Responsibilities

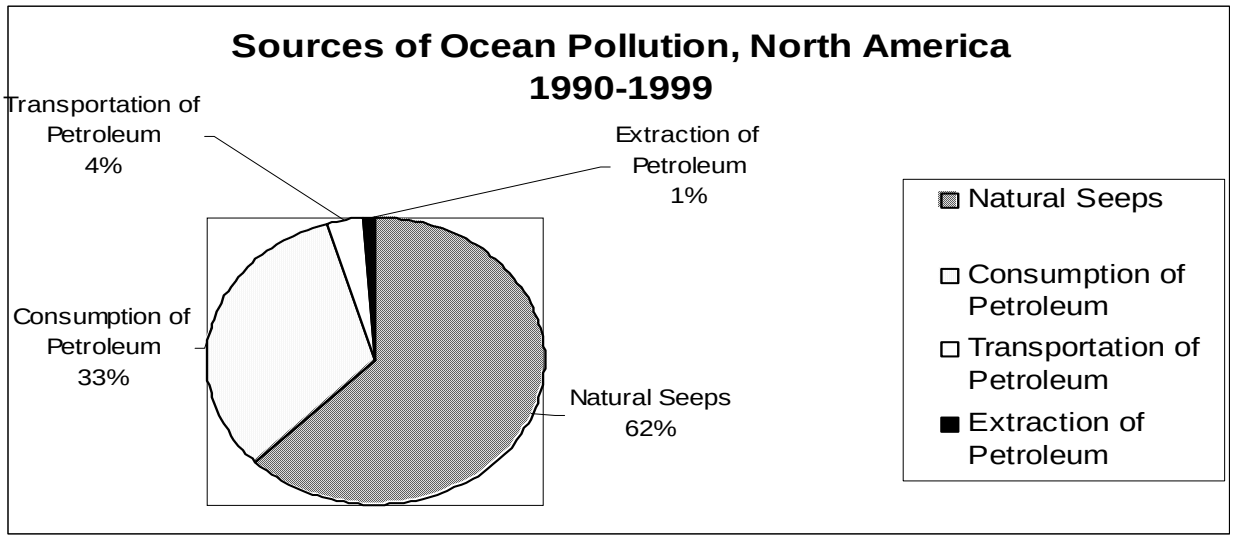
In working with the energy industry, Louisiana has learned that it is possible to live in harmony with the twin goals of environmental protection, and energy exploration and production.
The National Academies Ocean Studies Board Report "Oil in the Seas III", Copyright 2002, noted " …improved production technology and safety training of personnel have dramatically reduced both blowouts and daily operational spills. Today, accidental spills from platforms represent about one percent of petroleum inputs in North American waters and about three percent worldwide."

Petroleum Released to the Marine Waters by Source, 1990-1999 in Thousands of Tonnes

	Best Estimates North America	%	Best Estimates Worldwide	
Natural Seeps	160	62.5%	600	47.3%
Consumption of Petroleum	84	32.8%	480	37.9%
Transportation of Petroleum	9.1	3.6%	150	11.8%
Extraction of Petroleum	3	1.2%	38	3.0%
Total	253.1		1230	

Source: National Academies Oceans Studies Board Report "Oil in the Seas III" Copyright 2002

Drilling for and production of Oil and Natural Gas are responsible for only 1% of ocean pollution in North America



Over the years, and at the direction of the legislature, Louisiana regulatory agencies responsible for oil and natural gas exploration and production (notably the Department of Natural Resources, Office of Conservation, with assistance from the state's universities) have cooperated with, and assisted, the oil and natural gas sectors in the development of techniques and best practices and in implementation of new technologies in order to achieve the significant capability of co-existing safely. Much of the know-how developed here in Louisiana has been transferred around the world as offshore oil and natural gas exploration has proliferated globally.

State Oil Spill Prevention and Response Act of 1991

The Louisiana legislature passed the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA), La. Rev. Stat. 30:2451 *et seq.*, in response to the state's exposure to a major oil spill. The legislature found that, "This exposure, coupled with the limited adequate highway access to the coast …for rapid transportation of oil spill equipment… creates great potential for a major oil spill and its consequences in a state which has 26% of the nation's commercial fisheries, has the nation's highest marine recreational fishery catches, leads the nation in fur production and the world in alligator production, and has more over-wintering waterfowl than any other state."

The Louisiana legislature declared its intent "…to support and complement the Oil Pollution Act of 1990 (33 USC 2701 *et seq*.) and other federal laws, specifically those provisions relating to the national

contingency plan for clean up of oil spills and discharges, including provisions relating to the responsibilities of state agencies designated as natural resources trustees."

One role for the national trustees "…is to restore natural resources held in public trust which have been injured by the release, or threat of release, of oil, thereby, compensating the public for the lost resources and/or services resulting from the incident…."

Protecting the Nation's Energy Corridor

With passage of OSPRA, the Louisiana legislature continued to accept accountability for its national environmental protection and energy production responsibilities by creating the Louisiana Oil Spill Coordinator's Office (LOSCO) within the Office of the Governor. LOSCO was made part of the Governor's Office so that it could serve as the single point of contact for all programs related to oil spills in Louisiana. LOSCO is funded by a two-cent per barrel tax on all oil transported to or from vessels at Louisiana marine terminals. Currently, the legislatively mandated cap on this fund is $7,000,000.

LOSCO's primary function is to ensure effective coordination and representation of the state's interests in all matters related to spill response and prevention. **LOSCO's principal goals are to: (1) minimize unauthorized discharges of oil; (2) provide for an effective spill response; (3) compensate the public for damages to the state's natural resources; and (4) assist the public through education, service, and public outreach.**

Minimize Unauthorized Discharges

Louisiana's natural resources are susceptible to oil spill injury from a variety of sources. The primary objective of LOSCO's Prevention Program is to prevent the occurrence of unauthorized discharges of oil that impact Louisiana's resources. In the past several years, a large component of LOSCO's Prevention Program has focused on identifying potential oil spill locations and assessing the risks associated with these sites. To directly enhance prevention and eliminate the threat of unauthorized discharges, LOSCO has also initiated the Abandoned Barge and Abandoned Facilities Programs.

An inventory of the abandoned vessels/barges in the state's coastal waters was finalized in 1996 and identified approximately 800 abandoned vessels/barges of which roughly 200 were characterized as posing a potential pollution problem. Several barges have been removed through a cooperative federal/state partnership and many owners have removed vessels on a voluntary basis.

A total of, approximately, 25,000 abandoned facilities, pits, sumps, or reservoirs in the Louisiana coastal area have been inventoried and evaluated. The majority of the abandoned sites consisted of wells (60%), facilities (15%), and tank batteries (8%). The remaining sites were classified as manifold headers, metering stations, docks, rigs, and pits. LOSCO established a partnership with the Louisiana Department of Natural Resources/Office of Conservation to plug abandoned wells that pose a high risk for unauthorized discharge of oil, and eliminate the threat of a potential discharge from these sites. This joint venture, funded by industry, has resulted in the plugging and abandonment of numerous wells to date.

Spill Response

LOSCO coordinates the state agencies that are involved in cleanups. A LOSCO staff member is on call 24-hours a day as the State On-Scene Coordinator (SOSC) should the need arise. The response program has one goal – to insure that the state is ready to respond quickly and efficiently to any oil spill emergency and makes every effort to minimize adverse impacts from oil spills**.** LOSCO and its partners in state

government operate under a State Contingency Plan that describes how Louisiana agencies will respond during oil spills. LOSCO and the oil sector operators regularly participate in oil spill drills.
LOSCO has compiled an Environmental Baseline Inventory as the basis for the State Oil Spill Contingency Plan. The statewide inventory incorporates data such as protected areas, sensitive environments, transportation systems, potential oil spill locations, ocean currents, historical hurricane tracks, remedial action facilities, spill locations, and many other features needed for oil spill response and contingency planning.

Public Compensation

When oil spills injure natural resources such as waterways, vegetation, or wildlife, LOSCO and its Trustee partners seek compensation for the public from the responsible party. To guide their efforts they use a process called a Natural Resource Damage Assessment (NRDA).

To assist the natural resource trustees in carrying out their NRDA responsibilities for discharges or substantial threats of discharges of oil, Louisiana trustees have developed a statewide Louisiana Regional Restoration Planning Program (RRP). The goals of this statewide program are to: (1) expedite and reduce the cost of the NRDA process; (2) provide for consistency and predictability; and (3) increase restoration of lost natural resources and services. Attainment of these goals serves to make the NRDA process, as a whole, more efficient in Louisiana.

Research

Cutting edge oil spill research helps to protect Louisiana's uplands, coast, and every habitat in between. Since 1993, the Louisiana Applied and Educational Oil Spill Research and Development Program (OSRADP), LOSCO's research office located at Louisiana State University, has funded 119 subcontracts/letter agreements in support of 85 projects – 34 were funded for two years. These projects have examined response techniques, created new teaching tools, and developed more comprehensive data about spill risks.

Through these accomplishments of LOSCO and its state partners, the Department of Natural Resources, Office of Conservation, and the state's universities, it is possible to understand why the state of Louisiana leads the world in building sound and constructive working relationships with the oil and natural gas exploration, production, transportation, refining and processing sectors, for the ultimate economic benefit of America's consumers—and has been instrumental in transferring this "best practices" safety, and environmentally responsible knowledge, know how, and technology around the globe.

NOTE: The Department of Natural Resources wishes to thank Dr. Karolien Debusschere, Deputy Coordinator of the Louisiana Oil Spill Coordinator's Office, for her critique of, and contributions to, this article. For a much more expansive insight into the programs, services, activities, responsibilities, and capabilities of LOSCO please visit their web site at www.losco.state.la.us.