U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

THE CONTRIBUTION OF GIANT FIELDS TO UNITED STATES OIL PRODUCTION AND RESERVES

by

James W. Schmoker

Open-File Report 99-131

U.S. Geological Survey, Mail Stop 939,
Denver Federal Center, Denver, CO 80225

1999

INTRODUCTION

In the U.S., an oil field is regarded as "giant" if the sum of cumulative production and remaining (proved) reserves exceeds 100 million barrels of oil (mmbo). Giant fields account for a very small fraction of the total number of oil fields discovered in the U.S., but their importance to U.S. production – past and future – vastly exceeds their numerical proportion.

This report presents and interprets production and reserves data for giant U.S. oil fields, for the purpose of better understanding and forecasting U.S. oil production and the U.S. resource base. The primary data used here are arranged by location in two tables. Table 1 provides data for giant U.S. oil fields as of 1/1/98: this table contains field name and location; year of discovery; annual production in 1997; cumulative production, remaining reserves, and the sum of these two quantities (estimated total recovery) as of 1/1/98; and the ratio of remaining reserves to 1997 annual production. Table 2 lists those fields of Table 1 for which production and reserves data were also published in 1990: this table introduces columns for cumulative production, remaining reserves, and estimated total recovery as of 1/1/90; and the change in estimated total recovery between 1/1/90 and 1/1/98.

The data of Table 1 offer a snapshot of production and reserves characteristics of giant fields at one point in time. The estimated size (cumulative production plus proved reserves) of an oil field can change significantly over a relatively short time span because proved reserves are dependent upon factors that do not remain constant: the data of Table 2 capture changes in the sizes of many of these giant fields in the first eight years of the 1990's.

PRODUCTION AND RESERVES AS OF 1/1/98

The list of giant U.S. oil fields presented in Table 1, derived from the International Petroleum Encyclopedia (1998), is probably not exhaustive but appears to be reasonably complete. The implicit assumption is made here that Table 1 is sufficiently inclusive to warrant analysis. Table 1 could be incomplete due to: 1) the general vagaries of data collection and data bases; 2) omission of older fields that recently attained giant-field status; and 3) omission of recently discovered large fields.

Perspectives

The 293 giant U.S. oil fields, of which 16 have estimated total recoveries exceeding 1 billion barrels of oil (bbo), account for about 58% of the discovered oil in the U.S., and for 59% of cumulative U.S. oil production (Figure 1). These fields have contributed substantially to the economic development of the U.S.

As of 1/1/98, the estimated total recovery of oil from all giant fields in the U.S. was 113.1 bbo (Figure 1), which is roughly equivalent to that of Iran or Kuwait (see Masters and others, 1994). Only the Former Soviet Union has produced more oil (128.1 bbo) than the 101.8 bbo produced from giant U.S. oil fields (International Petroleum Encyclopedia, 1998). The giant U.S. oil fields, of themselves, would constitute a world-class oil "country".

The median discovery year for giant U.S. oil fields is 1935, and 90% of their recoverable oil has been produced (Figure 1). Their median and average ratios of remaining oil reserves to annual oil production are low. These data show that the giant oil fields of the U.S. form a mature

producing sector. However, production from these fields is still significant, even on a world scale. Production from giant U.S. oil fields averaged 3.65 mmbo/day in 1997, which is equal to 57% of daily U.S. oil production (Figure 1) and is a rate exceeded worldwide only by Saudi Arabia and the Former Soviet Union (International Petroleum Encyclopedia, 1998).

Fields Having Significant Remaining Potential

The previous discussion did not differentiate between giant fields which have significant remaining potential and those which appear to be in terminal decline. The former fields represent the future of the group; the latter fields have become, at a National perspective, part of history.

The remaining potential of giant U.S. oil fields is evaluated here on the basis of remaining reserves (as of 1/1/98) and annual production (in 1997). Figure 2 shows that, for both measures of remaining potential, relatively few fields account for most of the oil.

Fifty percent of 1997 annual production from all giant U.S. oil fields came from just 11 fields and 80% was supplied by 55 fields (Figure 2A). The distribution of remaining reserves is yet more uneven. As of 1/1/98, 50% of remaining reserves in all giant U.S. oil fields resided in just six fields and 80% was accounted for by 42 fields (Figure 2B).

Using the somewhat arbitrary criteria that giant fields having significant remaining potential are those that account for either 80% of total annual production or 80% of total remaining reserves, 59 giant U.S. oil fields are identified here as having significant remaining potential (Table 3). Of these, 38 fields qualify with respect to both annual production and remaining reserves.

The giant U.S. oil fields having significant remaining potential (Table 3) form a diverse group. They are distributed among 10 states, although most are located in Texas, California, and Louisiana (Figure 3). Common geologic features among these fields, other than access to an excellent oil-charge system, are not obvious, nor are they obvious for giant U.S. oil fields in general.

Field-Size and Oil-Volume Distributions

The field-size distribution of the 293 giant U.S. oil fields listed in Table 1 is extremely skewed (Figure 4A). The coefficient of skewness is 9.1. (A skewness coefficient greater than 1.0 is commonly considered to indicate a highly skewed distribution.) Note that the eye tends to be fooled by Figure 4A: the logarithmic size-category axis, necessary to construct a legible figure, greatly foreshortens the larger field-size categories and thus reduces the apparent skewness.

One hundred and fifty-one fields (almost 52%) have sizes between 100 and 200 mmbo, whereas only eight fields (about 3%) have sizes in the much larger range between 1,600 and 12,800 mmbo (Figure 4A). The biggest field of the group (Prudhoe Bay) is about 65 times larger than the median field of 194 mmbo. If this ratio were to be applied to the height of humans, a median adult height of 5.5 feet would imply the existence of people as tall as 358 feet.

Approximately equal volumes of oil are attributed to field-size categories 1, 2, and 3 (Figure 4B). The volume of oil ascribed to field-size categories 4 through 7 tends to decrease as

size category increases. (Data for size categories 6 and 7 are erratic because each category contains only one field.)

The U.S. is the most thoroughly explored large petroleum region in the world. As such, the field-size and oil-volume distributions for discovered giant U.S. oil fields (Figure 4) might provide as close an approximation to a natural (in situ) population of such fields as is presently known. For this reason, the distributions of Figure 4 could have value as analogs for some of the less explored regions of the world.

CHANGES IN FIELD SIZES BETWEEN 1/1/90 AND 1/1/98

The sizes (estimated total recoveries) of U.S. oil fields commonly change over time, in response to a large number of geological, technical, economic, and regulatory factors (e.g., Arrington, 1960; Attanasi and Root, 1994; Gautier and others, 1995; Schmoker and Crovelli, 1998). Recent changes in the sizes of 209 giant U.S. oil fields (of the 293 fields considered in the previous sections) can be examined here, using the production and reserves data as of 1/1/90 that are provided in Table 2.

Field-Size Changes Measured as Percentages

The great majority (96%) of the fields listed in Table 2 were 20 or more years old at the beginning of 1990; about two-thirds were discovered prior to 1941 (Figure 5). Almost all the fields are well past the period of initial development in which large changes in estimated total recovery can be expected to occur as a field is delineated and production practices are optimized. All U.S. fields are subject to a standard system for reporting remaining reserves, which minimizes capricious field-size changes. One might therefore think that after many years of development and production, the remaining potential of most of these giant oil fields should be well established, but Figure 6 shows that this is not the case.

Of the 209 fields in the data set of Table 2, the size of only 30 fields (14%) remained essentially unchanged on a percentage basis (larger or smaller by 0.5% or less) between 1/1/90 and 1/1/98 (Figure 6A). Sixty-five fields (31%) increased or decreased in size by 0.5 to 4% in this eight-year period, 52 fields (25%) changed in size by 4 to 10%, and 62 fields (30%) changed in size by more than 10%. (These percentage changes are relative to 1/1/90 sizes.) From these data it is apparent that significant adjustments in estimated total recovery have been the norm, and not the exception, for giant U.S. oil fields in the first eight years of the 1990's.

Furthermore, Figure 6A shows that field-size increases outnumbered field-size decreases by more than two to one. Excluding the 30 fields with little percentage change, 126 fields increased in size whereas 53 fields decreased in size.

Production and reserves data as of 1/1/90 are available for 48 of the 59 giant U.S. oil fields having significant remaining potential. The percent-change distribution for these 48 fields (Figure 6B) is weighted more heavily to the right than the distribution for the entire group of giant fields (Figure 6A). Of the fields with significant remaining potential, the size of seven fields remained essentially unchanged on a percentage basis, 37 fields increased in size, and only four fields decreased in size (Figure 6B). More than half of these fields (54%) increased in size by over 10%.

The group of giant U.S. oil fields having significant remaining potential has been buoyed by large recent increases (1/1/90 – 1/1/98) in field sizes (Figure 6B). These large field-size increases could be the result of high annual production rates; conversely, large field-size increases could drive annual production rates. Cause and effect are here complexly interwoven.

Field-Size Changes Measured as Barrels of Oil

Of the 209 giant U.S. oil fields in the data set of Table 2, the size of 29 fields (14%) increased or decreased by only 1 mmbo or less between 1/1/90 and 1/1/98 (Figure 7A). Sixty-seven fields (32%) increased or decreased in size by 1 to 10 mmbo in this eight-year period, 73 fields (35%) changed in size by 10 to 40 mmbo, and 40 fields (19%) changed in size (larger or smaller) by more than 40 mmbo. Changes in estimated total recovery of tens of millions of barrels were common for giant U.S. oil fields in the first eight years of the 1990's (Figure 7A).

The distribution of Figure 7A is weighted toward the right, indicating that field-size increases have added substantially more oil than has been lost by field-size decreases. A number of giant U.S. oil fields have had extraordinarily long reserves lives and are declining at rates below expectations, largely because of the tendency for their estimated total recoveries to increase with time (Hatcher and Tussing, 1997).

The net change in estimated total recovery of the 209 giant U.S. oil fields contributing to Figure 7A (that is, the sum of the 209 individual field-size changes) is an increase of 5,896 mmbo. This volume is equal to 2.5 years of U.S. oil production, assuming average daily production at the 1997 rate of 6.40 mmbo/day (Figure 1).

Of the 48 giant U.S. oil fields having significant remaining potential that are contributing to Figure 7B (a subset of the 59 fields of Table 3), 35 (73%) increased in size by more than 20 mmbo in the first eight years of the 1990's. The net change in estimated total recovery of these 48 fields is an increase of 6,439 mmbo (compared to a net increase of 5,896 mmbo for the parent set of 209 giant fields).

As shown in Figure 7B, the size of two fields having significant remaining potential increased by more than 1,000 mmbo between 1/1/90 and 1/1/98: these Alaskan fields are Prudhoe Bay (2,631 mmbo) and Kuparuk River (1,094 mmbo). The 12 fields of Figure 7B with field-size increases between 100 and 1,000 mmbo are Midway-Sunset (440 mmbo, California), Wasson (288 mmbo, Texas), Belridge S. (268 mmbo, California), Spraberry Trend (201 mmbo, Texas), Slaughter (176 mmbo, Texas), Endicott (153 mmbo, Alaska), Seminole (148 mmbo, Texas), Levelland (130 mmbo, Texas), Rangely (117 mmbo, Colorado), Sho-Vel-Tum (115 mmbo, Oklahoma), Giddings (113 mmbo, Texas), and Cowden N. (111 mmbo, Texas). At the other extreme, East Texas field (Texas) decreased in size by 616 mmbo, and Elk Hills field (California) decreased by 65 mmbo.

Field-Size Changes by Location

Regional differences in patterns of field-size changes exist among the 209 giant U.S. oil fields of Table 2 (Figure 8). The giant fields of five areas had a net increase in estimated total recovery between 1/1/90 and 1/1/98, whereas the giant fields of four areas had a net decrease (Figure 8). The North Slope of Alaska provided the largest net increase, followed by the Permian Basin of West Texas and New Mexico, the San Joaquin Basin of southern California,

and basins of the Midcontinent. The Los Angeles Basin and coastal areas of California (area 5) showed a positive but relatively insignificant net change in estimated total recovery.

Each of the three areas that encompass the U.S. Gulf Coast (areas 6, 7, and 9) had net decreases in estimated total recovery of giant fields (Figure 8). The net change in area 9 would be negative even if the East Texas field (which decreased in size by 616 mmbo) were excluded. In the Rocky Mountains (area 8), only three of 19 giant fields decreased in size, but these decreases were large enough to place the area into the negative-change category.

Producing areas within the U.S. differ from one another with respect to factors affecting field-size changes, such as geologic characteristics, oil-field practices, and perhaps reserves-reporting patterns. Figure 8 illustrates how these differences can lead to very dissimilar regional perceptions of the volume of discovered but yet-to-be-produced oil in the U.S.

SUMMARY

1. In the U.S., a giant oil field is one whose size exceeds 100 mmbo. This study examines 293 giant fields (Table 1), using data as of 1/1/98. Recent changes in the sizes of 209 of these fields (Table 2) are also investigated, using production and reserves data as of 1/1/90.

2. Giant oil fields are still important to the U.S. energy picture (Figure 1). Average daily production in 1997 from giant fields was 3.65 mmbo/day (57% of total U.S. oil production), and remaining reserves were 11.3 bbo (50% of total U.S. remaining oil reserves).

3. Among the 293 giant U.S. oil fields, 59 fields account for 80% of total annual production (in 1997) and 80% of total remaining reserves (as of 1/1/98). These 59 fields (Table 3) are identified here as giant fields having significant remaining potential.

4. The field-size distribution of giant U.S. oil fields (Figure 4), which provides a possible analog for some less explored regions of the world, is highly skewed. One hundred and fifty-one fields have sizes between 100 and 200 mmbo, whereas only eight fields have sizes in the much larger range between 1,600 and 12,800 mmbo.

5. Although the median discovery year of giant U.S. oil fields is 1935, changes in field size (larger or smaller) of tens of millions of barrels were common between 1/1/90 and 1/1/98. The number of fields that increased in size outnumbered those that decreased in size by more than two to one (Figures 6, 7).

6. Changes in individual field sizes in the first eight years of the 1990's were highly variable. Some of this variability is related to regional location (Figure 8). Overall, the estimated total recovery of the 209 giant U.S. oil fields for which necessary data are available for analysis increased by 5,896 mmbo, equal to about 2.5 years of current U.S. oil production. The estimated total recovery of a subset of 48 giant fields having significant remaining potential increased by 6,439 mmbo.

REFERENCES CITED

Arrington, J.R., 1960, Predicting the size of crude reserves is key to evaluating exploration programs: Oil & Gas Journal, v.58, no. 9 (February 29), p. 130-134.

Attanasi, E.D., and Root, D.H., 1994, The enigma of oil and gas field growth: American Association of Petroleum Geologists Bulletin, v. 78, no. 3, p. 321-332.

Gautier, D.L., Dolton, G.L., Takahashi, K.I., and Varnes, K.L., eds., 1995, 1995 National assessment of United States oil and gas resources – Results, methodology, and supporting data: U.S. Geological Survey Digital Data Series DDS-30.

Hatcher, D.B., and Tussing, A.R., 1997, Long reserves lives sustain prospects for independents in the U.S. lower 48: Oil & Gas Journal, v. 95, no. 46 (November 17), p. 49-59.

International Petroleum Encyclopedia, 1990, U.S. fields with reserves exceeding 100 million bbl (data table): Tulsa, OK, PennWell Publishing Co., 378 p.

International Petroleum Encyclopedia, 1998, U.S. fields with ultimate oil recovery exceeding 100 million bbl (data table): Tulsa, OK, PennWell Publishing Co., [CD-ROM].

Masters, C.D., Attanasi, E.D., and Root, D.H., 1994, World petroleum assessment and analysis: Proceedings of the 14th World Petroleum Congress, Chichester, England, John Wiley and Sons, v. 5, p. 529-541.

Schmoker, J.W., and Crovelli, R.A., 1998, A simplified spreadsheet program for estimating future growth of oil and gas reserves: Nonrenewable Resources, v. 7, no. 2, p. 149-155.

General

• Number and estimated total oil recovery of all giant fields:	293 fields, 113.1 bbo
• Number and estimated total oil recovery of giant fields >1 bbo:	16 fields, 42.4 bbo
• Estimated total U.S. oil recovery:	195.6 bbo
• Median discovery year of giant fields:	1935
• Median size of giant fields:	194 mmbo
• Average size of giant fields:	386 mmbo

Annual and Cumulative Production

• Average daily oil production in 1997 from all giant fields:	3.65 mmbo/day
• Average daily U.S. oil production in 1997:	6.40 mmbo/day
• Average daily U.S. oil consumption in 1996:	17.40 mmbo/day
• Cumulative oil production from all giant fields:	101.8 bbo
• Cumulative U.S. oil production:	173.2 bbo

Remaining Reserves

• Remaining (proved) oil reserves in all giant fields:	11.3 bbo
• Remaining (proved) U.S. oil reserves:	22.4 bbo
• Median remaining oil reserves/annual oil production ratio of giant fields:	5.7 years
• Average remaining oil reserves/annual oil production ratio of giant fields:	8.3 years
• Average remaining U.S. oil reserves/annual U.S. oil production ratio:	9.6 years

Figure 1. Numerative overview of giant U.S. oil fields (fields larger than 100 mmbo) as of 1/1/98. Data are from Table 1 and International Petroleum Encyclopedia (1998).
[mmbo = million barrels of oil. bbo = billion barrels of oil.]

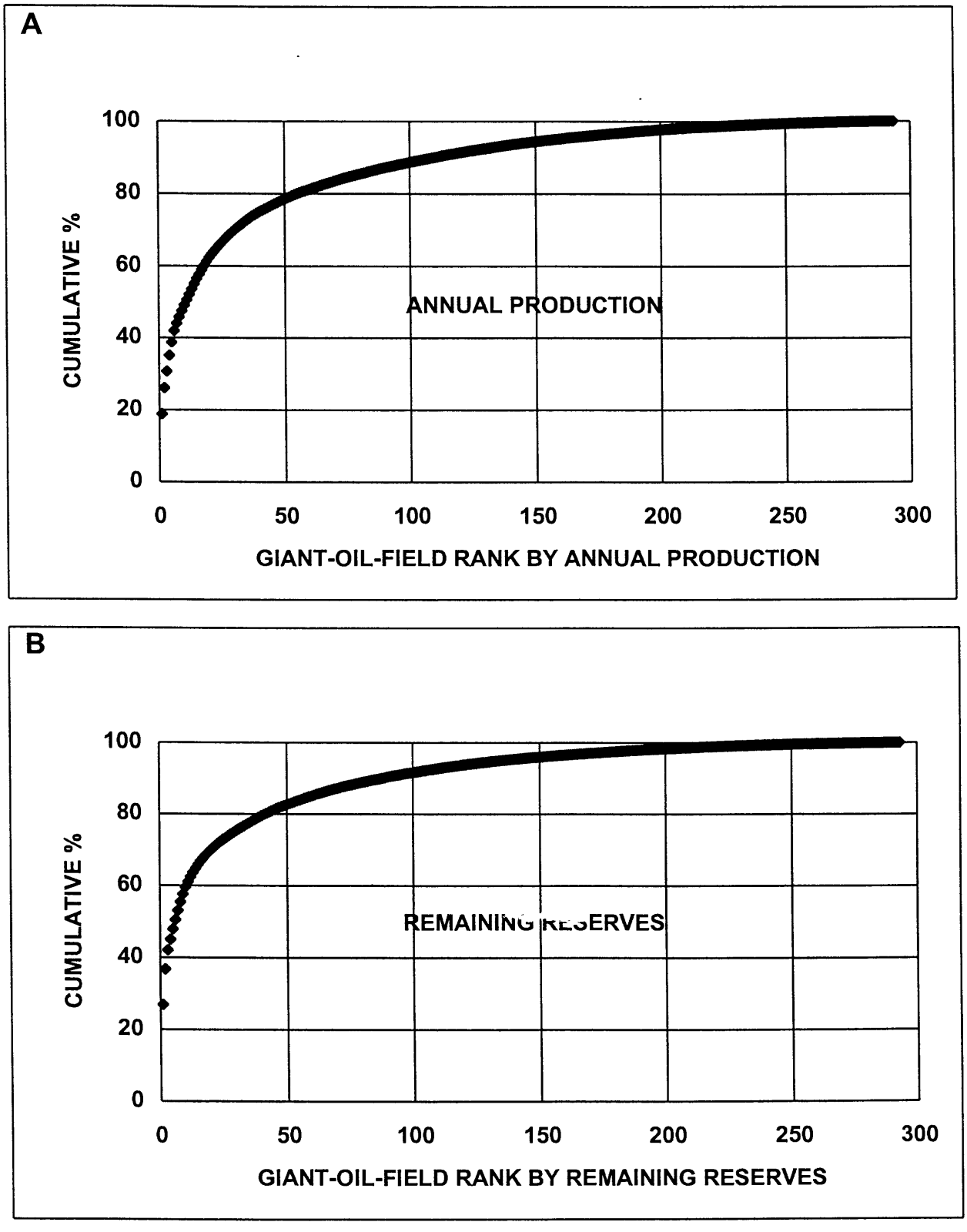

Figure 2. Cumulative percent of total annual production in 1997 (A) and of total remaining reserves as of 1/1/98 (B) for giant U.S. oil fields. Data are from Table 1.

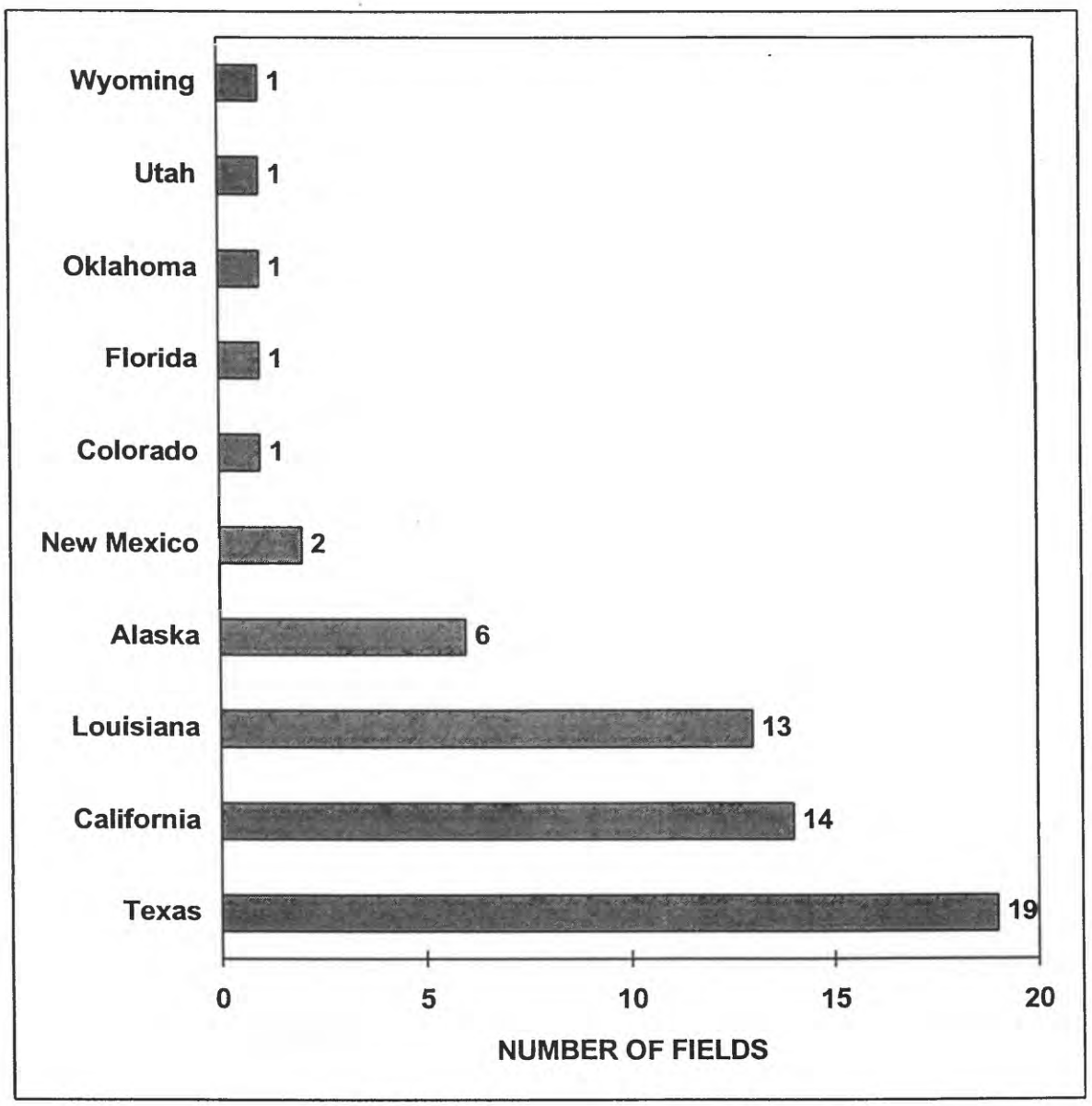

Figure 3. Locations of giant U.S. oil fields having significant remaining potential. These fields are defined and listed in Table 3.

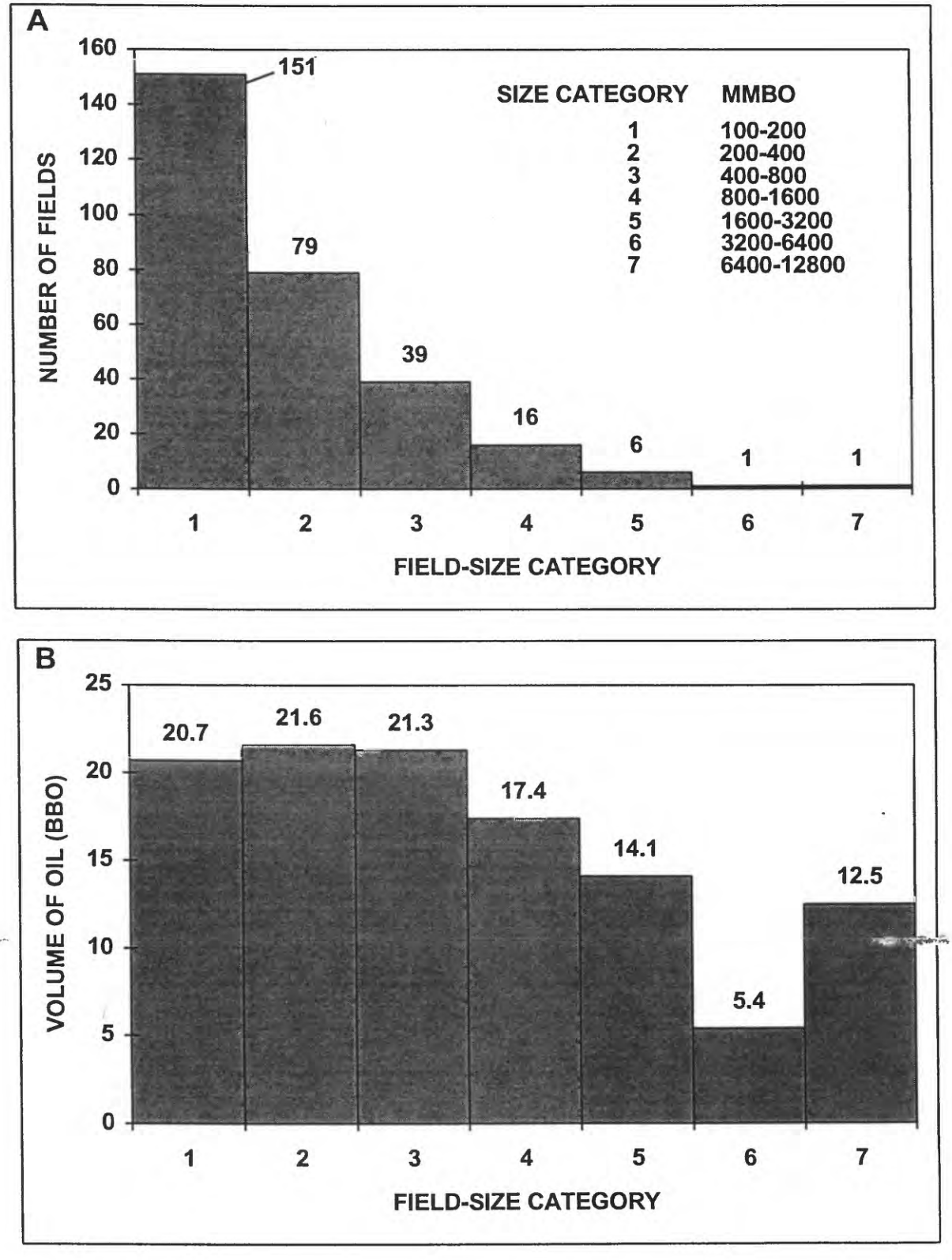

Figure 4. Number of fields (A) and volume of oil (estimated total recovery as of 1/1/98) (B) by field-size category, for giant U.S. oil fields. Data are from Table 1.

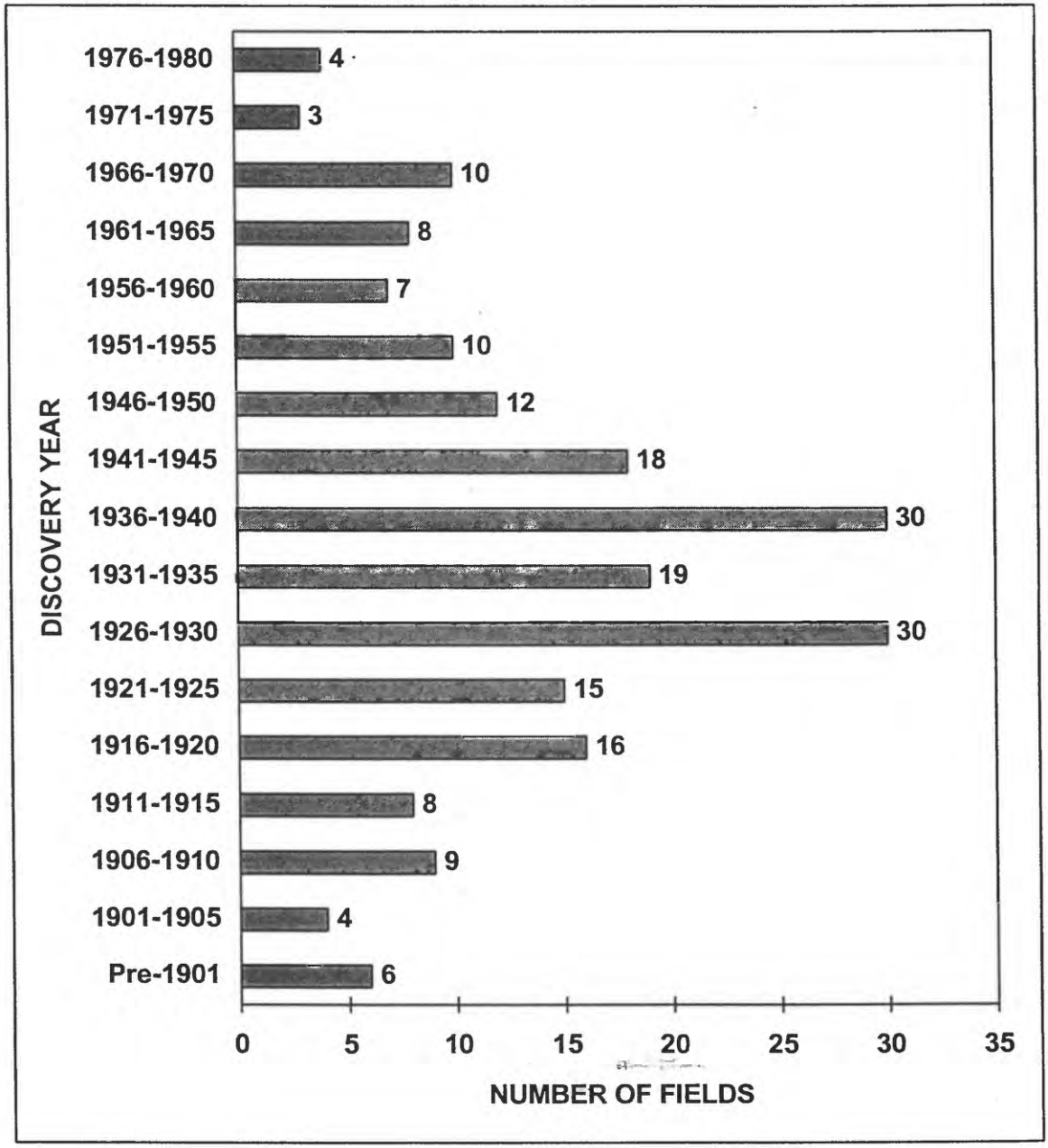

Figure 5. Discovery year of giant U.S. oil fields for which production and reserves data as of 1/1/90 and 1/1/98 are available. Data are from Table 2.

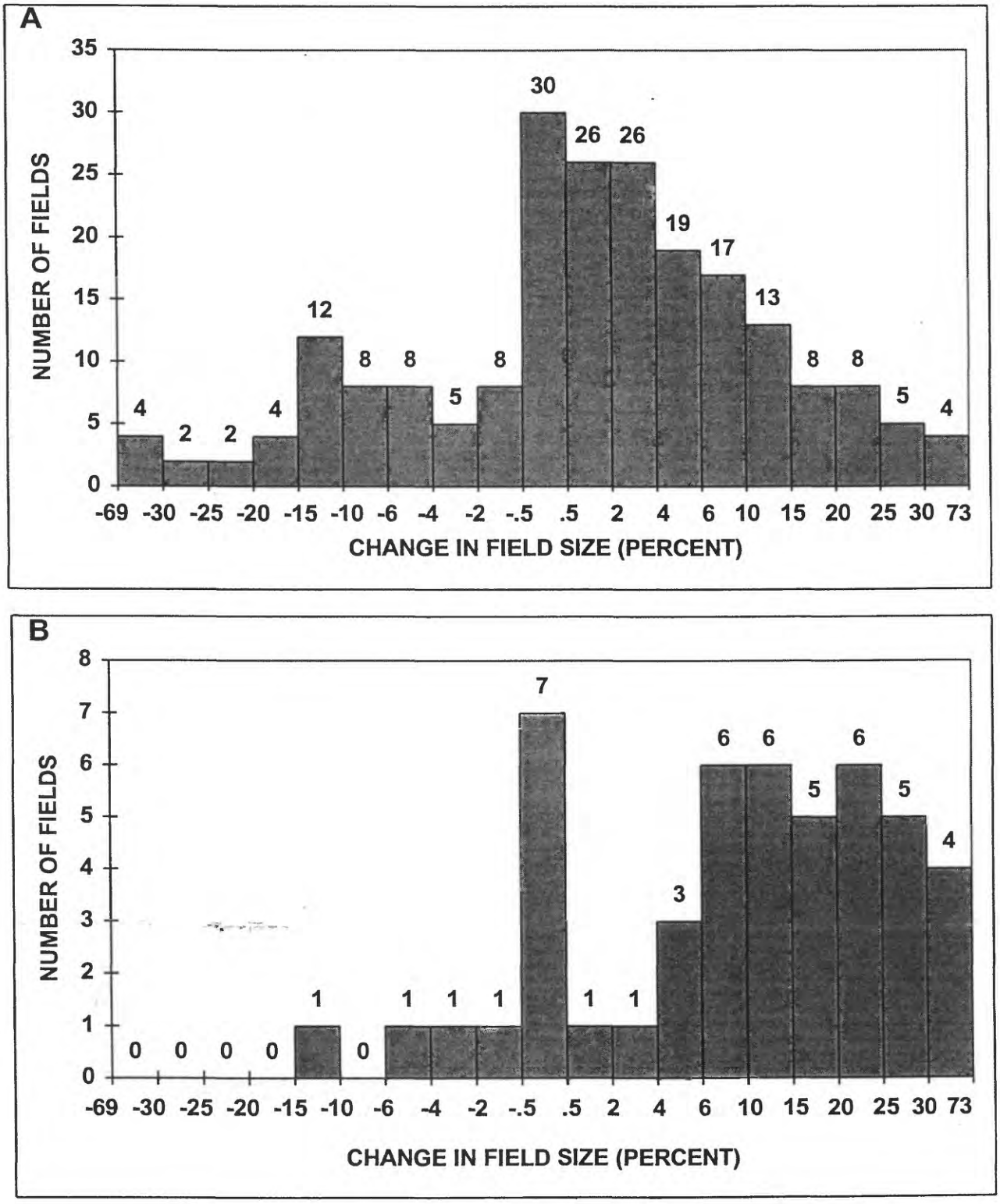

Figure 6. Number of giant U.S. oil fields (A) and number of giant U.S. oil fields having significant remaining potential (B) by change in field size - measured in percent - from 1/1/90 to 1/1/98. Data are from Tables 2 and 3.

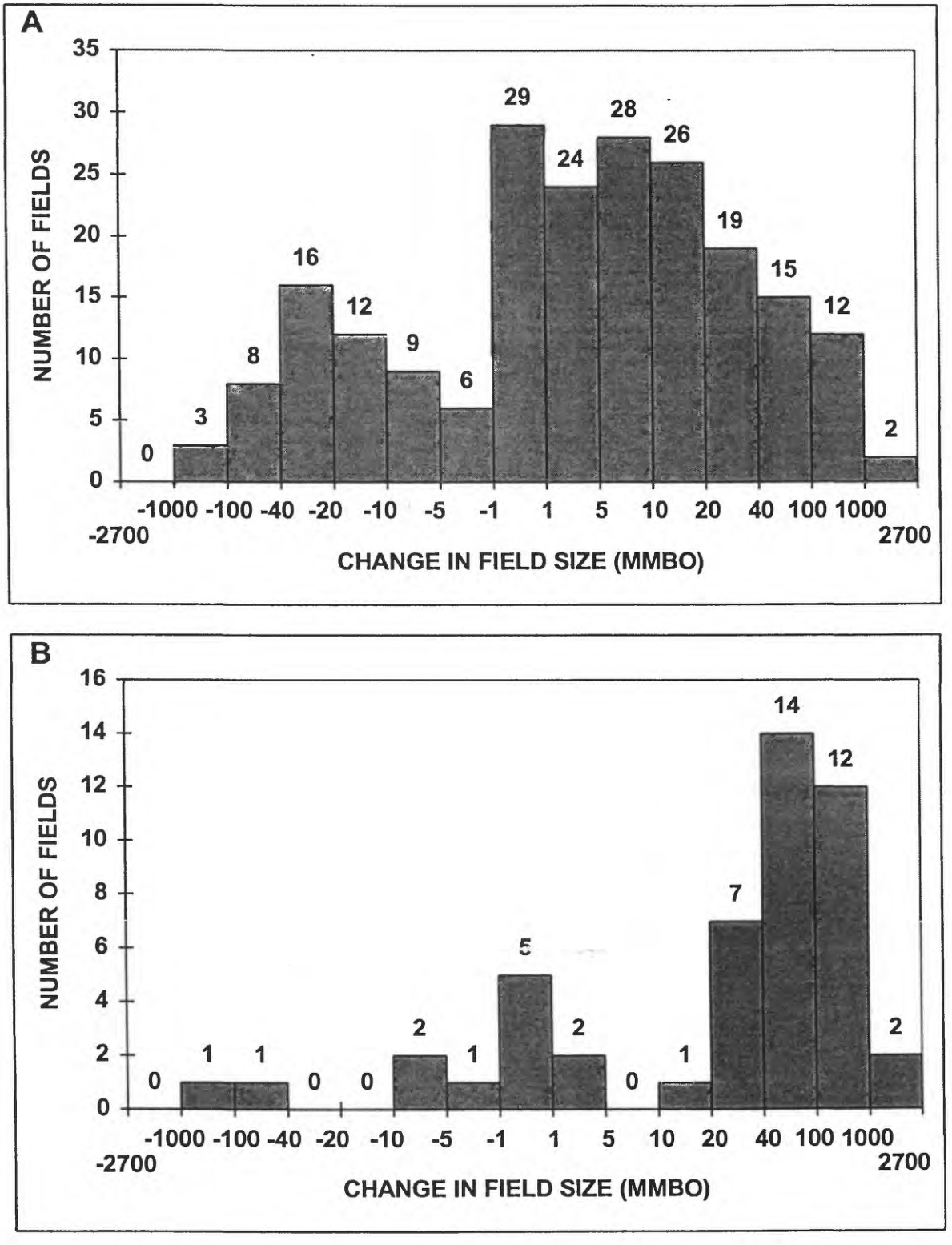

Figure 7. Number of giant U.S. oil fields (A) and number of giant U.S. oil fields having significant remaining potential (B) by change in field size - measured in million barrels of oil - from 1/1/90 to 1/1/98. Data are from Tables 2 and 3.

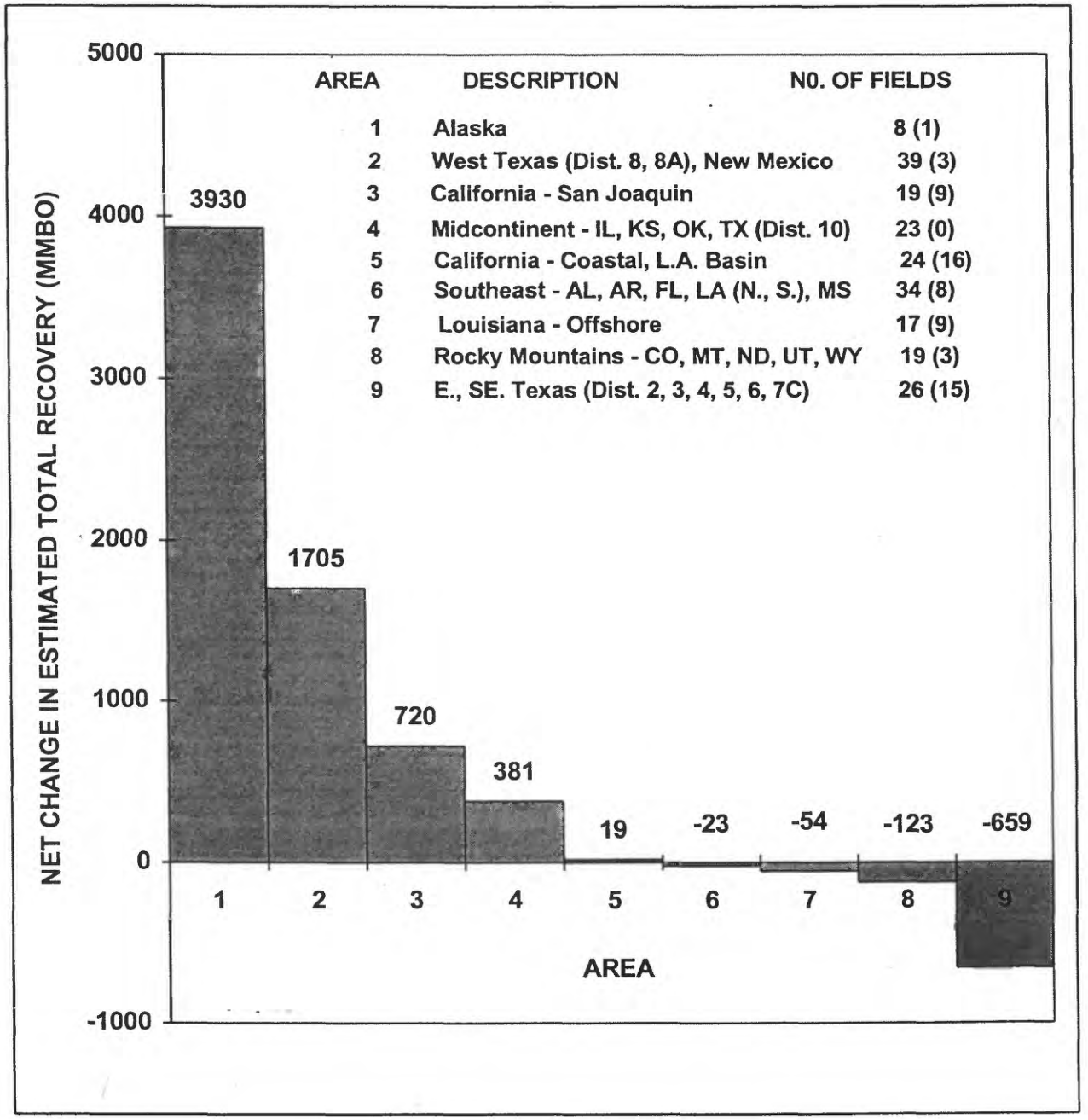

Figure 8. Net change in estimated total recovery from 1/1/90 to 1/1/98 by areas of the U.S., for giant U.S. oil fields. Data are from Table 2. Column for number of fields shows total number and number that declined in size (in parenthesis).

Table 1. U.S. oil fields having estimated total recovery exceeding 100 million barrels of oil (mmbo). [Data are from International Petroleum Encyclopedia (1998). Production and reserves are in mmbo. Estimated total recovery = cumulative production plus remaining reserves. Res./Prod. = ratio of remaining reserves to 1997 production.]

	Field	Location	Discovery Year	Production in 1997	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Res./Prod. (years)
1	Citronelle	Alabama	1955	1.157	159.4	4.4	163.8	3.8
2	Endicott	Alaska	1978	21.000	358.0	170.0	528.0	8.1
3	Granite Point	Alaska	1965	2.000	130.0	16.0	146.0	8.0
4	Kuparuk River	Alaska	1969	96.000	1484.0	1111.0	2595.0	11.6
5	Lisburne	Alaska	1967	3.000	119.0	32.0	151.0	10.7
6	McArthur River	Alaska	1965	5.000	586.0	44.0	630.0	8.8
7	Mid. Ground Shoal	Alaska	1962	2.000	178.6	12.0	190.6	6.0
8	Milne Point	Alaska	1969	19.000	85.0	223.0	308.0	11.7
9	Point McIntyre	Alaska	1988	59.000	212.0	241.0	453.0	4.1
10	Prudhoe Bay	Alaska	1968	251.000	9507.0	3042.0	12549.0	12.1
11	Swanson River	Alaska	1957	1.000	224.4	11.0	235.4	11.0
12	Magnolia	Arkansas	1938	0.330	165.8	2.6	168.4	7.9
13	Smackover	Arkansas	1922	1.570	574.4	4.7	579.1	3.0
14	Belridge N.	Cal.-San Joaq.	1912	1.649	106.4	10.1	116.5	6.1
15	Belridge S.	Cal.-San Joaq.	1911	42.848	1108.6	272.3	1380.9	6.4
16	Buena Vista	Cal.-San Joaq.	1909	0.886	659.2	18.5	677.7	20.9
17	Coalinga	Cal.-San Joaq.	1890	9.732	849.3	57.1	906.4	5.9
18	Coalinga Nose	Cal.-San Joaq.	1938	0.233	503.9	4.5	508.4	19.3
19	Coles Levee N.	Cal.-San Joaq.	1938	0.225	163.1	1.6	164.7	7.1
20	Cuyama S.	Cal.-San Joaq.	1949	0.254	221.5	3.5	225.0	13.8
21	Cymric	Cal.-San Joaq.	1909	13.847	294.2	68.6	362.8	5.0
22	Edison	Cal.-San Joaq.	1928	0.816	141.8	4.6	146.4	5.6
23	Elk Hills	Cal.-San Joaq.	1911	20.529	1119.3	288.6	1407.9	14.1
24	Fruitvale	Cal.-San Joaq.	1928	0.471	120.2	5.9	126.1	12.5
25	Greeley	Cal.-San Joaq.	1936	0.158	114.4	0.8	115.2	5.1
26	Kern Front	Cal.-San Joaq.	1912	2.047	193.3	23.6	216.9	11.5
27	Kern River	Cal.-San Joaq.	1899	48.746	1618.8	329.0	1947.8	6.7
28	Kettleman N. Dome	Cal.-San Joaq.	1928	0.113	458.0	2.3	460.3	20.4
29	Lost Hills	Cal.-San Joaq.	1910	11.520	266.2	51.9	318.1	4.5
30	Midway-Sunset	Cal.-San Joaq.	1894	60.692	2360.1	332.7	2692.8	5.5
31	Mount Poso	Cal.-San Joaq.	1926	1.075	291.5	30.4	321.9	28.3
32	Rio Bravo	Cal.-San Joaq.	1937	0.039	116.6	0.3	116.9	7.7
33	Round Mountain	Cal.-San Joaq.	1927	0.273	98.7	2.1	100.8	7.7
34	Yowlumne	Cal.-San Joaq.	1974	1.101	106.2	11.0	117.2	10.0
35	Carpinteria	Cal.-Coastal	1966	0.768	99.0	9.7	108.7	12.6
36	Cat Canyon E., W.	Cal.-Coastal	1908	0.919	298.0	22.0	320.0	23.9
37	Dos Cuadras	Cal.-Coastal	1969	2.712	241.8	15.0	256.8	5.5
38	Hondo	Cal.-Coastal	1969	16.491	157.8	121.4	279.2	7.4
39	Orcutt	Cal.-Coastal	1901	0.766	172.5	5.5	178.0	7.2
40	Pescado	Cal.-Coastal	1969	15.161	57.4	51.7	109.1	3.4
41	Point Arguello	Cal.-Coastal	1981	10.563	123.2	160.7	283.9	15.2
42	Rincon	Cal.-Coastal	1927	1.006	156.4	3.6	160.0	3.6
43	San Ardo	Cal.-Coastal	1947	4.629	447.2	82.8	530.0	17.9
44	Santa Maria Valley	Cal.-Coastal	1934	0.382	204.2	14.4	218.6	37.7
45	South Mountain	Cal.-Coastal	1916	0.730	152.4	4.6	157.0	6.3
46	Ventura	Cal.-Coastal	1919	5.191	945.3	66.8	1012.1	12.9
47	Beta	Cal.-L.A. Basin	1976	3.009	73.0	140.5	213.5	46.7
48	Beverly Hills	Cal.-L.A. Basin	1900	1.395	135.5	12.1	147.6	8.7
49	Brea-Olinda	Cal.-L.A. Basin	1880	1.382	398.4	40.3	438.7	29.2
50	Coyote E.	Cal.-L.A. Basin	1909	0.381	112.7	9.1	121.8	23.9
51	Dominguez	Cal.-L.A. Basin	1923	0.348	273.7	3.1	276.8	8.9
52	Huntington Beach	Cal.-L.A. Basin	1920	3.682	1099.5	38.6	1138.1	10.5
53	Inglewood	Cal.-L.A. Basin	1924	2.457	365.6	26.7	392.3	10.9
54	Long Beach	Cal.-L.A. Basin	1921	1.683	926.0	18.6	944.6	11.1
55	Montebello	Cal.-L.A. Basin	1917	0.271	195.7	6.3	202.0	23.2
56	Richfield	Cal.-L.A. Basin	1919	0.399	197.6	5.3	202.9	13.3
57	San Miguelito	Cal.-L.A. Basin	1931	0.967	109.6	28.4	138.0	29.4

	Field	Location	Discovery Year	Production in 1997	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Res./Prod. (years)
58	Santa Fe Springs	Cal.-L.A. Basin	1919	0.732	619.9	12.8	632.7	17.5
59	Seal Beach	Cal.-L.A. Basin	1924	0.516	208.9	7.6	216.5	14.7
60	Torrance	Cal.-L.A. Basin	1922	0.789	220.9	18.0	238.9	22.8
61	Yorba Linda	Cal.-L.A. Basin	1930	0.449	91.1	10.2	101.3	22.7
62	Wilmington	Cal.-L.A. Basin	1932	19.779	2497.3	290.9	2788.2	14.7
63	Rangely	Colorado	1933	7.529	833.6	70.4	904.0	9.4
64	Jay	Florida	1970	3.777	395.4	23.1	418.5	6.1
65	Clay City	Illinois	1938	0.975	409.8	6.3	416.1	6.5
66	Dale Consolidated	Illinois	1940	0.077	105.5	0.7	106.2	8.4
67	Lawrence	Illinois	1906	1.743	414.8	5.3	420.1	3.0
68	Louden	Illinois	1938	0.885	396.6	3.6	400.2	4.1
69	Main	Illinois	1906	1.054	246.8	5.8	252.6	5.5
70	New Harmony	Illinois	1938	0.619	160.3	3.1	163.4	5.0
71	Salem	Illinois	1938	0.939	234.9	2.9	237.8	3.1
72	Bemis-Shutts	Kansas	1928	1.024	254.2	6.2	260.4	6.1
73	Chase-Silica	Kansas	1931	0.665	309.4	3.0	312.4	4.5
74	El Dorado	Kansas	1917	0.712	306.0	4.1	310.1	5.8
75	Hall-Gurney	Kansas	1931	0.687	154.0	3.8	157.8	5.5
76	Kraft-Prusa	Kansas	1937	0.351	131.6	2.2	133.8	6.3
77	Trapp	Kansas	1937	0.665	234.2	3.6	237.8	5.4
78	Bay Marchand 2	Louisiana-Off.	1949	5.311	695.2	40.9	736.1	7.7
79	Breton Sound 20	Louisiana-Off.	1953	2.002	114.2	8.8	123.0	4.4
80	Eugene Island 126	Louisiana-Off.	1950	0.689	122.6	5.1	127.7	7.4
81	Eugene Island 175	Louisiana-Off.	1956	3.296	95.4	15.9	111.3	4.8
82	Eugene Island 276	Louisiana-Off.	1964	1.809	89.1	15.6	104.7	8.6
83	Eugene Island 330	Louisiana-Off.	1930	8.655	341.3	47.5	388.8	5.5
84	Garden Banks 426	Louisiana-Off.	1987	22.706	73.1	93.4	166.5	4.1
85	Grand Isle 16	Louisiana-Off.	1948	2.659	285.9	18.4	304.3	6.9
86	Grand Isle 43	Louisiana-Off.	1956	2.884	302.8	48.1	350.9	16.7
87	Grand Isle 47	Louisiana-Off.	1955	1.412	94.6	21.8	116.4	15.4
88	Green Canyon 65	Louisiana-Off.	1984	7.133	93.5	46.5	140.0	6.5
89	Main Pass 35	Louisiana-Off.	1951	0.450	99.4	3.8	103.2	8.4
90	Main Pass 41	Louisiana-Off.	1957	3.841	258.5	17.7	276.2	4.6
91	Main Pass 69	Louisiana-Off.	1948	1.959	261.9	13.0	274.9	6.6
92	Main Pass 144	Louisiana-Off.	1967	1.614	113.7	12.4	126.1	7.7
93	Main Pass 299	Louisiana-Off.	1962	6.903	109.2	45.1	154.3	6.5
94	Main Pass 306	Louisiana-Off.	1969	0.979	212.4	5.4	217.8	5.5
95	Main Pass 311	Louisiana-Off.	1977	2.860	76.6	27.2	103.8	9.5
96	Miss. Canyon 194	Louisiana-Off.	1980	3.213	161.0	59.0	220.0	18.4
97	Ship Shoal 113	Louisiana-Off.	1955	2.019	100.4	24.1	124.5	11.9
98	Ship Shoal 207	Louisiana-Off.	1967	0.510	94.8	6.0	100.8	11.8
99	Ship Shoal 208	Louisiana-Off.	1962	2.170	184.1	12.7	196.8	5.9
100	S. Marsh Island 128	Louisiana-Off.	1974	1.405	114.3	8.9	123.2	6.3
101	South Pass 24	Louisiana-Off.	1950	4.850	284.7	27.9	312.6	5.8
102	South Pass 27	Louisiana-Off.	1954	2.402	152.1	13.4	165.5	5.6
103	South Pass 61	Louisiana-Off.	1968	7.914	203.1	29.2	232.3	3.7
104	South Pass 62	Louisiana-Off.	1965	2.188	127.9	12.5	140.4	5.7
105	South Pass 65	Louisiana-Off.	1965	1.440	121.0	9.2	130.2	6.4
106	South Pass 89	Louisiana-Off.	1969	7.290	154.1	41.6	195.7	5.7
107	S. Timbalier 21	Louisiana-Off.	1939	1.643	234.5	8.4	242.9	5.1
108	West Delta 30	Louisiana-Off.	1949	4.779	496.8	29.6	526.4	6.2
109	West Delta 73	Louisiana-Off.	1962	3.803	230.4	49.6	280.0	13.0
110	West Delta 79	Louisiana-Off.	1966	0.844	148.0	11.0	159.0	13.0
111	Avery Island	Louisiana-S.	1942	0.611	100.0	2.6	102.6	4.3
112	Bay de Chene	Louisiana-S.	1941	0.331	99.1	2.3	101.4	6.9
113	Bay St. Elaine	Louisiana-S.	1928	0.222	167.5	1.0	168.5	4.5
114	Bayou Sale	Louisiana-S.	1941	0.337	165.4	1.3	166.7	3.9
115	Black Bay W.	Louisiana-S.	1953	1.214	159.6	4.6	164.2	3.8
116	Caillou Island	Louisiana-S.	1930	2.882	625.3	16.4	641.7	5.7
117	Cote Blanche Bay W.	Louisiana-S.	1940	0.318	188.2	2.8	191.0	8.8
118	Cote Blanche Island	Louisiana-S.	1948	1.315	188.5	5.3	193.8	4.0

	Field	Location	Discovery Year	Production in 1997	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Res./Prod. (years)
119	Delta Farms	Louisiana-S.	1944	0.271	120.3	2.2	122.5	8.1
120	Garden Island Bay	Louisiana-S.	1934	1.107	230.7	3.8	234.5	3.4
121	Golden Meadow	Louisiana-S.	1938	0.320	139.0	1.2	140.2	3.8
122	Grand Bay	Louisiana-S.	1938	0.559	177.4	2.0	179.4	3.6
123	Hackberry E.	Louisiana-S.	1927	0.317	112.7	4.0	116.7	12.6
124	Hackberry W.	Louisiana-S.	1928	0.398	148.8	2.1	150.9	5.3
125	Iberia	Louisiana-S.	1917	0.235	99.9	0.8	100.7	3.4
126	Jennings	Louisiana-S.	1901	0.137	118.2	1.2	119.4	8.8
127	Lafitte	Louisiana-S.	1935	0.633	264.7	3.5	268.2	5.5
128	Lake Barre	Louisiana-S.	1929	2.095	214.8	11.9	226.7	5.7
129	Lake Washington	Louisiana-S.	1931	1.694	260.2	6.7	266.9	4.0
130	Leeville	Louisiana-S.	1931	0.313	145.9	3.0	148.9	9.6
131	Quarantine Bay	Louisiana-S.	1937	0.888	179.9	6.2	186.1	7.0
132	Romere Pass	Louisiana-S.	1950	0.301	100.9	1.6	102.5	5.3
133	Timbalier Bay onsh.	Louisiana-S.	1938	0.795	306.6	12.6	319.2	15.8
134	Venice	Louisiana-S.	1937	0.200	186.1	3.4	189.5	17.0
135	Vinton	Louisiana-S.	1910	0.172	163.4	1.8	165.2	10.5
136	Weeks Island	Louisiana-S.	1945	3.011	246.3	13.0	259.3	4.3
137	West Bay	Louisiana-S.	1940	0.903	237.1	7.5	244.6	8.3
138	White Castle	Louisiana-S.	1929	0.227	93.5	6.6	100.1	29.1
139	Caddo-Pine Island	Louisiana-N.	1905	1.899	383.6	10.9	394.5	5.7
140	Delhi	Louisiana-N.	1944	0.033	213.5	2.9	216.4	87.9
141	Haynesville	Louisiana-N.	1921	0.630	177.6	3.8	181.4	6.0
142	Homer	Louisiana-N.	1919	0.286	101.4	1.3	102.7	4.5
143	Nebo-Hemphill	Louisiana-N.	1940	1.551	102.8	8.7	111.5	5.6
144	Rodessa	Louisiana-N.	1935	0.211	109.1	1.4	110.5	6.6
145	Baxterville	Mississippi	1944	0.937	252.2	5.2	257.4	5.5
146	Heidelberg	Mississippi	1944	1.996	196.0	5.6	201.6	2.8
147	Tinsley	Mississippi	1939	0.338	224.8	1.3	226.1	3.8
148	Cabin Creek	Montana	1953	1.214	102.2	6.8	109.0	5.6
149	Cut Bank	Montana	1926	0.459	168.2	2.0	170.2	4.4
150	Elk Basin	Montana	1915	0.444	100.1	1.3	101.4	2.9
151	Pennel	Montana	1955	1.905	95.5	11.4	106.9	6.0
152	Pine	Montana	1951	0.757	113.7	3.3	117.0	4.4
153	Blinebry-Drinkard	New Mexico	1945	0.959	142.2	4.1	146.3	4.3
154	Denton	New Mexico	1949	0.519	145.2	2.1	147.3	4.0
155	Empire-Abo	New Mexico	1957	0.556	228.3	2.9	231.2	5.2
156	Eunice-Monument	New Mexico	1929	2.387	147.4	6.6	154.0	2.8
157	Grayburg-Jackson	New Mexico	1929	4.059	118.5	18.3	136.8	4.5
158	Hobbs	New Mexico	1928	2.949	339.4	17.7	357.1	6.0
159	Langlie-Mattix	New Mexico	1935	0.944	135.1	4.6	139.7	4.9
160	Maljamar	New Mexico	1926	1.535	158.6	7.3	165.9	4.8
161	Vacuum	New Mexico	1929	8.015	508.5	31.2	539.7	3.9
162	Beaver Lodge	N. Dakota	1951	0.988	123.5	5.1	128.6	5.2
163	Bowlegs	Oklahoma	1927	0.071	163.7	1.1	164.8	15.5
164	Burbank	Oklahoma	1920	0.672	543.7	2.8	546.5	4.2
165	Cement	Oklahoma	1917	1.077	143.1	5.9	149.0	5.5
166	Cushing	Oklahoma	1912	1.037	508.6	5.8	514.4	5.6
167	Earlsboro	Oklahoma	1926	0.087	203.5	0.8	204.3	9.2
168	Eola-Robberson	Oklahoma	1921	0.374	139.9	1.5	141.4	4.0
169	Fitts	Oklahoma	1933	1.820	219.6	8.3	227.9	4.6
170	Glen Pool	Oklahoma	1905	0.413	333.9	4.6	338.5	11.1
171	Golden Trend	Oklahoma	1945	2.366	502.3	21.0	523.3	8.9
172	Healdton	Oklahoma	1913	1.279	348.7	4.2	352.9	3.3
173	Hewitt	Oklahoma	1919	1.618	285.7	5.4	291.1	3.3
174	Little River	Oklahoma	1927	0.089	142.5	1.8	144.3	20.2
175	Oklahoma City	Oklahoma	1928	0.418	823.3	5.8	829.1	13.9
176	Postle	Oklahoma	1960	1.489	115.9	6.4	122.3	4.3
177	Seminole	Oklahoma	1926	0.125	195.0	1.0	196.0	8.0
178	Sho-Vel-Tum	Oklahoma	1919	10.800	1298.2	52.1	1350.3	4.8
179	Sooner Trend	Oklahoma	1965	2.714	327.6	16.9	344.5	6.2

	Field	Location	Discovery Year	Production in 1997	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Res./Prod. (years)
180	St. Louis	Oklahoma	1925	0.388	181.1	1.4	182.5	3.6
181	Darst Creek	Texas-Dist. 1	1929	0.551	159.2	3.1	162.3	5.6
182	Luling-Branyon	Texas-Dist. 1	1922	0.929	155.7	3.4	159.1	3.7
183	Pearsall	Texas-Dist. 1	1936	1.805	153.3	29.7	183.0	16.5
184	Greta	Texas-Dist. 2	1933	0.277	150.9	1.6	152.5	5.8
185	Lake Pasture	Texas-Dist. 2	1953	0.950	100.1	3.9	104.0	4.1
186	Tom O'Connor	Texas-Dist. 2	1934	2.895	787.7	15.1	802.8	5.2
187	West Ranch	Texas-Dist. 2	1938	0.789	391.9	5.2	397.1	6.6
188	Anahuac	Texas-Dist. 3	1935	0.153	288.2	1.2	289.4	7.8
189	Barbers Hill	Texas-Dist. 3	1916	0.185	113.5	0.8	114.3	4.3
190	Conroe	Texas-Dist. 3	1931	1.160	742.4	4.9	747.3	4.2
191	Giddings	Texas-Dist. 3	1971	16.590	457.0	66.9	523.9	4.0
192	Goose Creek	Texas-Dist. 3	1906	0.488	122.9	1.8	124.7	3.7
193	Hastings E.	Texas-Dist. 3	1934	1.061	707.0	3.2	710.2	3.0
194	High Island	Texas-Dist. 3	1922	1.062	140.3	3.0	143.3	2.8
195	Hull	Texas-Dist. 3	1918	0.411	171.7	2.2	173.9	5.4
196	Humble	Texas-Dist. 3	1905	0.215	99.7	1.1	100.8	5.1
197	Magnet Withers	Texas-Dist. 3	1936	0.916	121.3	5.5	126.8	6.0
198	Manvel	Texas-Dist. 3	1931	0.315	103.5	1.4	104.9	4.4
199	Oyster Bayou	Texas-Dist. 3	1941	0.339	164.6	1.5	166.1	4.4
200	Raccoon Bend	Texas-Dist. 3	1927	0.369	104.8	1.5	106.3	4.1
201	Sour Lake	Texas-Dist. 3	1902	0.494	102.7	7.0	109.7	14.2
202	Thompson	Texas-Dist. 3	1921	1.102	487.9	5.7	493.6	5.2
203	Tomball	Texas-Dist. 3	1933	0.188	123.1	1.0	124.1	5.3
204	Webster	Texas-Dist. 3	1937	1.925	596.2	9.2	605.4	4.8
205	W. Columbia	Texas-Dist. 3	1917	0.150	102.5	2.0	104.5	13.3
206	Agua Dulce-Stratton	Texas-Dist. 4	1928	0.212	148.3	1.4	149.7	6.6
207	Borregos	Texas-Dist. 4	1945	0.031	114.9	0.6	115.5	19.4
208	Kelsey	Texas-Dist. 4	1938	0.052	116.1	0.8	116.9	15.4
209	Plymouth	Texas-Dist. 4	1925	0.075	124.2	1.9	126.1	25.3
210	Seeligson	Texas-Dist. 4	1925	0.081	272.8	0.7	273.5	8.6
211	TCB	Texas-Dist. 4	1944	0.040	113.6	0.6	114.2	15.0
212	White Point E.	Texas-Dist. 4	1938	0.022	104.7	0.6	105.3	27.3
213	Van	Texas-Dist. 5	1928	1.559	541.7	8.3	550.0	5.3
214	East Texas	Texas-Dist. 6	1930	19.213	5271.4	110.2	5381.6	5.7
215	Fairway	Texas-Dist. 6	1960	1.825	210.1	12.8	222.9	7.0
216	Hawkins	Texas-Dist. 6	1940	3.158	865.2	20.4	885.6	6.5
217	Neches	Texas-Dist. 6	1953	0.431	110.1	1.6	111.7	3.7
218	Quitman	Texas-Dist. 6	1948	0.605	129.6	2.7	132.3	4.5
219	Talco	Texas-Dist. 6	1931	0.833	284.9	6.5	291.4	7.8
220	Stephens Cnty Reg.	Texas-Dist. 7B	1916	3.298	172.7	15.7	188.4	4.8
221	Big Lake	Texas-Dist. 7C	1923	0.373	133.6	1.4	135.0	3.8
222	McCamey	Texas-Dist. 7C	1925	0.130	126.3	0.7	127.0	5.4
223	Pegasus	Texas-Dist. 7C	1949	0.814	143.4	3.7	147.1	4.5
224	Andector	Texas-Dist. 8	1946	0.465	186.3	2.4	188.7	5.2
225	Block 31	Texas-Dist. 8	1945	1.114	238.6	7.8	246.4	7.0
226	Cowden N.	Texas-Dist. 8	1930	9.595	598.3	50.5	648.8	5.3
227	Cowden S.-Foster-J.	Texas-Dist. 8	1930	5.015	560.9	28.4	589.3	5.7
228	Dollarhide	Texas-Dist. 8	1945	2.880	219.0	17.8	236.8	6.2
229	Dune	Texas-Dist. 8	1938	1.149	199.4	6.3	205.7	5.5
230	Fuhrman-Mascho	Texas-Dist. 8	1930	1.201	117.1	3.2	120.3	2.7
231	Fullerton	Texas-Dist. 8	1942	6.655	412.1	35.2	447.3	5.3
232	Goldsmith	Texas-Dist. 8	1934	4.198	799.3	26.9	826.2	6.4
233	Hendrick	Texas-Dist. 8	1926	0.357	256.4	1.8	258.2	5.0
234	Howard-Glasscock	Texas-Dist. 8	1925	4.215	447.9	20.8	468.7	4.9
235	Iatan E.	Texas-Dist. 8	1926	2.137	165.3	12.7	178.0	5.9
236	Jordan	Texas-Dist. 8	1937	0.611	135.5	3.0	138.5	4.9
237	Kermit	Texas-Dist. 8	1928	0.271	116.5	1.6	118.1	5.9
238	Keystone	Texas-Dist. 8	1930	1.414	325.7	5.5	331.2	3.9
239	Mabee	Texas-Dist. 8	1943	2.440	108.1	13.7	121.8	5.6
240	McElroy	Texas-Dist. 8	1926	7.455	540.1	36.4	576.5	4.9

Field	Location	Discovery Year	Production in 1997	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Res./Prod. (years)
241 Means	Texas-Dist. 8	1934	4.213	275.6	25.3	300.9	6.0
242 Midland Farms	Texas-Dist. 8	1944	1.488	261.0	7.6	268.6	5.1
243 Penwell	Texas-Dist. 8	1926	1.585	122.4	7.8	130.2	4.9
244 Sand Hills	Texas-Dist. 8	1931	2.210	268.0	13.0	281.0	5.9
245 Shafter Lake	Texas-Dist. 8	1947	1.415	106.2	4.9	111.1	3.5
246 Spraberry Trend	Texas-Dist. 8	1951	23.414	816.0	95.9	911.9	4.1
247 TXL	Texas-Dist. 8	1944	2.295	276.9	11.2	288.1	4.9
248 Waddell	Texas-Dist. 8	1927	1.055	106.8	3.6	110.4	3.4
249 Ward S.	Texas-Dist. 8	1938	0.356	109.1	1.5	110.6	4.2
250 Ward Estes N.	Texas-Dist. 8	1929	2.405	391.1	23.5	414.6	9.8
251 Westbrook	Texas-Dist. 8	1920	1.278	103.0	6.6	109.6	5.2
252 Yates	Texas-Dist. 8	1926	20.310	1356.1	598.4	1954.5	29.5
253 Adair	Texas-Dist. 8A	1947	0.822	115.7	2.4	118.1	2.9
254 Anton-Irish	Texas-Dist. 8A	1944	1.527	196.4	10.1	206.5	6.6
255 Cedar Lake	Texas-Dist. 8A	1939	2.695	96.4	15.3	111.7	5.7
256 Cogdell	Texas-Dist. 8A	1949	0.491	299.7	3.7	303.4	7.5
257 Diamond M	Texas-Dist. 8A	1948	0.982	251.7	6.0	257.7	6.1
258 Garza	Texas-Dist. 8A	1926	2.075	127.2	9.1	136.3	4.4
259 Jo-Mill	Texas-Dist. 8A	1953	2.395	147.7	11.4	159.1	4.8
260 Kelly-Snyder	Texas-Dist. 8A	1948	3.145	1295.5	54.5	1350.0	17.3
261 Levelland	Texas-Dist. 8A	1938	11.080	615.7	48.6	664.3	4.4
262 Prentice	Texas-Dist. 8A	1951	3.105	198.6	24.5	223.1	7.9
263 Robertson N.	Texas-Dist. 8A	1956	5.102	113.4	28.9	142.3	5.7
264 Salt Creek	Texas-Dist. 8A	1950	9.191	331.5	46.4	377.9	5.0
265 Seminole	Texas-Dist. 8A	1936	11.950	656.3	57.5	713.8	4.8
266 Sharon Ridge	Texas-Dist. 8A	1923	1.502	100.6	10.6	111.2	7.1
267 Slaughter	Texas-Dist. 8A	1936	15.503	1177.9	77.9	1255.8	5.0
268 Wasson	Texas-Dist. 8A	1936	27.410	1964.1	122.5	2086.6	4.5
269 Welch	Texas-Dist. 8A	1942	2.351	167.7	20.1	187.8	8.5
270 Archer Cnty Reg.	Texas-Dist. 9	1911	0.942	189.8	5.4	195.2	5.7
271 Cooke Cnty Reg.	Texas-Dist. 9	1926	0.687	107.6	3.2	110.8	4.7
272 K-M-A	Texas-Dist. 9	1931	0.833	147.6	2.6	150.2	3.1
273 Walnut Bend	Texas-Dist. 9	1938	0.369	127.1	1.9	129.0	5.1
274 Wichita Cnty Reg.	Texas-Dist. 9	1910	1.855	354.0	9.6	363.6	5.2
275 Wilbarger Cnty Reg.	Texas-Dist. 9	1915	0.411	150.4	2.3	152.7	5.6
276 Young Cnty Reg.	Texas-Dist. 9	1917	0.870	107.4	2.4	109.8	2.8
277 Panhandle	Texas-Dist. 10	1921	5.125	1475.8	31.1	1506.9	6.1
278 Altamont	Utah	1955	1.613	112.2	15.9	128.1	9.9
279 Bluebell	Utah	1949	2.772	140.9	15.9	156.8	5.7
280 Greater Aneth	Utah	1956	5.874	405.0	25.0	430.0	4.3
281 Byron	Wyoming	1918	0.627	127.4	2.4	129.8	3.8
282 Elk Basin	Wyoming	1915	1.805	452.1	12.0	464.1	6.6
283 Frannie	Wyoming	1928	0.285	120.3	1.3	121.6	4.6
284 Garland	Wyoming	1906	2.022	182.9	7.7	190.6	3.8
285 Grass Creek	Wyoming	1914	1.450	201.4	5.6	207.0	3.9
286 Hamilton Dome	Wyoming	1918	1.778	249.5	5.8	255.3	3.3
287 Hartzog Draw	Wyoming	1976	2.111	96.5	12.1	108.6	5.7
288 Lance Creek	Wyoming	1918	0.125	109.1	0.9	110.0	7.2
289 Little Buffalo Basin	Wyoming	1914	0.797	131.3	3.0	134.3	3.8
290 Lost Soldier	Wyoming	1916	2.457	237.2	19.1	256.3	7.8
291 Oregon Basin	Wyoming	1912	4.431	441.8	19.6	461.4	4.4
292 Salt Creek	Wyoming	1889	2.159	658.6	17.5	676.1	8.1
293 Wertz	Wyoming	1921	0.509	113.4	8.7	122.1	17.1
	SUMS		1330.916	101758.7	11303.9	113062.6	8.3 (ave)

Table 2. Giant U.S. oil fields of Table 1 for which production and reserves as of 1/1/90 are available. [Data as of 1/1/98 are repeated from Table 1. Data as of 1/1/90 are from International Petroleum Encyclopedia (1990). Production and reserves are in mmbo. Estimated total recovery = cumulative production plus remaining reserves.]

	Field	Location	Discovery Year	Cum. Production as of 1/1/90	Rem. Reserves as of 1/1/90	Est. Total Recovery as of 1/1/90	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Change in Est. Total Recovery
1	Citronelle	Alabama	1955	149.6	5.2	154.8	159.4	4.4	163.8	9.0
2	Endicott	Alaska	1978	82.1	293.0	375.1	358.0	170.0	528.0	152.9
3	Granite Point	Alaska	1965	111.9	17.0	128.9	130.0	16.0	146.0	17.1
4	Kuparuk River	Alaska	1969	616.1	885.0	1501.1	1484.0	1111.0	2595.0	1093.9
5	Lisburne	Alaska	1967	49.4	161.0	210.4	119.0	32.0	151.0	-59.4
6	McArthur River	Alaska	1965	535.8	40.0	575.8	586.0	44.0	630.0	54.2
7	Mid. Ground Shoal	Alaska	1962	158.6	8.0	166.6	178.6	12.0	190.6	24.0
8	Prudhoe Bay	Alaska	1968	6733.2	3185.0	9918.2	9507.0	3042.0	12549.0	2630.8
9	Swanson River	Alaska	1957	211.3	8.0	219.3	224.4	11.0	235.4	16.1
10	Smackover	Arkansas	1922	559.7	8.0	567.7	574.4	4.7	579.1	11.4
11	Belridge S.	Cal.-San Joaq.	1911	737.3	375.1	1112.4	1108.6	272.3	1380.9	268.5
12	Buena Vista	Cal.-San Joaq.	1909	648.8	36.7	685.5	659.2	18.5	677.7	-7.8
13	Coalinga	Cal.-San Joaq.	1890	764.1	151.0	915.1	849.3	57.1	906.4	-8.7
14	Coalinga Nose	Cal.-San Joaq.	1938	499.8	8.3	508.1	503.9	4.5	508.4	0.3
15	Coles Levee N.	Cal.-San Joaq.	1938	160.9	2.3	163.2	163.1	1.6	164.7	1.5
16	Cuyama S.	Cal.-San Joaq.	1949	218.7	6.5	225.2	221.5	3.5	225.0	-0.2
17	Cymric	Cal.-San Joaq.	1909	209.1	85.2	294.3	294.2	68.6	362.8	68.5
18	Edison	Cal.-San Joaq.	1928	135.7	31.4	167.1	141.8	4.6	146.4	-20.7
19	Elk Hills	Cal.-San Joaq.	1911	927.7	545.5	1473.2	1119.3	288.6	1407.9	-65.3
20	Fruitvale	Cal.-San Joaq.	1928	116.1	13.2	129.3	120.2	5.9	126.1	-3.2
21	Greeley	Cal.-San Joaq.	1936	112.8	1.6	114.4	114.4	0.8	115.2	0.8
22	Kern Front	Cal.-San Joaq.	1912	174.5	53.8	228.3	193.3	23.6	216.9	-11.4
23	Kern River	Cal.-San Joaq.	1899	1253.0	694.5	1947.5	1618.8	329.0	1947.8	0.3
24	Kettleman N. Dome	Cal.-San Joaq.	1928	456.8	1.1	457.9	458.0	2.3	460.3	2.4
25	Lost Hills	Cal.-San Joaq.	1910	183.9	66.7	250.6	266.2	51.9	318.1	67.5
26	Midway-Sunset	Cal.-San Joaq.	1894	1938.8	314.4	2253.2	2360.1	332.7	2692.8	439.6
27	Mount Poso	Cal.-San Joaq.	1926	269.5	73.1	342.6	291.5	30.4	321.9	-20.7
28	Rio Bravo	Cal.-San Joaq.	1937	116.2	1.2	117.4	116.6	0.3	116.9	-0.5
29	Yowlumne	Cal.-San Joaq.	1974	87.4	21.0	108.4	106.2	11.0	117.2	8.8
30	Carpinteria	Cal.-Coastal	1966	90.3	27.1	117.4	99.0	9.7	108.7	-8.7
31	Cat Canyon E., W.	Cal.-Coastal	1908	290.4	44.8	335.2	298.0	22.0	320.0	-15.2
32	Dos Cuadras	Cal.-Coastal	1969	216.9	50.0	266.9	241.8	15.0	256.8	-10.1
33	Hondo	Cal.-Coastal	1969	99.5	102.4	201.9	157.8	121.4	279.2	77.3
34	Orcutt	Cal.-Coastal	1901	166.7	9.4	176.1	172.5	5.5	178.0	1.9
35	Rincon	Cal.-Coastal	1927	149.9	13.7	163.6	156.4	3.6	160.0	-3.6
36	San Ardo	Cal.-Coastal	1947	411.9	119.3	531.2	447.2	82.8	530.0	-1.2
37	Santa Maria Valley	Cal.-Coastal	1934	199.6	38.9	238.5	204.2	14.4	218.6	-19.9
38	South Mountain	Cal.-Coastal	1916	146.7	11.3	158.0	152.4	4.6	157.0	-1.0
39	Ventura	Cal.-Coastal	1919	901.5	90.2	991.7	945.3	66.8	1012.1	20.4
40	Beta	Cal.-L.A. Basin	1976	46.0	168.3	214.3	73.0	140.5	213.5	-0.8

	Field	Location	Discovery Year	Cum. Production as of 1/1/90	Rem. Reserves as of 1/1/90	Est. Total Recovery as of 1/1/90	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Change in Est. Total Recovery
41	Beverly Hills	Cal.-L.A. Basin	1900	124.4	40.5	164.9	135.5	12.1	147.6	-17.3
42	Brea-Olinda	Cal.-L.A. Basin	1880	386.1	52.6	438.7	398.4	40.3	438.7	0.0
43	Coyote E.	Cal.-L.A. Basin	1909	109.2	12.7	121.9	112.7	9.1	121.8	-0.1
44	Dominguez	Cal.-L.A. Basin	1923	269.8	6.9	276.7	273.7	3.1	276.8	0.1
45	Huntington Beach	Cal.-L.A. Basin	1920	1071.5	66.9	1138.4	1099.5	38.6	1138.1	-0.3
46	Inglewood	Cal.-L.A. Basin	1924	348.2	51.4	399.6	365.6	26.7	392.3	-7.3
47	Long Beach	Cal.-L.A. Basin	1921	912.0	15.0	927.0	926.0	18.6	944.6	17.6
48	Montebello	Cal.-L.A. Basin	1917	193.0	9.7	202.7	195.7	6.3	202.0	-0.7
49	Richfield	Cal.-L.A. Basin	1919	190.6	26.0	216.6	197.6	5.3	202.9	-13.7
50	Santa Fe Springs	Cal.-L.A. Basin	1919	614.0	8.1	622.1	619.9	12.8	632.7	10.6
51	Seal Beach	Cal.-L.A. Basin	1924	203.9	13.3	217.2	208.9	7.6	216.5	-0.7
52	Torrance	Cal.-L.A. Basin	1922	213.6	34.3	247.9	220.9	18.0	238.9	-9.0
53	Wilmington	Cal.-L.A. Basin	1932	2318.9	469.0	2787.9	2497.3	290.9	2788.2	0.3
54	Rangely	Colorado	1933	751.7	35.0	786.7	833.6	70.4	904.0	117.3
55	Jay	Florida	1970	365.4	51.2	416.6	395.4	23.1	418.5	1.9
56	Clay City	Illinois	1938	396.1	6.0	402.1	409.8	6.3	416.1	14.0
57	Lawrence	Illinois	1906	397.3	5.0	402.3	414.8	5.3	420.1	17.8
58	Louden	Illinois	1938	389.5	2.8	392.3	396.6	3.6	400.2	7.9
59	Main	Illinois	1906	235.3	5.0	240.3	246.8	5.8	252.6	12.3
60	New Harmony	Illinois	1938	154.5	3.8	158.3	160.3	3.1	163.4	5.1
61	Salem	Illinois	1938	227.4	3.5	230.9	234.9	2.9	237.8	6.9
62	Bemis-Shutts	Kansas	1928	245.2	3.4	248.6	254.2	6.2	260.4	11.8
63	Chase-Silica	Kansas	1931	303.0	3.6	306.6	309.4	3.0	312.4	5.8
64	El Dorado	Kansas	1917	299.4	1.8	301.2	306.0	4.1	310.1	8.9
65	Hall-Gurney	Kansas	1931	147.1	3.1	150.2	154.0	3.8	157.8	7.6
66	Trapp	Kansas	1937	227.4	3.6	231.0	234.2	3.6	237.8	6.8
67	Bay Marchand 2	Louisiana-Off.	1949	606.3	50.0	656.3	695.2	40.9	736.1	79.8
68	Eugene Island 330	Louisiana-Off.	1930	277.7	47.3	325.0	341.3	47.5	388.8	63.8
69	Grand Isle 16	Louisiana-Off.	1948	267.3	82.0	349.3	285.9	18.4	304.3	-45.0
70	Grand Isle 43	Louisiana-Off.	1956	277.4	80.5	357.9	302.8	48.1	350.9	-7.0
71	Main Pass 41	Louisiana-Off.	1957	240.8	20.4	261.2	258.5	17.7	276.2	15.0
72	Main Pass 306	Louisiana-Off.	1969	203.6	76.6	280.2	212.4	5.4	217.8	-62.4
73	Miss. Canyon 194	Louisiana-Off.	1980	121.4	71.8	193.2	161.0	59.0	220.0	26.8
74	Ship Shoal 207	Louisiana-Off.	1967	88.6	37.2	125.8	94.8	6.0	100.8	-25.0
75	Ship Shoal 208	Louisiana-Off.	1962	163.7	61.7	225.4	184.1	12.7	196.8	-28.6
76	S. Marsh Island 128	Louisiana-Off.	1974	81.0	20.0	101.0	114.3	8.9	123.2	22.2
77	South Pass 27	Louisiana-Off.	1954	131.8	68.9	200.7	152.1	13.4	165.5	-35.2
78	South Pass 61	Louisiana-Off.	1968	160.4	40.0	200.4	203.1	29.2	232.3	31.9
79	South Pass 62	Louisiana-Off.	1965	108.6	79.4	188.0	127.9	12.5	140.4	-47.6
80	South Pass 65	Louisiana-Off.	1965	104.8	85.3	190.1	121.0	9.2	130.2	-59.9
81	S. Timbalier 21	Louisiana-Off.	1939	218.3	45.1	263.4	234.5	8.4	242.9	-20.5
82	West Delta 30	Louisiana-Off.	1949	451.8	41.7	493.5	496.8	29.6	526.4	32.9
83	West Delta 73	Louisiana-Off.	1962	192.8	82.2	275.0	230.4	49.6	280.0	5.0

	Field	Location	Discovery Year	Cum. Production as of 1/1/90	Rem. Reserves as of 1/1/90	Est. Total Recovery as of 1/1/90	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Change in Est. Total Recovery
84	Bay de Chene	Louisiana-S.	1941	96.8	17.5	114.3	99.1	2.3	101.4	-12.9
85	Bay St. Elaine	Louisiana-S.	1928	165.3	24.8	190.1	167.5	1.0	168.5	-21.6
86	Bayou Sale	Louisiana-S.	1941	162.1	2.6	164.7	165.4	1.3	166.7	2.0
87	Black Bay W.	Louisiana-S.	1953	147.0	8.3	155.3	159.6	4.6	164.2	8.9
88	Caillou Island	Louisiana-S.	1930	604.7	71.5	676.2	625.3	16.4	641.7	-34.5
89	Cote Blanche Bay W.	Louisiana-S.	1940	183.0	45.0	228.0	188.2	2.8	191.0	-37.0
90	Delta Farms	Louisiana-S.	1944	115.7	6.7	122.4	120.3	2.2	122.5	0.1
91	Garden Island Bay	Louisiana-S.	1934	222.4	30.8	253.2	230.7	3.8	234.5	-18.7
92	Golden Meadow	Louisiana-S.	1938	136.1	3.6	139.7	139.0	1.2	140.2	0.5
93	Grand Bay	Louisiana-S.	1938	170.9	3.4	174.3	177.4	2.0	179.4	5.1
94	Hackberry E.	Louisiana-S.	1927	109.5	7.1	116.6	112.7	4.0	116.7	0.1
95	Hackberry W.	Louisiana-S.	1928	143.4	5.0	148.4	148.8	2.1	150.9	2.5
96	Jennings	Louisiana-S.	1901	116.6	0.5	117.1	118.2	1.2	119.4	2.3
97	Lafitte	Louisiana-S.	1935	256.6	8.2	264.8	264.7	3.5	268.2	3.4
98	Lake Barre	Louisiana-S.	1929	205.1	19.0	224.1	214.8	11.9	226.7	2.6
99	Lake Washington	Louisiana-S.	1931	245.0	13.7	258.7	260.2	6.7	266.9	8.2
100	Leeville	Louisiana-S.	1931	142.2	6.7	148.9	145.9	3.0	148.9	0.0
101	Quarantine Bay	Louisiana-S.	1937	173.4	15.0	188.4	179.9	6.2	186.1	-2.3
102	Timbalier Bay onsh.	Louisiana-S.	1938	297.2	23.2	320.4	306.6	12.6	319.2	-1.2
103	Venice	Louisiana-S.	1937	182.8	6.7	189.5	186.1	3.4	189.5	0.0
104	Vinton	Louisiana-S.	1910	161.3	0.5	161.8	163.4	1.8	165.2	3.4
105	Weeks Island	Louisiana-S.	1945	227.0	20.3	247.3	246.3	13.0	259.3	12.0
106	West Bay	Louisiana-S.	1940	229.5	15.1	244.6	237.1	7.5	244.6	0.0
107	Caddo-Pine Island	Louisiana-N.	1905	364.2	10.0	374.2	383.6	10.9	394.5	20.3
108	Delhi	Louisiana-N.	1944	212.3	34.1	246.4	213.5	2.9	216.4	-30.0
109	Haynesville	Louisiana-N.	1921	169.1	1.5	170.6	177.6	3.8	181.4	10.8
110	Homer	Louisiana-N.	1919	98.8	1.5	100.3	101.4	1.3	102.7	2.4
111	Rodessa	Louisiana-N.	1935	106.4	1.1	107.5	109.1	1.4	110.5	3.0
112	Baxterville	Mississippi	1944	241.4	8.2	249.6	252.2	5.2	257.4	7.8
113	Heidelberg	Mississippi	1944	177.2	9.7	186.9	196.0	5.6	201.6	14.7
114	Tinsley	Mississippi	1939	220.3	2.5	222.8	224.8	1.3	226.1	3.3
115	Cut Bank	Montana	1926	163.1	36.4	199.5	168.2	2.0	170.2	-29.3
116	Pine	Montana	1951	106.4	4.4	110.8	113.7	3.3	117.0	6.2
117	Denton	New Mexico	1949	139.6	2.1	141.7	145.2	2.1	147.3	5.6
118	Empire-Abo	New Mexico	1957	221.6	48.4	270.0	228.3	2.9	231.2	-38.8
119	Eunice-Monument	New Mexico	1929	128.3	8.0	136.3	147.4	6.6	154.0	17.7
120	Hobbs	New Mexico	1928	304.4	20.0	324.4	339.4	17.7	357.1	32.7
121	Maljamar	New Mexico	1926	146.8	3.3	150.1	158.6	7.3	165.9	15.8
122	Vacuum	New Mexico	1929	442.8	40.0	482.8	508.5	31.2	539.7	56.9
123	Beaver Lodge	N. Dakota	1951	113.0	15.2	128.2	123.5	5.1	128.6	0.4
124	Burbank	Oklahoma	1920	537.6	7.5	545.1	543.7	2.8	546.5	1.4
125	Eola-Robberson	Oklahoma	1921	134.0	7.4	141.4	139.9	1.5	141.4	0.0
126	Fitts	Oklahoma	1933	202.4	9.5	211.9	219.6	8.3	227.9	16.0

	Field	Location	Discovery Year	Cum. Production as of 1/1/90	Rem. Reserves as of 1/1/90	Est. Total Recovery as of 1/1/90	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Change in Est. Total Recovery
127	Glen Pool	Oklahoma	1905	328.8	4.1	332.9	333.9	4.6	338.5	5.6
128	Golden Trend	Oklahoma	1945	477.8	25.0	502.8	502.3	21.0	523.3	20.5
129	Healdton	Oklahoma	1913	336.4	7.8	344.2	348.7	4.2	352.9	8.7
130	Hewitt	Oklahoma	1919	270.4	12.0	282.4	285.7	5.4	291.1	8.7
131	Oklahoma City	Oklahoma	1928	817.1	5.0	822.1	823.3	5.8	829.1	7.0
132	Postle	Oklahoma	1960	107.5	13.8	121.3	115.9	6.4	122.3	1.0
133	Sho-Vel-Tum	Oklahoma	1919	1184.3	51.0	1235.3	1298.2	52.1	1350.3	115.0
134	Sooner Trend	Oklahoma	1965	299.4	16.1	315.5	327.6	16.9	344.5	29.0
135	Greta	Texas-Dist. 2	1933	148.1	12.0	160.1	150.9	1.6	152.5	-7.6
136	Lake Pasture	Texas-Dist. 2	1953	89.5	10.9	100.4	100.1	3.9	104.0	3.6
137	Tom O'Connor	Texas-Dist. 2	1934	754.3	48.6	802.9	787.7	15.1	802.8	-0.1
138	West Ranch	Texas-Dist. 2	1938	382.2	8.5	390.7	391.9	5.2	397.1	6.4
139	Anahuac	Texas-Dist. 3	1935	285.6	14.4	300.0	288.2	1.2	289.4	-10.6
140	Conroe	Texas-Dist. 3	1931	730.0	31.0	761.0	742.4	4.9	747.3	-13.7
141	Giddings	Texas-Dist. 3	1971	270.8	140.3	411.1	457.0	66.9	523.9	112.8
142	Magnet Withers	Texas-Dist. 3	1936	112.4	3.5	115.9	121.3	5.5	126.8	10.9
143	Oyster Bayou	Texas-Dist. 3	1941	160.9	17.4	178.3	164.6	1.5	166.1	-12.2
144	Thompson	Texas-Dist. 3	1921	476.1	23.8	499.9	487.9	5.7	493.6	-6.3
145	Tomball	Texas-Dist. 3	1933	121.4	9.6	131.0	123.1	1.0	124.1	-6.9
146	Webster	Texas-Dist. 3	1937	577.2	16.0	593.2	596.2	9.2	605.4	12.2
147	Agua Dulce-Stratton	Texas-Dist. 4	1928	147.0	24.4	171.4	148.3	1.4	149.7	-21.7
148	Borregos	Texas-Dist. 4	1945	114.2	20.0	134.2	114.9	0.6	115.5	-18.7
149	Kelsey	Texas-Dist. 4	1938	115.1	36.0	151.1	116.1	0.8	116.9	-34.2
150	Plymouth	Texas-Dist. 4	1925	123.1	3.1	126.2	124.2	1.9	126.1	-0.1
151	Seeligson	Texas-Dist. 4	1925	271.7	55.3	327.0	272.8	0.7	273.5	-53.5
152	TCB	Texas-Dist. 4	1944	113.0	52.2	165.2	113.6	0.6	114.2	-51.0
153	White Point E.	Texas-Dist. 4	1938	104.1	6.2	110.3	104.7	0.6	105.3	-5.0
154	Van	Texas-Dist. 5	1928	524.7	12.2	536.9	541.7	8.3	550.0	13.1
155	East Texas	Texas-Dist. 6	1930	5044.0	953.5	5997.5	5271.4	110.2	5381.6	-615.9
156	Fairway	Texas-Dist. 6	1960	194.8	15.7	210.5	210.1	12.8	222.9	12.4
157	Hawkins	Texas-Dist. 6	1940	828.4	35.6	864.0	865.2	20.4	885.6	21.6
158	Neches	Texas-Dist. 6	1953	105.0	5.1	110.1	110.1	1.6	111.7	1.6
159	Quitman	Texas-Dist. 6	1948	122.6	7.2	129.8	129.6	2.7	132.3	2.5
160	Big Lake	Texas-Dist. 7C	1923	130.4	3.0	133.4	133.6	1.4	135.0	1.6
161	Andector	Texas-Dist. 8	1946	182.5	5.9	188.4	186.3	2.4	188.7	0.3
162	Block 31	Texas-Dist. 8	1945	223.1	12.0	235.1	238.6	7.8	246.4	11.3
163	Cowden N.	Texas-Dist. 8	1930	501.6	36.5	538.1	598.3	50.5	648.8	110.7
164	Cowden S.-Foster-J.	Texas-Dist. 8	1930	509.5	31.3	540.8	560.9	28.4	589.3	48.5
165	Dollarhide	Texas-Dist. 8	1945	196.3	8.9	205.2	219.0	17.8	236.8	31.6
166	Dune	Texas-Dist. 8	1938	185.3	16.4	201.7	199.4	6.3	205.7	4.0
167	Fullerton	Texas-Dist. 8	1942	355.4	14.8	370.2	412.1	35.2	447.3	77.1
168	Goldsmith	Texas-Dist. 8	1934	762.0	27.3	789.3	799.3	26.9	826.2	36.9
169	Howard-Glasscock	Texas-Dist. 8	1925	409.1	21.4	430.5	447.9	20.8	468.7	38.2

	Field	Location	Discovery Year	Cum. Production as of 1/1/90	Rem. Reserves as of 1/1/90	Est. Total Recovery as of 1/1/90	Cum. Production as of 1/1/98	Rem. Reserves as of 1/1/98	Est. Total Recovery as of 1/1/98	Change in Est. Total Recovery
170	Iatan E.	Texas-Dist. 8	1926	145.8	9.2	155.0	165.3	12.7	178.0	23.0
171	Jordan	Texas-Dist. 8	1937	129.9	1.6	131.5	135.5	3.0	138.5	7.0
172	Keystone	Texas-Dist. 8	1930	314.7	7.8	322.5	325.7	5.5	331.2	8.7
173	McElroy	Texas-Dist. 8	1926	472.2	50.2	522.4	540.1	36.4	576.5	54.1
174	Means	Texas-Dist. 8	1934	234.4	14.2	248.6	275.6	25.3	300.9	52.3
175	Midland Farms	Texas-Dist. 8	1944	245.6	15.0	260.6	261.0	7.6	268.6	8.0
176	Sand Hills	Texas-Dist. 8	1931	250.5	19.3	269.8	268.0	13.0	281.0	11.2
177	Spraberry Trend	Texas-Dist. 8	1951	672.1	39.0	711.1	816.0	95.9	911.9	200.8
178	TXL	Texas-Dist. 8	1944	265.0	5.0	270.0	276.9	11.2	288.1	18.1
179	Waddell	Texas-Dist. 8	1927	101.3	3.2	104.5	106.8	3.6	110.4	5.9
180	Ward Estes N.	Texas-Dist. 8	1929	367.0	73.6	440.6	391.1	23.5	414.6	-26.0
181	Westbrook	Texas-Dist. 8	1920	90.0	14.0	104.0	103.0	6.6	109.6	5.6
182	Yates	Texas-Dist. 8	1926	1199.3	755.2	1954.5	1356.1	598.4	1954.5	0.0
183	Anton-Irish	Texas-Dist. 8A	1944	179.0	21.1	200.1	196.4	10.1	206.5	6.4
184	Cogdell	Texas-Dist. 8A	1949	293.5	39.9	333.4	299.7	3.7	303.4	-30.0
185	Diamond M	Texas-Dist. 8A	1948	240.8	14.7	255.5	251.7	6.0	257.7	2.2
186	Kelly-Snyder	Texas-Dist. 8A	1948	1253.5	96.5	1350.0	1295.5	54.5	1350.0	0.0
187	Levelland	Texas-Dist. 8A	1938	500.0	34.4	534.4	615.7	48.6	664.3	129.9
188	Prentice	Texas-Dist. 8A	1951	166.3	15.0	181.3	198.6	24.5	223.1	41.8
189	Salt Creek	Texas-Dist. 8A	1950	257.8	25.0	282.8	331.5	46.4	377.9	95.1
190	Seminole	Texas-Dist. 8A	1936	541.1	25.0	566.1	656.3	57.5	713.8	147.7
191	Slaughter	Texas-Dist. 8A	1936	1047.7	32.0	1079.7	1177.9	77.9	1255.8	176.1
192	Wasson	Texas-Dist. 8A	1936	1738.1	60.0	1798.1	1964.1	122.5	2086.6	288.5
193	Welch	Texas-Dist. 8A	1942	147.2	11.0	158.2	167.7	20.1	187.8	29.6
194	Panhandle	Texas-Dist. 10	1921	1429.3	14.0	1443.3	1475.8	31.1	1506.9	63.6
195	Altamont	Utah	1955	91.8	228.8	320.6	112.2	15.9	128.1	-192.5
196	Greater Aneth	Utah	1956	359.6	25.0	384.6	405.0	25.0	430.0	45.4
197	Byron	Wyoming	1918	121.6	6.7	128.3	127.4	2.4	129.8	1.5
198	Elk Basin	Wyoming	1915	434.8	22.8	457.6	452.1	12.0	464.1	6.5
199	Frannie	Wyoming	1928	116.9	4.1	121.0	120.3	1.3	121.6	0.6
200	Garland	Wyoming	1906	165.4	6.4	171.8	182.9	7.7	190.6	18.8
201	Grass Creek	Wyoming	1914	187.5	6.6	194.1	201.4	5.6	207.0	12.9
202	Hamilton Dome	Wyoming	1918	232.8	6.0	238.8	249.5	5.8	255.3	16.5
203	Hartzog Draw	Wyoming	1976	72.3	277.9	350.2	96.5	12.1	108.6	-241.6
204	Lance Creek	Wyoming	1918	107.9	0.3	108.2	109.1	0.9	110.0	1.8
205	Little Buffalo Basin	Wyoming	1914	121.2	9.0	130.2	131.3	3.0	134.3	4.1
206	Lost Soldier	Wyoming	1916	210.7	5.8	216.5	237.2	19.1	256.3	39.8
207	Oregon Basin	Wyoming	1912	396.4	25.0	421.4	441.8	19.6	461.4	40.0
208	Salt Creek	Wyoming	1889	634.3	20.2	654.5	658.6	17.5	676.1	21.6
209	Wertz	Wyoming	1921	103.8	11.0	114.8	113.4	8.7	122.1	7.3
		SUMS		79284.5	14244.8	93529.3	89599.5	9825.8	99425.3	5896.0

Table 2

Table 3. Giant U.S. oil fields of Table 1 having significant remaining potential (those that account for 80% of annual production or 80% of remaining reserves). [Data are sorted by rank with respect to annual production. Rank with respect to remaining reserves is also shown. Production and reserves are in mmbo.]

ID No. Table 1	Field	Rank-- production	Rank-- rem. reserves	Production in 1997	Rem. Reserves as of 1/1/98
10	Prudhoe Bay	1	1	251.000	3042.0
4	Kuparuk River	2	2	96.000	1111.0
30	Midway-Sunset	3	4	60.692	332.7
9	Point McIntyre	4	9	59.000	241.0
27	Kern River	5	5	48.746	329.0
15	Belridge S.	6	8	42.848	272.3
268	Wasson	7	14	27.410	122.5
246	Spraberry Trend	8	17	23.414	95.9
84	Garden Banks 426	9	18	22.706	93.4
2	Endicott	10	11	21.000	170.0
23	Elk Hills	11	7	20.529	288.6
252	Yates	12	3	20.310	598.4
62	Wilmington	13	6	19.779	290.9
214	East Texas	14	16	19.213	110.2
8	Milne Point	15	10	19.000	223.0
191	Giddings	16	23	16.590	66.9
38	Hondo	17	15	16.491	121.4
267	Slaughter	18	20	15.503	77.9
40	Pescado	19	31	15.161	51.7
21	Cymric	20	22	13.847	68.6
265	Seminole	21	26	11.950	57.5
29	Lost Hills	22	30	11.520	51.9
261	Levelland	23	34	11.080	48.6
178	Sho-Vel-Tum	24	29	10.800	52.1
41	Point Arguello	25	12	10.563	160.7
17	Coalinga	26	27	9.732	57.1
226	Cowden N.	27	32	9.595	50.5
264	Salt Creek	28	38	9.191	46.4
83	Eugene Island 330	29	36	8.655	47.5
161	Vacuum	30	48	8.015	31.2
103	South Pass 61	31	53	7.914	29.2
63	Rangely	32	21	7.529	70.4
240	McElroy	33	45	7.455	36.4
106	South Pass 89	34	41	7.290	41.6
88	Green Canyon 65	35	37	7.133	46.5
93	Main Pass 299	36	39	6.903	45.1
231	Fullerton	37	46	6.655	35.2
280	Greater Aneth	38	62	5.874	25.0
78	Bay Marchand 2	39	42	5.311	40.9
46	Ventura	40	24	5.191	66.8
277	Panhandle	41	49	5.125	31.1
263	Robertson N.	42	54	5.102	28.9
227	Cowden S.-Foster-J.	43	56	5.015	28.4
6	McArthur River	44	40	5.000	44.0
101	South Pass 24	45	57	4.850	27.9
108	West Delta 30	46	52	4.779	29.6
43	San Ardo	47	19	4.629	82.8
291	Oregon Basin	48	74	4.431	19.6
234	Howard-Glasscock	49	71	4.215	20.8
241	Means	50	61	4.213	25.3
232	Goldsmith	51	59	4.198	26.9
157	Grayburg-Jackson	52	79	4.059	18.3
90	Main Pass 41	53	82	3.841	17.7
109	West Delta 73	54	33	3.803	49.6
64	Jay	55	67	3.777	23.1
96	Miss. Canyon 194	59	25	3.213	59.0
260	Kelly-Snyder	61	28	3.145	54.5
47	Beta	64	13	3.009	140.5
86	Grand Isle 43	68	35	2.884	48.1
	SUMS			1076.883	9524.1