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TESTIMONY BY ARTIC SLOPE REGIONAL CORPORATION ON HOUSE BILL NO. 297
BEFORE HOUSE RESOURCES COMMITTEE

My name is Jacob Adams. I am appearing before the Committee on behalf of the Arctic Slope Regional Corporation in my capacity as Vice-President in charge of Land Selection and Conveyance.

As I testified before this Committee approximately three weeks ago, ASRC is strongly opposed to legislation which would impose a tax on proven oil and gas reserves. I am appearing before you again today to restate our continuing opposition to this type of tax for the reasons that I will state, and to ask that you attempt to satisfy the state's short-term cash needs by implementing any of the various alternatives that we and others have previously suggested.

Today, I would like to put my testimony in proper perspective by repeating what Oliver Leavitt, Treasurer, of ASRC, told the Senate Resources Committee at the conclusion of my recent testimony before that group regarding the proposed tax on oil and gas reserves. Arctic Slope Regional Corporation is a corporation "doing business for profit" in the State of Alaska. Like any corporation doing business in Alaska, we are and should be subject to taxation for the priveleges and benefits afforded us by the Alaskan government. We will gladly pay taxes on any profits we realize - but we vigorously resist the enactment of a law that will require us to pay taxes on future revenue producing property years prior to the time that we will realize any cash return from the development and production of such properties. This is oparesive taxation which would severely impede the growth and development of our corporation, and would

undoubtedly adversely affect the development and production of the oil and gas reserves on the North Slope of Alaska. Further, based on our evaluation of the possible cost that the proposed legislation could inflict upon us, we are seriously concerned as to whether or not we could continue to function as a viable coporation. I'm sure that it is not your intent to put us out of business or cripple our operations, but I'm also sure that you can appreciate our concern that we might be an unintended casualty of your efforts to ensure that the State's short term cash needs are satisfied.

Statements recently made before the legislature by Mr. Robert Paschall and Professor Griswold indicate that a tax on proven reserves would return annually to the State only $100 - $200 million. Since this will presumably be less than enough to meet the State's short-fall cash requirements, other avenues will have to be pursued. The various alternatives available in this regard were set forth in my earlier testimony, and have been stated and restated by others in their testimony. I suggest that it would be in the best interest of both the state, the Alaska business community and the Alaskan citizenry if the proposed oil in place tax legislation were abandoned and one of the following alternative courses of action were pursued:

1) Indirect borrowing against future oil and gas royalties though what is commonly known as on "ABC" type transaction. We understand that the Committee has already been provided with an explanatory memorandum and sample exhibits regarding this technique.

2) Advance payment of severance taxes.

3) Sale of options to purchase state royalty gas and/or oil.

4) Issuance of revenue anticipation notes.

5) Sale of oil and gas leases.

Mr. Paschall, a California petroleum geologist, has testified that an ad valorem property tax has been used in his state for 60 years. He also predicted that such a tax applied to the Arctic Slope Regional Corporation's interest in the Kemik gas field would be approximately $89,000 annually in contrast to the $2.1 million tax which I previously estimated would be our liability.

Mr. Paschall is correct that California uses an ad valorem property tax approach to derive revenues from oil and gas interests. The tax is in lieu of severance tax. The net effect is approximately 7-8 percent of gross value which is comparable to the effect of severance tax in other oil producing states such as Texas or Oklahoma.

The mechanics of assessment of reserves in California cannot be, in our opinion, equitably applied to Alaska, especially in areas where there is no production history, such as in the Arctic.

Because of the long history of production in California and knowledge of specific reservoir characteristics, a reasonably accurate estimate of reserves can be made. This is not so in Alaska.

The only reserve estimates that can be made on fields such as Kemik or Gubik (which we have also selected) is a simple volumetric estimate that may prove to be much in error. We believe that the error would be on the high side or not in our favor since a volumetric method of

calculating reserves is generally optimistic. The point to be made here is that an assessment of reserves based on estimates of recoverable oil and gas that are made from very little information and virtually no experience and will immediately invite challenge and litigation.

Further, if the method of assessment (which is not spelled out in specific detail in this bill) provides only $89,000 on an estimated value of $106 MM, or $100 MM tax on a $5 MMM assessed valuation of Prudhoe Bay, and the state will obviously still be cash deficient and will have to seek additional ways to raise revenues. This will only further complicate the states financing methodology.

Finally, with all due respect to Mr. Paschall's expertise, I would like to point out that the determination of the fair market value of "proven" oil and gas reserves in Alaska will at best be a guessing game for some time to come. The very fact that the range of the possible annual tax cost upon Arctic Slope Regional Corporation could vary from $89,000 to $2.1 MM, depending on which assessment procedure you choose to employ, is as unsettling as it is uncertain and is clear evidence of the ambiqility and impracticality inherent in such a tax structure.

The legal morass that would undoubtedly evolve in administering its provisions prompt a suggestion that should you choose to enact such legislation, you might consider entitling it "The Attorneys Oil and Gas Annuity Bill."

Professor Griswold states that there would be "no constitutional problem by exempting Native interests from a tax on oil and gas reserves". We recall similar claims about the legality of the right-of-way leasing

act which caused a special session at taxpayers expense and was ultimately repealed.

I understand that if any portion of a law is found unconstitutional under Alaska law, the other provisions of a statute are not necessarily invalid and may apply. Thus, if a court were to find that excepting only native interests is unconstitutional and thereby strike that provision, ASRC or any other regional corporation's interest would be subject to the remaining provisions of the law or, in this case, be subject to an ad valorem tax.

We are not so naive or gullible to be lead down a path of roses only to get hung on a thorn bush.

We want to emphasize the impact of this tax on a net profits interest which is one of the most important provisions of several exploration agreements between regional corporations and various oil companies.

A simple definition of a net profits interest is a share of gross production from a property, measured by the net profits from the operations of the property.

In the case of the North Slope, net profits are determined by ascertaining the cumulative gross proceeds from all oil, gas and other substances produced, saved and sold and deducting from such gross proceeds, the cumulative total of all chargeable costs and expenditures incurred by the lessee pursuant to the net profits agreement. Chargeable costs and expenditures are specifically defined and included any cash considerations paid or to be paid pursuant.

to an exploration agreement including lease bonuses and rentals, proudction taxes and ad valorem taxes.

If a field is large and capable of reasonably rapid pay out, a 15 percent net profits interest is worth as much as a 45 percent working interest or perhaps even more.

A regressive tax - this ad valorem property tax - will prolong for years the time before our net profits become a reality. Moreover, a net profits interest is a property interest itself and therefore subject to an ad valorem tax, althou it is far beyond our knowledge as to how one would evaluate and as s the net profits interest before it actually materializes and produces income to ASRC.

As a fledgling corporation trying to provide financial benefits to thousands of native stockholders, we think this tax is very unfair and debilitating and therefore should not be enacted into law.

April 14, 1975

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Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 3-13-75	Pump price 3-18-75	Pump price 3-19-74
Albany	44.9	56.9	49.9
Albuquerque	42.4	53.4	48.9
Amarillo	40.1	49.1	41.9
Atlanta	43.6	55.1	49.2
Baltimore	41.9	54.9	48.9
Birmingham	41.9	53.9	47.9
Boston*	43.6	55.1	49.2
Buffalo	44.9	56.9	49.9
Charlotte	41.9	54.9	48.9
Cheyenne	44.9	55.9	49.9
Chicago*	43.6	56.6	50.4
Cleveland	42.9	53.9	47.9
Corpus Christi	40.6	49.6	42.4
Dallas	40.6	49.6	42.4
Denver	43.9	54.9	49.9
Des Moines	43.0	54.0	49.9
Detroit	41.5	54.5	49.9
Fort Worth	40.6	49.6	42.4
Houston	40.6	49.6	42.4
Indianapolis	43.9	55.9	49.9
Jacksonville	41.9	53.9	47.9
Kansas City	43.4	54.4	49.9
Little Rock	41.5	53.0	48.9
Louisville	44.9	55.9	49.9
Los Angeles	40.5	51.5	50.5
Memphis	43.0	54.0	49.9
Miami	43.1	55.1	49.2
Milwaukee	43.9	54.9	48.9
Minn.-St. Paul	44.0	55.0	50.9
Newark	45.1	56.1	50.2
New Orleans	40.9	52.9	46.9
New York*	45.9	58.9	52.9
Norfolk	41.1	54.1	48.2
Okla. City	42.4	53.0	48.9
Omaha	43.4	55.9	49.9
Philadelphia	41.9	54.9	47.9
Phoenix	43.6	54.6	50.9
Pittsburgh	41.9	54.9	47.9
Portland, Ore.	41.0	52.0	51.4
Salt Lake City	42.4	53.4	47.9
San Antonio	40.1	49.1	41.9
San Diego	41.5	52.5	50.3
San Francisco	41.5	52.5	51.0
Seattle	40.6	53.6	51.0
Spokane	40.7	53.7	52.1
Springfield, Ill.*	44.0	57.0	52.9
St. Louis	44.0	55.0	50.9
Tampa	43.1	55.1	49.2
Texarkana	40.1	49.1	41.9
Tulsa	42.4	53.0	48.9
Wichita	42.9	53.9	47.9
Wichita Falls	40.1	49.1	41.9
Week's avg.	**42.46**	**53.78**	**48.48**
Feb. avg.	**42.24**	**53.55**	**45.73**
Jan. avg.	**41.87**	**53.18**	**45.73**
1975 to date	**42.16**	**53.48**	
1974 to date	**35.10**	**46.37**	

+ Increase, – decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday of each week. They may differ from refiner's prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
- Regular (92 octane) 26.75-30.00
- Premium (99 octane) 28.75-32.00

California (rack) Los Angeles:
- Regular (91 octane) 26.00-31.50
- Regular (95 octane) 27.10-32.50
- Premium (100 octane) 28.40-33.50

Chicago:
- Regular (94 octane) 27.50-32.50
- Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
- Distillate No. 1 ..... 27.50-33.50
- Distillate No. 2 ..... 26.50-32.00

Gulf Coast (cargoes):
- Kerosine (42-43) 26.25-27.50
- Distillate No. 2 ..... 26.00-27.00

Mid-Continent (Group 3):
- Kerosine (42-44) 27.00-30.25
- Diesel oil (38 d.i. & above) 26.50-29.00
- Distillate No. 1 ..... 26.00-29.25
- Distillate No. 2 ..... 24.50-26.75

New York Harbor (barges):
- Kerosine (42-44) 28.05-32.00
- Distillate No. 2 ..... 27.05-30.25
- Diesel fuel (48-52 d.i.) 27.80

Residual fuel

Mid-Continent (Group 3):
- No. 6 (max 1% S) $10.30
- No. 6 (over 1% S) ..... $ 9.30

Chicago:
- No. 6 (max 1% S) $13.86
- No. 5 (max. 1% S) $14.70

New York Harbor (barges):
- No. 6 (max. 0.3% S) $12.83-14.13
- No. 5 (0.3% S) $13.03-14.38

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	3-14 1975	3-7 1975	3-15 1974	3-14 1975	3-7 1975	3-15 1974	3-14 1975	3-7 1975	3-15 1974
Gasoline	200	115	158	10	5	10	210	120	168
Special Naphthas		3	32					3	32
Kerosine	5	3					5	3	
Distillate	108	135	251	5	5	10	113	140	261
No. 4 Fuel Oil	66	33	135				66	33	135
Residual	999	1,360	1,456	50	75	40	1,049	1,435	1,496
Jet Fuel (Naphtha)	25	25	9			8	25	25	17
Jet Fuel (Kerosine)	52	95	107	43	91	49	95	186	156
Asphalt	5	14	22				5	14	22
LP-Gas	104	112	132	13	24	20	117	136	152
Petrochem Feedstocks	17	15	16				17	15	16
Unfinished	43	26	91	20	5	14	63	31	105
Plant Condensate	88	58	94	5	5	10	93	63	104
Total Prod.	**1,712**	**1,994**	**2,503**	**146**	**210**	**161**	**1,858**	**2,204**	**2,664**
Canadian Crude	361	344	690	157	216	156	518	560	646
Other Foreign	2,311	2,365	1,336	496	313	435	2,807	2,678	1,971
Total Crude	**2,672**	**2,709**	**2,026**	**653**	**529**	**591**	**3,325**	**3,238**	**2,617**
Total imports	**4,384**	**4,703**	**4,529**	**799**	**739**	**752**	**5,183**	**5,442**	**5,281**

Worldwide crude-oil and gas production

OIL (1,000 b/d)	Jan.* 1975	Dec. 1974	12-month average Daily prod. 1974	12-month average Daily prod. 1975	Change from Vol	Change from %	GAS (billion cubic ft) Jan. 75	GAS (billion cubic ft) Dec. 74
WESTERN HEMISPHERE								
Argentina	415	415	423	415	– 8	– 1.9	22.6	22.7
Bolivia	35	55	48	35	– 13	–27.1	11.2	12.8
Brazil	200	195	172	200	28	16.3	4.6	40.
Canada	1,587	1,700	1,823	1,587	– 236	–12.9	282.2	311.7
Chile	30	30	29	30	1	3.4	12.0	19.4
Colombia	160	165	186	160	– 26	–14.0	9.7	10.0
Ecuador	140	136	225	140	– 85	–37.8	0.2	0.2
Mexico	610	600	480	610	130	27.1	64.7	62.0
Peru	75	75	75	75	...	...	7.1	6.0
Trinidad	180	180	178	180	2	1.1	4.6	2.5
United States	8,637	8,645	8,907	8,637	– 270	– 3.0	1,831.3	2,011.2
Venezuela	2,748	2,832	3,288	2,748	– 540	–16.4	35.0	45.3
Total	**14,817**	**15,023**	**15,834**	**14,817**	**–1,017**	**– 6.4**	**2,285.2**	**2,507.8**
WESTERN EUROPE								
Austria	45	45	50	45	– 5	–10.0	5.2	4.9
Denmark	4	4	1	4	3	300.0	...	...
France	25	26	24	25	1	4.2	23.3	34.6
West Germany	120	120	128	120	– 8	– 6.3	51.1	50.4
Italy	20	20	20	20	...	...	36.0	50.0
Netherlands	30	24	28	30	2	7.1	214.9	234.
Norway	24	46	3	24	21	700.0	...	...
Spain	30	30	44	30	– 14	–31.8	...	...
United Kingdom	2	2	2	2	...	...	54.6	68.2
Yugoslavia	65	65	68	65	– 3	– 4.4	3.5	4.7
Total	**365**	**381**	**368**	**365**	**– 3**	**– 0.8**	**388.6**	**447.0**
MIDDLE EAST								
Abu Dhabi	770	1,222	1,220	770	– 450	–36.9	...	...
Bahrain	66	67	70	66	– 4	– 5.7	0.2	0.1
Dubai	298	256	140	298	158	47.0	...	...
Iran	5,544	5,915	6,103	5,544	– 559	– 9.2	64.4	76.2
Iraq	1,970	2,162	1,774	1,970	196	11.0	11.0	10.9
Israel	100	100	100	100	...	...	0.2	0.2
Kuwait	2,074	2,320	2,838	2,074	– 764	–26.9	7.0	0.1
Oman	290	282	299	290	– 9	– 3.0	...	...
Qatar	514	519	518	514	– 4	– 0.8	0.1	0.1
Saudi Arabia	7,898	8,043	7,517	7,898	381	5.1	...	...
Sharjah	60	60	...	60	60	...	...	...
Syria	155	155	87	155	68	78.2	...	...
Turkey	65	65	64	65	1	1.6	...	...
Total	**19,804**	**21,166**	**20,730**	**19,804**	**– 926**	**– 4.5**	**82.9**	**87.6**
ASIA-PACIFIC								
Afghanistan	...	...	...	...	...	...	6.2	7.8
Australia	472	473	389	472	83	21.3	14.3	13.4
Burma	20	20	23	20	– 3	–13.0	0.7	0.6
Brunei-Malaysia	340	330	320	340	20	6.3	1.9	2.2
India	150	150	148	150	2	1.4	2.2	1.6
Indonesia	1,345	1,230	1,416	1,345	– 71	– 5.0	16.7	17.5
Japan	15	15	15	15	...	...	7.4	7.1
New Zealand	...	...	...	...	...	...	1.2	1.1
Pakistan	9	9	9	9	...	...	12.9	12.2
Taiwan	3	3	3	3	...	...	4.7	5.0
Total	**2,354**	**2,230**	**2,323**	**2,354**	**31**	**1.3**	**68.2**	**68.5**
AFRICA								
Algeria	800	800	1,150	800	– 350	–30.4	1.4	1.7
Angola	20	20	20	20	...	...	5.0	4.7
Cabinda	150	150	148	150	2	1.4	...	...
Congo	35	35	33	35	2	6.1	0.6	0.6
Egypt	175	175	46	175	129	280.4	6.0	5.2
Gabon	190	190	156	190	34	21.8	1.4	1.5
Libya	970	975	1,912	970	– 942	–49.3	4.0	3.1
Morocco	1	1	1	1	...	...	0.1	2.5
Nigeria	1,984	2,063	2,198	1,984	– 214	– 9.7	8.8	6.1
Tunisia	105	105	70	105	35	50.0	6.2	6.4
Total	**4,430**	**4,514**	**5,734**	**4,430**	**–1,304**	**–22.7**	**33.5**	**31.8**
COMMUNIST								
China	1,300	1,300	1,160	1,300	140	12.1	14.9	15.6
Rumania	290	290	290	290	...	...	81.3	80.2
U.S.S.R.†	9,490	9,419	8,955	9,490	535	6.0	864.9	882.5
Other	110	110	110	110	...	...	35.0	44.6
Total	**11,190**	**11,119**	**10,515**	**11,190**	**675**	**6.4**	**996.1**	**1,022.9**
World Total	**52,960**	**54,433**	**55,504**	**52,960**	**–2,544**	**– 4.6**	**3,854.5**	**4,165.6**

*Figures adjusted. †Includes gas liquids. (Note: Thailand, Barbados and others under 500 b/d not included.)

Worldwide crude-oil and gas production

OIL (1,000 b/d)	Jan.* 1975	Dec. 1974	12-month average: Daily prod. 1974	12-month average: Daily prod. 1975	Change from: Vol	Change from: %	GAS (billion cubic ft): Jan. 75	GAS (billion cubic ft): Dec. 74
WESTERN HEMISPHERE								
Argentina	415	415	423	415	− 8	− 1.9	22.6	22.7
Bolivia	35	55	48	35	− 13	−27.1	11.2	12.8
Brazil	200	195	172	200	28	16.3	4.6	40.
Canada	1,587	1,700	1,823	1,587	− 236	−12.9	282.2	311.7
Chile	30	30	29	30	1	3.4	12.0	19.4
Colombia	160	165	186	160	− 26	−14.0	9.7	10.0
Ecuador	140	136	225	140	− 85	−37.8	0.2	0.2
Mexico	610	600	480	610	130	27.1	64.7	62.0
Peru	75	75	75	75	...	...	7.1	6.0
Trinidad	180	180	178	180	2	1.1	4.6	2.5
United States	8,637	8,645	8,907	8,637	− 270	− 3.0	1,831.3	2,011.2
Venezuela	2,748	2,832	3,288	2,748	− 540	−16.4	35.0	45.3
Total	14,817	15,023	15,834	14,817	−1,017	− 6.4	2,285.2	2,507.8
WESTERN EUROPE								
Austria	45	45	50	45	− 5	−10.0	5.2	4.9
Denmark	4	4	1	4	3	300.0	...	...
France	25	26	24	25	1	4.2	23.3	34.6
West Germany	120	120	128	120	− 8	− 6.3	51.1	50.4
Italy	20	20	20	20	...	...	36.0	50.0
Netherlands	30	24	28	30	2	7.1	214.9	234.2
Norway	24	46	3	24	21	700.0	...	...
Spain	30	30	44	30	− 14	−31.8	...	...
United Kingdom	2	2	2	2	...	...	54.6	68.2
Yugoslavia	65	65	68	65	− 3	− 4.4	3.5	4.7
Total	365	381	368	365	− 3	− 0.8	388.6	447.0
MIDDLE EAST								
Abu Dhabi	770	1,222	1,220	770	− 450	−36.9	...	...
Bahrain	66	67	70	66	− 4	− 5.7	0.2	0.1
Dubai	298	256	140	298	158	47.0	...	...
Iran	5,544	5,915	6,103	5,544	− 559	− 9.2	64.4	76.2
Iraq	1,970	2,162	1,774	1,970	196	11.0	11.0	10.9
Israel	100	100	100	100	...	...	0.2	0.2
Kuwait	2,074	2,320	2,838	2,074	− 764	−26.9	7.0	0.1
Oman	290	282	299	290	− 9	− 3.0	...	...
Qatar	514	519	518	514	− 4	− 0.8	0.1	0.1
Saudi Arabia	7,898	8,043	7,517	7,898	381	5.1	...	...
Sharjah	60	60	...	60	60	...	...	...
Syria	155	155	87	155	68	78.2	...	...
Turkey	65	65	64	65	1	1.6	...	...
Total	19,804	21,166	20,730	19,804	− 926	− 4.5	82.9	87.6
ASIA-PACIFIC								
Afghanistan	...	...	...	...	...	...	6.2	7.8
Australia	472	473	389	472	83	21.3	14.3	13.4
Burma	20	20	23	20	− 3	−13.0	0.7	0.6
Brunei-Malaysia	340	330	320	340	20	6.3	1.9	2.2
India	150	150	148	150	2	1.4	2.2	1.6
Indonesia	1,345	1,230	1,416	1,345	− 71	− 5.0	16.7	17.5
Japan	15	15	15	15	...	...	7.4	7.1
New Zealand	...	...	...	...	...	...	1.2	1.1
Pakistan	9	9	9	9	...	...	12.9	12.2
Taiwan	3	3	3	3	...	...	4.7	5.0
Total	2,354	2,230	2,323	2,354	31	1.3	68.2	68.5
AFRICA								
Algeria	800	800	1,150	800	− 350	−30.4	1.4	1.7
Angola	20	20	20	20	...	...	5.0	4.7
Cabinda	150	150	148	150	2	1.4	...	...
Congo	35	35	33	35	2	6.1	0.6	0.6
Egypt	175	175	46	175	129	280.4	6.0	5.2
Gabon	190	190	156	190	34	21.8	1.4	1.5
Libya	970	975	1,912	970	− 942	−49.3	4.0	3.1
Morocco	1	1	1	1	...	...	0.1	2.5
Nigeria	1,984	2,063	2,198	1,984	− 214	− 9.7	8.8	6.1
Tunisia	105	105	70	105	35	50.0	6.2	6.4
Total	4,430	4,514	5,734	4,430	−1,304	−22.7	33.5	31.8
COMMUNIST								
China	1,300	1,300	1,160	1,300	140	12.1	14.9	15.6
Rumania	290	290	290	290	...	...	81.3	80.2
U.S.S.R.†	9,490	9,419	8,955	9,490	535	6.0	864.9	882.5
Other	110	110	110	110	...	...	35.0	44.6
Total	11,190	11,119	10,515	11,190	675	6.4	996.1	1,022.9
World Total	52,960	54,433	55,504	52,960	−2,544	− 4.6	3,854.5	4,165.6

*Figures adjusted. †Includes gas liquids. (Note: Thailand, Barbados and others under 500 b/d not included.)

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 3-18-75	Pump price 3-18-75	Pump price 3-19-74
Albany	44.9	56.9	49.9
Albuquerque	42.4	53.4	48.9
Amarillo	40.1	49.1	41.9
Atlanta	43.6	55.1	49.2
Baltimore	41.9	54.9	48.9
Birmingham	41.9	53.9	47.9
Boston*	43.6	55.1	49.2
Buffalo	44.9	56.9	49.9
Charlotte	41.9	54.9	48.9
Cheyenne	44.9	55.9	49.9
Chicago*	43.6	56.6	50.4
Cleveland	42.9	53.9	47.9
Corpus Christi	40.6	49.6	42.4
Dallas	40.6	49.6	42.4
Denver	43.9	54.9	49.9
Des Moines	43.0	54.0	49.9
Detroit	41.5	54.5	49.9
Fort Worth	40.6	49.6	42.4
Houston	40.6	49.6	42.4
Indianapolis	43.9	55.9	49.9
Jacksonville	41.9	53.9	47.9
Kansas City	43.4	54.4	49.9
Little Rock	41.5	53.0	48.9
Louisville	44.9	55.9	49.9
Los Angeles	40.5	51.5	50.5
Memphis	43.0	54.0	49.9
Miami	43.1	55.1	49.2
Milwaukee	43.9	54.9	48.9
Minn.-St. Paul	44.0	55.0	50.9
Newark	45.1	56.1	50.2
New Orleans	40.9	52.9	46.9
New York*	45.9	58.9	52.9
Norfolk	41.1	54.1	48.2
Okla. City	42.4	53.0	48.9
Omaha	43.4	55.9	49.9
Philadelphia	41.9	54.9	47.9
Phoenix	43.6	54.6	50.9
Pittsburgh	41.9	54.9	47.9
Portland, Ore.	41.0	52.0	51.4
Salt Lake City	42.4	53.4	47.9
San Antonio	40.1	49.1	41.9
San Diego	41.5	52.5	50.3
San Francisco	41.5	52.5	51.0
Seattle	40.6	53.6	51.0
Spokane	40.7	53.7	52.1
Springfield, Ill.*	44.0	57.0	52.9
St. Louis	44.0	55.0	50.9
Tampa	43.1	55.1	49.2
Texarkana	40.1	49.1	41.9
Tulsa	42.4	53.0	48.9
Wichita	42.9	53.9	47.9
Wichita Falls	40.1	49.1	41.9
Week's avg.	42.46	53.78	48.48
Feb. avg.	42.24	53.55	45.73
Jan. avg.	41.87	53.18	45.73
1975 to date	42.16	53.48	....
1974 to date	35.10	46.37	....

+ Increase, − decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday of each week. They may differ from refiner's prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
- Regular (92 octane) 26.75-30.00
- Premium (99 octane) 28.75-32.00

California (rack) Los Angeles:
- Regular (91 octane) 26.00-31.50
- Regular (95 octane) 27.10-32.50
- Premium (100 octane) 28.40-33.50

Chicago:
- Regular (94 octane) 27.50-32.50
- Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
- Distillate No. 1 ..... 27.50-33.50
- Distillate No. 2 ..... 26.50-32.00

Gulf Coast (cargoes):
- Kerosine (42-43) 26.25-27.50
- Distillate No. 2 ..... 26.00-27.00

Mid-Continent (Group 3):
- Kerosine (42-44) 27.00-30.25
- Diesel oil (58 d.i. & above) 26.50-29.00
- Distillate No. 1 ..... 26.00-29.25
- Distillate No. 2 ..... 24.50-26.75

New York Harbor (barges):
- Kerosine (42-44) 28.05-32.00
- Distillate No. 2 ..... 27.05-30.25
- Diesel fuel (48-52 d.i.) 27.80

Residual fuel

Mid-Continent (Group 3):
- No. 6 (max 1% S) $10.30
- No. 6 (over 1% S) ..... $ 9.30

Chicago:
- No. 6 (max 1% S) $13.86
- No. 5 (max. 1% S) $14.70

New York Harbor (barges):
- No. 6 (max. 0.3% S) $12.83-14.13
- No. 5 (0.3% S) $13.03-14.38

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	3-14 1975	3-7 1975	3-15 1974	3-14 1975	3-7 1975	3-15 1974	3-14 1975	3-7 1975	3-15 1974
Gasoline	200	115	158	10	5	10	210	120	168
Special Naphthas	....	3	32	....	....	....	....	3	32
Kerosine	5	3	....	....	....	....	5	3	....
Distillate	108	135	251	5	5	10	113	140	261
No. 4 Fuel Oil	66	33	135	....	....	....	66	33	135
Residual	999	1,360	1,456	50	75	40	1,049	1,435	1,496
Jet Fuel (Naphtha)	25	25	9	....	....	8	25	25	17
Jet Fuel (Kerosine)	52	95	107	43	91	49	95	186	156
Asphalt	5	14	22	....	....	....	5	14	22
LP-Gas	104	112	132	13	24	20	117	136	152
Petrochem Feedstocks	17	15	16	....	....	....	17	15	16
Unfinished	43	26	91	20	5	14	63	31	105
Plant Condensate	88	58	94	5	5	10	93	63	104
Total Prod.	1,712	1,994	2,503	146	210	161	1,858	2,204	2,664
Canadian Crude	361	344	690	157	216	156	518	560	646
Other Foreign	2,311	2,365	1,336	496	313	435	2,807	2,678	1,971
Total Crude	2,672	2,709	2,026	653	529	591	3,325	3,238	2,617
Total imports	4,384	4,703	4,529	799	739	752	5,183	5,442	5,281

Fourth quarter trims '74 profits gain

Earnings of large oil firms top $13.4 billion in 1974—up 39.8%—but last-quarter profits drop 7.7%. Most executives see delining profits in 1975 due to inflation and to adverse tax and pricing actions.

THE larger American oil companies enjoyed another good year for profits in 1974, but they encountered a set of unfavorable trends indicating that earnings have peaked and are trending down.

Many executives expect 1975 and beyond to be a period of declining earnings, with possible steep inroads from inflation and unfavorable tax and price actions by Government.

The Oil and Gas Journal's survey of leading companies reveals a much slower fourth quarter pulled down potential 1974 earnings for most of the firms. The relatively poorer fourth quarter came after a series of strong quarterly performances.

The down trend is due to declining international earnings, softer domestic demand with accompanying lower product prices, higher taxes, and rising costs. Earnings were bolstered by strong chemical business and better prices for crude oil and natural gas.

The Journal survey shows that the larger companies as a group earned more than $13.4 billion in 1974, an increase of 39.8% over 1973. The same companies earned $9.5 billion in 1973, up 54.7% from 1972.

Approximately one-half of the companies surveyed earned less in the last quarter of 1974 than in the last quarter of 1973. The quarterly earnings of the group were 7.7% less than in 1973. One year ago, these companies were 68.8% ahead of the 1972 fourth quarter.

Downtrend. The outlook for 1975 U.S. oil earnings is fuzzy. Concern is rising over inflation, recession, and the likelihood of higher taxes.

Standard Oil Co. of California board chairman, H. J. Haynes, said his company's earnings outlook is clouded by inflation and by "uncertainties regarding the arrangements under which the company acquires oil from producing countries and the impact of tax changes under consideration by the U.S. and other governments."

"It is safe to say that we have crossed the profit peak and will be

The profits picture for 25 large U.S. oil companies

Thousands of dollars

Company	1974 Net profit*	1974 % Change from 1973	1974 % Change 1973 vs. 1972	1974 Without LIFO change Net profit*	1974 Without LIFO change % Change from 1973	4th quarter Net profit*	4th quarter % Change from 1973	4th quarter % Change 1973 vs. 1972
Exxon	$3,140,000	+ 28.5	+ 53.3	$3,140,000	+ 28.5	$ 778,000	− 1.1	+ 69.0
Texaco†	1,586,441	+ 22.8	+ 45.4	1,783,141	+ 38.0	319,779	− 29.5	+ 70.1
Gulf	1,065,000	+ 33.1	+ 79.1	1,065,000	+ 33.1	185,000	− 19.6	+ 98.3
Mobil	1,040,100	+ 22.5	+ 46.8	1,040,100	+ 22.5	136,300	− 51.0	+ 68.2
California Standard†	970,000	+ 15.0	+ 54.2	1,220,000	+ 44.6	293,000	+ 3.5	+ 94.2
Subtotal	**7,801,541**	**+ 25.3**	+ 56.1	**8,248,247**	**+ 32.4**	**1,712,079**	**− 15.3**	**+ 45.0**
Indiana Standard	970,300	+ 89.8	+ 36.4	970,300	+ 89.8	174,800	+ 43.9	+ 52.7
Shell	620,000	+ 86.5	+ 27.7	620,500	+ 86.5	158,200	+ 99.3	− 1.5
Atlantic Richfield	474,605	+ 75.7	+ 40.3	474,605	+ 75.7	96,893	+ 5.7	+ 47.4
Phillips	429,700	+ 86.5	+ 55.3	429,700	+ 86.5	84,500	− 2.5	+127.6
Sun	378,000	+ 64.4	+ 48.4	378,000	+ 64.4	54,000	− 28.0	+ 59.6
Continental†	327,600	+ 35.0	+ 42.6	398,600	+ 64.2	61,800	− 30.8	+ 91.6
Tenneco	321,468	+ 39.6	+ 13.4	321,468	+ 39.6	76,459	− 5.5	+ 14.4
Union	288,000	+ 59.8	+ 47.8	288,000	+ 59.8	55,500	+ 8.8	+ 55.5
Occidental†	284,000	+256.1	+665.6	341,000	+327.5	NA	NA	NA
Getty†	280,973	+108.1	+ 77.4	280,973	+108.1	58,618	+ 11.4	+115.0
Cities Service†	203,800	+ 50.3	+ 36.8	217,100	+ 60.1	46,400	+ 10.0	+ 49.8
Amerada Hess	201,858	− 7.6	+177.3	201,858	− 7.6	67,806	− 35.1	+471.9
Marathon†	170,493	+ 31.8	+ 62.2	§170,493	+ 31.8	40,917	− 27.6	+ 92.8
Ohio Standard	125,900	+ 69.9	+ 24.1	125,900	+ 69.9	28,600	+146.6	− 39.2
Kerr McGee†	116,408	+ 85.3	+ 52.7	126,537	+148.1	30,952	+ 65.3	+ 69.2
Skelly	113,297	+157.6	+ 17.0	113,297	+157.6	35,530	+111.3	+ 31.3
Ashland†¶	113,000	+ 34.1	+ 25.7	147,700	+ 73.3	38,600	+ 12.2	+ 52.2
American Petrofina¶	86,683	+134.6	+104.6	86,683	+134.6	22,418	+ 34.0	+218.2
Murphy†	56,611	+ 37.4	+239.9	81,086	+ 67.3	13,010	− 6.8	+181.0
Clark†	<7,200>	−123.6	+265.6	12,300	− 59.7	<7,600>	−193.8	+140.8
Subtotal	**5,565,986**	**+ 67.0**	**+ 51.9**	**5,786,100**	**+ 73.6**	**1,137,403**	**+ 6.7**	**+ 64.3**
TOTAL	**13,367,537**	**+ 39.8**	**+ 54.7**	**14,034,341**	**+ 46.8**	**2,849,482**	**− 7.7**	**+ 68.8**

*Excludes nonrecurring gains and losses. †Adopted LIFO inventory accounting for domestic activities in 1974. ‡Includes Getty's share of Mission Corp. and Skelly Oil Co. §Marathon LIFO change not available. ¶Fiscal year ending Sept. 30 and first quarter. **Includes revenue of Standard Ohio assets acquired July 1, 1973.

Non-Communist world well completions—1970-1973 *(Continued)*

Area	Total wells 1973	Total oil wells	Total gas wells	Total footage	Total wildcats 1973	Oil disc.	Gas disc.	Wildcat footage 1973	Total wells 1972	Total wildcats 1972	Total footage 1972	Total wells 1971	Total wells 1970
Netherlands-North Sea	16	0	4	201,000	13	0	3	163,306	18	11	186,000	20	12
Norway-North Sea	17	7	2	207,000	13	4	2	158,288	16	14	188,500	14	15
Spain	19	1	1	170,724	19	1	1	170,724	13	7	146,500	13	0
Spitzburgen	0	0	0	0	0	0	0	0	0	0	0	1	0
Svalbard	1	0	0	11,000	1	0	0	11,000	2	2	17,200	0	0
Sweden	20	0	0	78,000	20	0	0	78,000	20	20	54,000	4	0
Switzerland	1	0	0	3,872	1	0	0	0	0	0	0	0	0
U.K.	19	5	0	87,500	15	0	0	69,075	10	10	63,000	11	8
U.K.-North Sea	76	20	27	745,000	40	11	3	392,120	70	25	722,000	63	58
Total	**400**	**69**	**137**	**3,616,218**	**217**	**21**	**25**	**2,118,626**	**459**	**210**	**4,062,377**	**418**	**362**
NORTH AFRICA													
Algeria	83	70	10	815,000	13	0	0	165,000	80	10	765,000	109	115
Egypt	46	29	0	343,600	15	2	0	121,200	58	26	446,000	43	67
Libya	74	28	0	467,000	25	3	0	197,000	77	34	661,000	87	250
Morocco	4	0	1	33,667	4	0	1	33,667	7	7	34,238	9	1
Tunisia	15	6	0	135,509	9	0	0	79,545	18	12	175,536	16	6
Total	**222**	**133**	**11**	**1,794,776**	**66**	**5**	**1**	**596,412**	**240**	**89**	**2,081,774**	**264**	**409**
OTHER AFRICA													
Angola	31	18	1	220,177	8	2	0	71,370	34	15	270,988	55	37
Cameroun	3	1	0	18,723	3	1	0	18,723	5	5	31,736	2	6
Congo	17	14	1	45,378	4	1	1	30,778	43	7	116,358	16	9
Dahomey	2	0	0	14,100	2	0	0	14,100	1	1	5,680	0	4
Ethiopia	5	0	1	19,701	5	0	1	19,701	3	3	.....	0	1
Equitorial Guinea	0	0	0	0	0	0	0	0	0	0	0	1	0
Gabon	44	30	2	347,578	15	3	1	124,547	36	17	267,671	36	26
Ghana	1	0	0	3,448	1	0	0	13,448	1	1	75	2	11
Ivory Coast	1	0	0	9,500	1	0	0	9,500	2	2	22,149	0	0
Kenya	0	0	0	0	0	0	0	0	0	0	0	2	1
Liberia	0	0	0	0	0	0	0	0	0	0	0	4	0
Malagasy	2	0	0	20,344	2	0	0	20,344	1	1	9,927	8	1
Mauritania	1	0	0	.....	1	0	0	.....	1	1	17,215	0	2
Mozambique	0	0	0	0	0	0	0	0	1	1	2,294	7	12
Nigeria	239	184	4	2,414,387	45	22	2	501,418	258	61	2,500,956	207	168
Port Guinea	1	0	0	8,850	1	0	0	8,850	0	0	0	0	0
Senegal	0	0	0	0	0	0	0	0	2	2	17,914	6	5
South Africa	18	0	0	78,582	18	0	0	78,582	10	10	99,451	16	15
Spanish Sahara	1	0	0	6,656	1	0	0	6,656	1	1	6,571	0	1
Togo	0	0	0	0	0	0	0	0	0	0	0	1	1
Zaire	9	6	0	63,476	5	2	0	36,868	6	6	71,821	4	0
Total	**375**	**253**	**9**	**3,280,900**	**112**	**31**	**5**	**954,885**	**405**	**134**	**3,441,749**	**389**	**300**
MIDDLE EAST													
Abu Dhabi	37	30	0	45,411	7	0	0	76,678	37	21	405,298	19	7
Cypress	0	0	0	0	0	0	0	0	0	0	0	0	1
Dubai	18	14	0	170,595	1	1	0	13,300	16	0	167,953	7	0
Iran	81	57	5	741,000	18	4	3	231,000	61	2	287,432	104	44
Iraq	16	16	0	117,595	0	3	0	28,611	0	0	0	17	6
Israel	2	0	0	23,480	2	0	0	23,480	0	0	0	7	10
Jordan	0	0	0	0	0	0	0	0	0	0	0	3	1
Kuwait	0	0	0	0	0	0	0	0	2	0	24,381	8	13
Neutral Zone	13	13	0	84,667	0	0	0	0	9	0	44,550	12	23
Oman	49	49	0	211,456	0	0	0	0	56	16	257,654	0	27
Qatar	9	8	0	67,458	1	0	0	6,930	8	6	64,632	10	7
Saudi Arabia	323	177	0	2,763,588	3	3	0	25,668	178	6	1,522,968	56	43
Sharjah	2	2	0	29,011	0	0	0	0	2	1	19,611	2	0
Turkey	59	28	1	400,452	30	6	0	65,220	56	29	403,368	48	60
Total	**609**	**394**	**6**	**5,049,733**	**65**	**17**	**3**	**470,887**	**425**	**81**	**3,197,847**	**293**	**254**
FAR EAST													
Brunei	3	0	0	20,193	3	0	0	20,193	2	2	11,030	0	4
Burma	4	0	0	39,255	4	0	0	39,255	3	3	35,741	0	3
India	5	2	2	30,918	4	2	2	16,168	5	3	20,008	0	0
Indonesia	501	275	31	2,250,571	169	21	7	1,004,578	312	137	1,171,000	422	84
Japan	40	2	4	324,800	36	2	1	292,320	10	10	98,347	4	107
Korea	5	0	0	38,589	5	0	0	38,589	0	0	0	0	0
Khmer	0	0	0	0	0	0	0	0	1	1	7,997	0	0
Malaysia	14	5	0	136,668	11	2	0	107,378	20	20	141,066	12	14
Pakistan	2	0	1	16,053	2	0	1	16,053	8	8	51,802	4	7
Philippines	11	0	0	68,986	11	0	0	68,986	9	9	50,232	17	2
Taiwan	22	1	1	220,337	22	1	1	220,337	6	6	74,444	9	5
Thailand	8	1	1	61,667	8	1	1	61,667	6	6	40,147	1	0
Timor	0	0	0	0	0	0	0	0	3	3	16,173	3	4
Total	**615**	**286**	**40**	**3,208,037**	**275**	**27**	**13**	**1,885,524**	**385**	**208**	**1,717,987**	**472**	**230**
OCEANIA													
Australia-Papua-New Guinea	83	3	16	646,274	67	0	3	511,657	139	93	1,012,893	98	125
New Zealand	0	0	0	0	0	0	0	0	11	11	56,470	9	9
Total	**83**	**3**	**16**	**646,274**	**67**	**0**	**3**	**511,657**	**150**	**104**	**1,059,363**	**107**	**134**
NORTH AMERICA													
Canada	4,621	975	1,640	16,776,595	2,219	199	567	8,419,550	3,548	1,633	13,223,396	3,175	3,108
U.S.	27,602	9,902	6,385	138,937,944	7,466	619	900	44,776,906	28,755	7,539	138,285,876	25,851	28,120
Total	**32,223**	**10,877**	**8,025**	**155,714,539**	**9,685**	**818**	**1,467**	**53,196,456**	**32,303**	**9,172**	**151,509,272**	**29,026**	**31,228**
GRAND TOTAL	**38,647**	**13,274**	**8,343**	**187,118,220**	**10,975**	**1,021**	**1,561**	**63,202,138**	**36,501**	**10,540**	**181,429,050**	**33,327**	**35,278**

Non-Communist world well completions—1970-1973

Area	Total wells 1973	Total oil wells	Total gas wells	Total footage	Total wildcats 1973	Oil disc.	Gas disc.	Wildcat footage 1973	Total wells 1972	Total wildcats 1972	Total footage 1972	Total wells 1971	Total wells 1970
LATIN AMERICA													
Argentina	597	328	54	3,137,559	139	19	17	304,326	623	110	3,458,432	595	579
Bahamas	0	0	0	0	0	0	0	0	0	0	0	0	2
Barbados	0	0	0	0	0	0	0	0	0	0	0	2	0
Belize	3	0	0	14,664	3	0	0	14,664	5	5	23,907	0	0
Bolivia	14	8	2	90,689	4	1	2	30,390	14	8	189,294	18	33
Brazil	128	40	3	781,065	78	15	2	601,597	179	80	946,345	175	177
Chile	61	18	3	369,249	20	0	3	138,455	72	33	491,395	81	66
Colombia	46	27	3	366,513	20	2	3	209,703	56	20	423,860	71	58
Dominican Republic	0	0	0	0	0	0	0	0	0	0	0	0	2
Ecuador	58	49	0	529,672	8	2	0	66,888	59	20	459,993	81	37
Guatemala	0	0	0	0	0	0	0	0	1	1	11,781	0	0
Guyana	0	0	0	0	0	0	0	0	0	0	0	1	0
Honduras	3	0	0	31,940	3	0	0	31,940	3	3	24,952	1	0
Jamaica	0	0	0	0	0	0	0	0	1	1	7,608	0	1
Mexico	422	182	24	3,434,747	104	12	12	1,033,419	431	143	3,727,563	516	592
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	3	8
Paraguay	0	0	0	0	0	0	0	0	6	6	21,232	11	0
Peru	89	66	0	789,332	31	15	0	376,418	117	25	696,151	121	135
Surinam	0	0	0	0	0	0	0	0	0	0	0	1	7
Trinidad-Tobago	212	175	10	955,622	15	3	5	113,860	196	23	837,678	220	135
Venezuela	427	366	0	3,306,691	63	33	0	546,031	371	64	3,038,490	464	589
Total	**2,060**	**1,259**	**99**	**13,807,743**	**488**	**102**	**44**	**3,467,691**	**2,134**	**542**	**14,358,661**	**2,361**	**2,331**
EUROPE													
Austria	74	29	24	454,332	21	2	4	182,181	74	21	401,339	53	60
Denmark-North Sea	4	0	0	36,000	4	0	0	36,000	3	1	10,800	3	3
Eire	4	0	1	37,000	4	0	1	37,000	3	3	32,780	3	0
France	14	4	1	174,720	11	2	0	137,284	27	11	162,248	11	17
Germany	47	3	20	463,045	22	1	3	201,202	48	26	513,095	62	59
Greece	3	0	0	27,500	3	0	0	27,500	2	2	12,745	1	2
Italy	35	0	11	445,110	24	0	4	389,391	77	43	843,170	94	89
Malta	1	0	0	7,250	1	0	0	7,250	3	3	25,000	1	0
Netherlands	49	0	46	466,285	5	0	3	49,305	73	12	684,000	64	39

(Continued on next page)

at a well in San Patricio County's White Point field. Mobil 1 Jones Unit in East White Point, 5 miles west of Portland, flowed 1,726 Mcfd and 144 bbl condensate daily on 14/64-in. choke from perforations at 12,215-12,318 ft.

A RECOMPLETION in South Texas opened a new gas sand for a new fault-block portion of East Jeffress-field.

New well is in Hidalgo County, 5 miles southwest of McCook in Porcion 74, A-582. Well is the Coastal States Gas Co. 1 Castillo. Flow was 2,100 Mcfd and 14 bbl condensate daily from perforations at 11,145-11,472 ft in the Vicksburg Oligocene T, fault block A zone. Well originally paid at 12,043-12,130 ft in the Vicksburg-T sand.

The second well in North Julian field, Kenedy County, is also a success. Richard E. Haas completed 2 Clark & Sain in the 9,300-ft Frio Oligocene pay. Flow was 860,000 cfd and 13 bbl condensate through 12/64-in. choke.

Pay is at 9,172-81 ft. Location is 1 mile east of the discovery well, completed late last year.

Table 19.--Profit record of 27 large U. S. oil companies, first nine months of 1973 relative to 1972.

Company	Profits ($1,000)* 9 Months 1974	% Change From 1973	3rd Qtr 1974	% Change From 1973
Exxon	2,280,000	+ 37.7	800,000	+ 25.4
Texaco	1,428,162	+ 70.2	378,391	+ 23.1
Mobil	903,800	+ 58.2	277,800	+ 20.2
Calif. Standard	877,736	+ 56.6	299,506	+ 32.6
Gulf	815,000	+ 43.0	275,000	+ 31.0
SUBTOTAL	6,304,698	+ 50.2	2,030,697	+ 25.9
Indiana Standard	795,500	+104.1	296,500	+101.3
Shell	462,300	+ 82.5	216,000	+158.4
ARCO	377,712	+111.6	144,042	+140.9
Conoco	329,800	+115.0	120,200	+121.8
Sun	323,848	+109.1	105,675	+ 84.5
Phillips	317,600	+121.1	112,900	+109.6
Occidental	247,209	+360.2	86,834	+297.3
Tenneco	245,007	+ 64.1	73,405	+ 37.8
Union	232,500	+ 80.1	79,900	+ 57.6
Getty†	222,355	+169.8	86,526	+171.9
Cities Service	168,400	+ 80.1	45,800	+ 75.5
Amerada Hess	134,052	+ 17.7	38,203	- 12.9
Marathon	129,576	+ 77.7	48,745	+ 49.9
Pennzoil	113,983	+ 95.7	33,703	+ 80.3
Sohio	97,000	+ 55.2	37,000	+105.6
Kerr-McGee	93,154	+111.2	32,153	+143.7
Ashland‡	78,700	+ 27.1	27,300	+ 14.2
Skelly	77,800	+186.2	31,100	+280.0
American Petrofina	64,265	+217.8	31,944	+247.6
Murphy	55,615	+ 60.8	12,189	- 19.7
Clark	19,165	- 14.5	<3,435>	-137.5
Commonwealth	12,910	- 23.8	<14,772>	-281.3
SUBTOTAL	4,598,451	+ 98.5	1,641,912	+ 95.5
TOTAL	10,903,149	+ 67.4	3,672,609	+ 49.8

*Excludes nonrecurring gains and losses. †Includes Getty's share in Mission Corp. and Skelly. ‡Calendar-year basis.

Source: Oil and Gas Journal, November 11, 1974

Worldwide crude-oil and gas production

OIL (1,000 b/d)	Dec.* 1974	Nov. 1974	12-month average Daily prod. 1973	12-month average Daily prod. 1974	Change from Vol	Change from %	GAS (billion cu ft) Dec. 1974	GAS (billion cu ft) Nov. 1974	GAS (billion cu ft) 1974 Total
WESTERN HEMISPHERE									
Argentina	415.0	415.0	420.0	413.0	− 7.0	− 1.7	22.7	25.2	278.4
Bolivia	50.0	50.0	47.0	49.0	2.0	4.3	12.8	12.9	152.2
Brazil	195.0	195.0	166.0	179.0	13.0	7.8	4.0	4.2	47.3
Canada	1,700.0	1,468.0	1,797.0	1,690.0	−107.0	− 6.0	311.7	301.7	3,341.7
Chile	30.0	30.0	32.0	29.0	− 3.0	− 9.4	19.4	19.2	212.3
Colombia	165.0	165.0	195.0	173.0	− 22.0	−11.3	10.0	10.1	105.8
Ecuador	55.0	56.0	218.0	153.0	− 65.0	−29.8	0.2	0.3	5.3
Mexico	600.0	600.0	465.0	551.0	86.0	18.5	62.0	58.6	686.4
Peru	75.0	75.0	71.0	76.0	5.0	7.0	6.0	6.5	73.3
Trinidad	180.0	180.0	166.0	178.0	12.0	7.2	2.5	4.8	65.0
United States	8,645.0	8,647.0	9,187.0	8,812.0	−375.0	− 4.1	2,011.2	1,971.2	22,376.9
Venezuela	2,832.0	2,818.0	3,366.0	2,976.0	−390.0	−11.6	45.3	45.0	1,456.5
Total	**14,942.0**	**14,699.0**	**16,130.0**	**15,279.0**	**−851.0**	**− 5.3**	**2,507.8**	**2,459.7**	**28,801.1**
WESTERN EUROPE									
Austria	45.0	45.0	49.0	46.0	− 3.0	− 6.1	4.9	5.2	87.6
Denmark	4.0	4.0	4.0	3.0	− 1.0	−25.0	0	0	0
France	25.0	25.0	26.0	23.0	− 3.0	−11.5	34.6	32.3	303.6
West Germany	120.0	121.0	129.0	121.0	− 8.0	− 6.2	50.4	51.6	674.1
Italy	20.0	20.0	19.0	19.0	....	....	50.0	33.0	572.2
Netherlands	24.0	24.0	29.0	30.0	1.0	3.4	234.2	241.7	2,867.5
Norway	46.0	57.0	32.0	35.0	3.0	9.4	0	0	0
Spain	30.0	30.0	15.0	37.0	22.0	146.7	0	0	0
United Kingdom	2.0	2.0	2.0	2.0	....	....	68.2	71.1	1,207.2
Yugoslavia	65.0	65.0	67.0	67.0	....	....	4.7	5.2	54.6
Total	**381.0**	**393.0**	**372.0**	**383.0**	**11.0**	**2.9**	**447.0**	**440.1**	**5,766.8**
MIDDLE EAST									
Abu Dhabi	1,222.0	1,204.0	1,299.0	1,412.0	113.0	8.7	0	0	0
Bahrain	67.0	67.0	68.0	67.0	− 1.0	− 1.5	0.1	0.1	3.3
Dubai	256.0	268.0	220.0	239.0	19.0	8.6	0	0	0
Iran	5,915.0	6,015.0	5,860.0	6,026.0	166.0	2.8	76.2	75.4	906.2
Iraq	2,162.0	1,812.0	1,954.0	1,850.0	−104.0	− 5.3	10.9	11.1	129.3
Israel	100.0	100.0	88.0	100.0	12.0	13.6	0.2	0.2	4.2
Kuwait	2,320.0	2,546.0	3,024.0	2,546.0	−478.0	−15.8	0.1	0.1	1.6
Oman	282.0	281.0	293.0	290.0	− 3.0	− 1.0	0	0	0
Qatar	519.0	519.0	570.0	518.0	− 52.0	− 9.1	0.1	0.1	1.7
Saudi Arabia	8,043.0	8,818.0	7,607.0	8,481.0	874.0	11.5	0	0	0
Sharjah†	60.0	60.0	....	30.0	30.0	....	0	0	0
Syria	155.0	155.0	105.0	132.0	27.0	25.7	0	0	0
Turkey	65.0	65.0	67.0	65.0	− 2.0	− 3.0	0	0	0
Total	**21,166.0**	**21,910.0**	**21,155.0**	**21,756.0**	**601.0**	**2.8**	**87.6**	**87.0**	**1,046.3**
ASIA-PACIFIC									
Afghanistan	....	....	....	....	....	....	7.8	7.6	92.8
Australia	473.0	459.0	369.0	389.0	20.0	5.4	13.4	14.2	160.1
Burma	20.0	20.0	20.0	20.0	....	....	0.6	0.6	6.1
Brunei-Malaysia	330.0	330.0	320.0	328.0	8.0	2.5	2.2	0.9	5.1
India	150.0	150.0	147.0	149.0	2.0	1.4	1.6	1.4	18.5
Indonesia	1,230.0	1,250.0	1,324.0	1,396.0	72.0	5.4	17.5	18.2	160.8
Japan	15.0	15.0	14.0	15.0	1.0	7.1	7.1	7.2	95.5
New Zealand	....	....	....	....	....	....	1.1	1.1	13.2
Pakistan	9.0	9.0	9.0	9.0	....	....	12.2	14.0	141.9
Taiwan	3.0	3.0	2.0	3.0	1.0	50.0	5.0	4.2	46.2
Thailand	0.2	0.2	0.2	0.2	....	....	0	0	0
Total	**2,230.2**	**2,236.2**	**2,205.2**	**2,309.2**	**104.0**	**4.7**	**68.5**	**68.3**	**740.2**
AFRICA									
Algeria	800.0	800.0	1,090.0	986.0	−104.0	− 9.5	1.7	1.8	20.6
Angola	50.0	20.0	17.0	20.0	3.0	17.6	4.7	5.2	40.7
Cabinda	150.0	150.0	145.0	149.0	4.0	2.8	0	0	0
Congo	35.0	35.0	42.0	32.0	− 10.0	−23.8	0.6	0.7	6.1
Egypt	175.0	175.0	167.0	144.0	− 23.0	−13.8	5.2	4.6	49.7
Gabon	190.0	190.0	151.0	177.0	26.0	17.2	1.5	1.5	15.2
Libya	975.0	961.0	2,187.0	1,491.0	−696.0	−31.8	3.1	3.2	41.0
Morocco	1.0	1.0	1.0	1.0	....	....	2.5	1.8	29.0
Nigeria	2,063.0	2,238.0	2,056.0	2,256.0	200.0	9.7	6.1	5.0	60.0
Tunisia	105.0	105.0	82.0	88.0	6.0	7.3	6.4	2.9	20.7
Total	**4,514.0**	**4,675.0**	**5,938.0**	**5,344.0**	**−594.0**	**−10.0**	**31.8**	**26.7**	**283.0**
COMMUNIST									
China	1,200.0	1,200.0	1,060.0	1,200.0	140.0	13.2	15.6	14.8	187.5
Rumania	290.0	290.0	290.0	290.0	....	....	80.2	77.8	935.7
U.S.S.R.‡	9,419.0	9,441.0	8,576.0	9,176.0	600.0	7.0	882.5	811.2	9,213.3
Other	110.0	110.0	100.0	110.0	10.0	10.0	44.6	41.2	500.8
Total	**11,019.0**	**11,041.0**	**10,026.0**	**10,776.0**	**750.0**	**7.5**	**1,022.9**	**945.0**	**10,837.3**
World Total	**54,252.2**	**54,954.2**	**55,826.0**	**55,847.2**	**21.0**	**0.04**	**4,165.6**	**4,026.8**	**47,474.7**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 2-18-75	Pump price 2-18-75	Pump price 2-19-74
Albany	44.9	56.9	47.9
Albuquerque	42.4	53.4	47.9
Amarillo	40.1	49.1	39.9
Atlanta	42.1	53.6	46.4
Baltimore	41.9	54.9	46.9
Birmingham	41.9	53.9	45.9
Boston*	42.1	53.6	46.4
Buffalo	44.9	56.9	47.9
Charlotte	41.9	54.9	46.9
Cheyenne	44.9	55.9	48.9
Chicago*	43.6	56.6	48.4
Cleveland	42.9	53.9	45.9
Corpus Christi	40.6	49.6	41.1
Dallas	40.6	49.6	41.1
Denver	43.9	54.9	48.9
+Des Moines	43.0	54.0	46.9
Detroit	41.5	54.5	47.9
Fort Worth	40.6	49.6	41.1
Houston	40.6	49.6	41.1
Indianapolis	43.9	55.9	47.9
Jacksonville	41.9	53.9	45.9
Kansas City	43.4	54.4	47.9
+Little Rock	41.5	53.0	45.9
Louisville	44.9	55.9	47.9
−Los Angeles	40.7	51.7	44.3
+Memphis	43.0	54.0	46.9
Miami	41.6	53.6	46.4
Milwaukee	43.9	54.9	46.9
+Minn.-St. Paul	44.0	55.0	47.9
Newark	43.6	54.6	47.4
New Orleans	40.9	52.9	44.9
New York*	45.9	58.9	50.9
Norfolk	39.6	52.6	45.4
+Okla. City	42.4	53.0	45.9
Omaha	43.4	55.9	47.9
Philadelphia	41.9	54.9	45.9
+Phoenix	43.6	54.6	44.9
Pittsburgh	41.9	54.9	45.9
−Portland, Ore.	41.5	52.5	45.9
Salt Lake City	42.4	53.4	46.9
San Antonio	40.1	49.1	39.9
−San Diego	41.3	52.3	44.3
+San Francisco	41.5	52.5	45.3
Seattle	40.8	53.8	46.1
+Spokane	40.9	53.9	47.1
+Springfield, Ill.*	44.0	57.0	49.9
+St. Louis	44.0	55.0	47.9
Tampa	41.6	53.6	46.4
Texarkana	40.1	49.1	39.9
+Tulsa	42.4	53.0	45.9
Wichita	42.9	53.9	45.9
Wichita Falls	40.1	49.1	39.9
Week's avg.	**42.31**	**53.62**	**45.88**
Jan. avg.	**41.87**	**53.18**	**45.73**
Dec. avg.	**41.42**	**52.74**	**42.02**
1975 to date	**41.99**	**53.30**	....
1974 to date	**34.43**	**45.70**	....

+ Increase, − decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday of each week. They may differ from refiner's prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
- Regular (92 octane) 26.75-30.00
- Premium (99 octane) 28.75-32.00

California (rack) Los Angeles:
- Regular (91 octane) 26.00-31.50
- Regular (95 octane) 27.10-32.50
- Premium (100 octane) 28.40-33.50

Chicago:
- Regular (94 octane) 27.50-32.50
- Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
- Distillate No. 1 ..... 27.50-33.50
- Distillate No. 2 ..... 26.50-32.00

Gulf Coast (cargoes):
- Kerosine (42-43) 27.25-28.75
- Distillate No. 2 ..... 26.00-27.00

Mid-Continent (Group 3):
- Kerosine (42-44) 28.00-30.25
- Diesel oil (58 d.i. & above) 27.50-30.00
- Distillate No. 1 ..... 27.00-29.75
- Distillate No. 2 ..... 26.00-27.75

New York Harbor (barges):
- Kerosine (42-44) 28.05-32.00
- Distillate No. 2 ..... 25.35-30.25
- Diesel fuel (48-52 d.i.) 27.80

Residual fuel

Mid-Continent (Group 3):
- No. 6 (max 1% S) $10.30
- No. 6 (over 1% S) ..... $ 9.30

Chicago:
- No. 6 (max. 1% S) $13.86
- No. 5 (max. 1% S) $14.70

New York Harbor (barges):
- No. 6 (max. 0.3% S) $12.95-14.13
- No. 5 (0.3% S) $13.15-14.38

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	2-14 1975	2-7 1975	2-15 1974	2-14 1975	2-7 1975	2-15 1974	2-14 1975	2-7 1975	2-15 1974
Gasoline	102	154	118	5	5	...	107	159	118
Special Naphthas	3	...	...	...	...	...	3	...	...
Kerosine	3	5	...	...	...	...	3	5	...
Distillate	167	190	234	5	5	10	172	195	244
No. 4 Fuel Oil	102	63	70	...	...	...	102	63	70
Residual	1,348	1,379	1,670	75	60	50	1,423	1,439	1,720
Jet Fuel (Naphtha)	25	40	...	...	5	6	25	45	6
Jet Fuel (Kerosine)	110	87	69	65	50	48	175	137	117
Asphalt	5	...	28	...	...	...	5	...	28
LP-Gas	122	136	137	22	21	13	144	157	150
Petrochem Feedstocks	15	17	...	...	...	...	15	17	...
Unfinished	38	100	92	15	...	22	53	100	114
Plant Condensate	84	129	103	5	5	7	89	134	110
Total Prod.	2,124	2,300	2,521	192	151	156	2,316	2,451	2,677
Canadian Crude	401	543	646	192	142	160	593	685	806
Other Foreign	2,652	2,305	727	354	972	368	3,006	3,277	1,095
Total Crude	3,053	2,848	1,373	546	1,114	528	3,599	3,962	1,901
Total imports	5,177	5,148	3,894	738	1,265	684	5,915	6,413	4,578

Worldwide crude-oil and gas production

OIL (1,000 b/d)	Nov. 1974*	Oct. 1974	11-month average Daily prod. 1973	11-month average Daily prod. 1974	Change from Vol	Change from %	GAS (billion cu ft) Nov. 1974	GAS (billion cu ft) Oct. 1974	GAS (billion cu ft) Cum. 1974
WESTERN HEMISPHERE									
Argentina	415.0	415.0	420.0	413.0	− 7.0	− 1.7	25.2	26.4	255.7
Bolivia	50.0	50.0	47.0	49.0	2.0	4.3	12.9	13.4	139.4
Brazil	195.0	195.0	166.0	177.0	11.0	6.6	4.2	3.7	43.3
Canada	1,468.0	1,597.0	1,794.0	1,689.0	−105.0	− 5.9	301.7	291.7	3,030.0
Chile	30.0	30.0	32.0	29.0	− 3.0	− 9.4	19.2	20.1	192.9
Colombia	165.0	165.0	196.0	174.0	− 22.0	−11.2	10.1	9.7	95.8
Ecuador	56.0	95.0	216.0	162.0	− 54.0	−25.0	0.3	0.4	5.1
Mexico	600.0	600.0	464.0	547.0	83.0	17.9	58.6	58.9	624.4
Peru	75.0	75.0	70.0	76.0	6.0	8.6	6.5	6.6	67.3
Trinidad	180.0	180.0	165.0	178.0	13.0	7.9	4.8	5.0	62.5
United States	8,647.0	8,777.0	9,201.0	8,838.0	−363.0	− 3.9	1,971.2	1,911.2	20,365.7
Venezuela	2,805.0	2,810.0	3,365.0	2,986.0	−379.0	−11.3	45.0	45.0	1,411.2
Total	**14,686.0**	**14,989.0**	**16,136.0**	**15,318.0**	**−818.0**	**− 5.1**	**2,459.7**	**2,392.1**	**26,293.3**
WESTERN EUROPE									
Austria	45.0	45.0	49.0	46.0	− 3.0	− 6.1	5.2	4.9	82.7
Denmark	4.0	4.0	4.0	2.0	− 2.0	−50.0	0	0	0
France	25.0	25.0	26.0	24.0	− 2.0	− 7.7	32.3	18.6	269.0
West Germany	120.0	120.0	129.0	122.0	− 7.0	− 5.4	51.6	50.4	623.7
Italy	20.0	20.0	20.0	19.0	− 1.0	− 5.0	33.0	32.9	522.2
Netherlands	24.0	39.0	29.0	31.0	2.0	6.9	241.7	234.2	2,633.3
Norway	57.0	44.0	35.0	33.0	− 2.0	− 5.7	0	0	0
Spain	30.0	30.0	15.0	37.0	22.0	146.7	0	0	0
United Kingdom	2.0	2.0	2.0	2.0	....	....	71.1	69.9	1,139.0
Yugoslavia	65.0	65.0	67.0	67.0	....	....	5.2	4.7	49.9
Total	**392.0**	**394.0**	**376.0**	**383.0**	**7.0**	**1.8**	**440.1**	**415.6**	**5,319.8**
MIDDLE EAST									
Abu Dhabi	1,204.0	1,169.0	1,325.0	1,430.0	105.0	7.9	0	0	0
Bahrain	67.0	68.0	68.0	67.0	− 1.0	− 1.5	0.1	0.1	3.2
Dubai	268.0	262.0	227.0	248.0	21.0	9.3	0	0	0
Iran	6,015.0	5,720.0	5,841.0	6,036.0	195.0	3.3	75.4	74.2	830.0
Iraq	1,812.0	1,877.0	1,937.0	1,821.0	−116.0	− 6.0	11.1	11.2	118.4
Israel	100.0	100.0	92.0	100.0	8.0	8.7	0.2	0.2	4.0
Kuwait	2,546.0	2,060.0	3,067.0	2,567.0	−500.0	−16.3	0.1	0.1	1.5
Oman	281.0	280.0	292.0	291.0	− 1.0	− 0.3	0	0	0
Qatar	520.0	525.0	580.0	519.0	− 61.0	−10.5	0.1	0.1	1.6
Saudi Arabia	8,818.0	9,052.0	7,699.0	8,522.0	823.0	10.7	0	0	0
Sharjah†	60.0	60.0	....	17.0	17.0	....	0	0	0
Syria	155.0	155.0	104.0	130.0	26.0	25.0	0	0	0
Turkey	65.0	65.0	67.0	65.0	− 2.0	− 3.0	0	0	0
Total	**21,911.0**	**21,393.0**	**21,299.0**	**21,813.0**	**514.0**	**2.4**	**87.0**	**85.9**	**958.7**
ASIA-PACIFIC									
Afghanistan	0	0	0	0	0	0	7.6	7.8	85.0
Australia	459.0	465.0	369.0	381.0	12.0	3.3	14.2	15.6	146.7
Burma	20.0	20.0	20.0	20.0	....	....	0.6	0.6	5.5
Brunei-Malaysia	365.0	365.0	318.0	341.0	23.0	7.2	0.9	0.8	2.9
India	150.0	150.0	147.0	149.0	2.0	1.4	1.4	1.5	16.9
Indonesia	1,135.0	1,250.0	1,317.0	1,386.0	69.0	5.2	18.2	17.1	143.3
Japan	15.0	15.0	14.0	15.0	1.0	7.1	7.2	7.1	88.4
Pakistan	9.0	9.0	9.0	9.0	....	....	14.0	13.9	129.7
Taiwan	3.0	3.0	2.0	3.0	1.0	50.0	4.2	4.3	41.2
Thailand	0.2	0.2	0.2	0.2	....	....	0	0	0
Total	**2,156.2**	**2,277.2**	**2,196.2**	**2,304.2**	**108.0**	**4.9**	**68.3**	**68.7**	**659.6**
AFRICA									
Algeria	900.0	900.0	1,107.0	1,045.0	− 62.0	− 5.6	1.8	1.7	18.9
Angola	20.0	20.0	17.0	20.0	3.0	17.6	5.2	5.1	36.0
Cabinda	150.0	150.0	144.0	149.0	5.0	3.5	0	0	0
Congo	35.0	35.0	41.0	35.0	− 6.0	−14.6	0.7	0.6	5.5
Egypt	175.0	175.0	178.0	141.0	− 37.0	−20.8	4.6	4.7	44.5
Gabon	190.0	190.0	146.0	177.0	31.0	21.2	1.5	1.5	13.7
Libya	961.0	1,069.0	2,226.0	1,539.0	−687.0	−30.9	3.2	3.1	37.9
Morocco	1.0	1.0	1.0	1.0	....	....	1.8	1.9	26.5
Nigeria	2,300.0	2,325.0	2,036.0	2,280.0	244.0	12.0	5.0	4.7	53.9
Tunisia	105.0	105.0	82.0	86.0	4.0	4.9	2.9	3.0	14.3
Total	**4,837.0**	**4,970.0**	**5,978.0**	**5,473.0**	**−505.0**	**− 8.4**	**26.7**	**26.3**	**251.2**
COMMUNIST									
China	1,200.0	1,200.0	1,060.0	1,200.0	140.0	13.2	14.8	15.6	171.9
Rumania	290.0	290.0	290.0	290.0	....	....	77.8	77.9	855.5
U.S.S.R.‡	9,441.0	9,369.0	8,558.0	9,158.0	600.0	7.0	811.2	808.4	8,365.4
Other	110.0	110.0	100.0	110.0	10.0	10.0	41.2	38.7	456.2
Total	**11,041.0**	**10,969.0**	**10,008.0**	**10,758.0**	**750.0**	**7.5**	**945.0**	**940.6**	**9,849.0**
World Total	**55,023.2**	**54,992.2**	**55,993.2**	**56,049.2**	**56.0**	**0.1**	**4,026.8**	**3,929.2**	**43,331.6**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 1-21-75	Pump price 1-21-75	Pump price 1-22-74
Albany	44.9	56.9	49.9
Albuquerque	42.4	53.4	43.9
+Amarillo	40.1	49.1	39.9
Atlanta	42.1	53.6	45.4
Baltimore	41.9	54.9	48.9
Birmingham	41.9	53.9	47.9
Boston*	42.1	53.6	45.4
Buffalo	44.9	56.9	49.9
Charlotte	41.9	54.9	48.9
Cheyenne	44.9	55.9	49.9
Chicago*	43.6	56.6	50.4
Cleveland	42.9	53.9	47.9
+Corpus Christi	40.6	49.6	39.9
+Dallas	40.6	49.6	39.9
Denver	43.9	54.9	48.9
Des Moines	41.0	52.0	43.9
Detroit	41.5	54.5	49.9
+Fort Worth	40.6	49.6	39.9
+Houston	40.6	49.6	39.9
Indianapolis	43.9	55.9	49.9
Jacksonville	41.9	53.9	47.9
Kansas City	43.4	54.4	47.9
Little Rock	39.5	51.0	42.9
Louisville	44.9	55.9	49.9
Los Angeles	40.7	51.7	43.9
Memphis	41.0	52.0	43.9
Miami	41.6	53.6	45.4
Milwaukee	43.9	54.9	48.9
Minn.-St. Paul	42.0	53.0	44.9
Newark	43.6	54.6	46.4
New Orleans	40.9	52.9	46.9
New York*	45.9	58.9	52.9
Norfolk	39.6	52.6	44.4
Okla. City	41.8	52.4	42.9
Omaha	43.4	55.9	49.9
Philadelphia	41.9	54.9	47.9
Phoenix	43.9	54.9	44.9
Pittsburgh	41.9	54.9	47.9
Portland, Ore.	41.9	52.9	44.1
Salt Lake City	42.4	53.4	46.9
+San Antonio	40.1	49.1	39.9
San Diego	41.3	52.3	43.9
San Francisco	41.4	52.4	44.9
Seattle	40.5	53.5	45.9
Spokane	40.5	53.5	46.9
Springfield, Ill.*	42.0	55.0	46.9
St. Louis	43.9	54.9	48.9
Tampa	41.6	53.6	45.4
+Texarkana	40.1	49.1	39.9
Tulsa	40.4	51.0	42.9
Wichita	42.9	53.9	47.9
+Wichita Falls	40.1	49.1	39.9
Week's avg.	**42.06**	**53.37**	**45.86**
Dec. avg.	**41.42**	**52.74**	**42.02**
Nov. avg.	**41.11**	**52.42**	**40.35**
1975 to date	**41.81**	**53.12**	
1974 to date	**34.39**	**45.67**	

+ Increase, – decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday of each week. They may differ from refiner's prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
- Regular (92 octane) 26.75-30.00
- Premium (99 octane) 28.75-32.00

California (rack) Los Angeles:
- Regular (91 octane) 25.00-31.50
- Regular (95 octane) 26.10-32.50
- Premium (100 octane) 27.40-33.50

Chicago:
- Regular (94 octane) 27.50-32.50
- Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
- Distillate No. 1 ..... 27.50-33.50
- Distillate No. 2 ..... 26.50-32.00

Gulf Coast (cargoes):
- Kerosine (42-43) 29.00-31.00
- Distillate No. 2 ..... 28.00-29.00

Mid-Continent (Group 3):
- Kerosine (42-44) 28.00-30.25
- Diesel oil (58 d.i. & above) 27.50-30.00
- Distillate No. 1 ..... 27.00-29.75
- Distillate No. 2 ..... 26.00-27.75

New York Harbor (barges):
- Kerosine (42-44) 28.05-32.00
- Distillate No. 2 ..... 25.35-30.25
- Diesel fuel (48-52 d.i.) 27.80

Residual fuel

Mid-Continent (Group 3):
- No. 6 (max 1% S) $10.30
- No. 6 (over 1% S) ..... $ 9.30

Chicago:
- No. 6 (max. 1% S) $13.86
- No. 5 (max. 1% S) $14.70

New York Harbor (barges):
- +No. 6 (max. 0.3% S) $13.03-14.13
- +No. 5 (0.3% S) $13.25-14.38

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	1-17 1975	1-10 1975	1-18 1974	1-17 1975	1-10 1975	1-18 1974	1-17 1975	1-10 1975	1-18 1974
Gasoline	138	142	116	5	5		143	147	116
Special Naphthas	...	...	...	...	...	...	...	...	...
Kerosine	6	5	4	...	...	...	6	5	4
Distillate	370	260	358	5	5	10	375	265	368
No. 4 Fuel Oil	87	67	75	...	...	...	87	67	75
Residual	1,721	1,856	1,586	60	60	100	1,781	1,916	1,686
Jet Fuel (Naphtha)	40	40	11	5	5	7	45	45	18
Jet Fuel (Kerosine)	63	69	110	55	57	60	118	126	170
Asphalt	6	8	28	...	...	...	6	8	28
LP-Gas	135	131	98	22	23	12	157	154	110
Petrochem. Feedstocks	15	15	...	...	...	...	15	15	...
Unfinished	107	45	102	...	25	32	107	70	134
Plant Condensate	64	77	96	5	5	6	69	82	102
Total Prod.	**2,752**	**2,715**	**2,584**	**157**	**185**	**227**	**2,909**	**2,900**	**2,811**
Canadian Crude	498	328	696	184	192	157	682	520	853
Other Foreign	2,623	2,234	1,199	497	440	119	3,120	2,674	1,318
Total Crude	**3,121**	**2,562**	**1,895**	**681**	**632**	**276**	**3,802**	**3,194**	**2,171**
Total Imports	**5,873**	**5,277**	**4,479**	**838**	**817**	**503**	**6,711**	**6,094**	**4,982**

Total wells drilled in the United States*—December 1974†

State-district	Data compiled by API: Total completions: Oil‡	Gas§	Dry holes	Total wells	Total footage	Total all types‖	Total footage‖	Total exploratory wells¶: Oil‡	Gas§	Dry holes	Total wildcats	Footage
Alabama	1	2	6	9	78,129	9	78,129	...	1	5	6	48,254
Alaska	5	....	1	6	54,356	6	54,356	1	...	1	2	18,541
Onshore	3	....	1	4	40,739	4	40,739	1	...	1	2	18,541
Offshore	2	....	....	2	13,617	2	13,617	...	...	....	....	.....
Arkansas	18	4	27	41	217,984	41	217,984	...	1	9	10	66,934
California	222	11	38	27	700,544	322	771,273	6	2	27	35	210,002
North	1	8	19	28	154,236	28	154,236	...	2	14	16	87,878
Central Coastal	29	....	1	30	112,204	32	120,430	4	...	1	5	31,012
East entral	186	2	18	206	396,984	251	436,815	2	...	12	14	91,112
South	2	....	....	2	7,487	5	29,359	...	...	....	....	.....
Offshore	4	1	....	5	29,633	6	30,433	...	...	....	....	.....
Colorado	17	19	45	81	491,127	81	491,127	...	2	30	32	184,020
Florida	....	....	2	2	19,008	2	19,008	...	...	1	1	6,646
Illinois	72	2	87	161	404,640	170	420,340	5	1	35	41	113,871
Indiana	10	2	18	30	48,733	30	48,733	1		10	11	21,169
Kansas	85	34	111	230	735,899	253	777,591	9	7	59	75	262,895
Kentucky	9	7	24	40	58,535	43	63,283	1		12	13	17,888
Louisiana	87	66	143	296	2,353,464	324	2,370,954	4	14	69	87	879,269
North	36	19	43	98	433,188	125	444,840	1	3	22	26	196,336
South	39	36	82	157	1,507,158	157	1,507,158	3	11	38	52	603,873
Offshore	12	11	18	41	413,118	42	418,956	...	...	9	9	79,060
Michigan	10	9	18	37	185,625	37	185,625	5	3	15	23	108,916
Mississippi	3	6	26	35	242,437	35	242,437	1		24	25	196,717
Missouri	7		2	9	5,636	59	8,995	...	...	2	2	4,868
Montana	10	36	57	113	294,727	113	294,727	2	5	44	51	142,702
Nebraska	2		18	20	99,213	20	99,213	2		12	14	66,408
New Mexico	41	31	21	93	527,560	93	527,560	2	3	14	19	142,292
East	32	11	17	60	398,238	60	398,238	2	3	12	17	132,344
West	9	20	4	33	129,322	33	129,322	...		2	2	9,948
New York	28	43	33	104	288,276	111	297,658		19	28	47	185,852
North Carolina			1	1	5,348	1	5,348			1	1	5,348
North Dakota	8		9	17	107,368	17	107,368	3		8	11	61,824
Ohio	60	142	25	227	920,717	227	920,717	3	29	4	36	159,790
Oklahoma	181	86	138	405	2,087,201	416	2,114,650	8	3	34	45	289,545
Pennsylvania	38	44	5	87	212,486	88	214,416	1	3	4	8	21,453
South Dakota			1	1	2,342	1	2,342			1	1	2,342
Tennessee	11	3	12	26	40,749	26	40,749	3	3	11	17	26,994
Texas	367	183	312	862	4,428,245	902	4,521,237	28	65	184	277	1,708,273
Dist. 1	14	10	9	33	118,490	34	120,395		5	8	13	59,302
Dist. 2	9	35	31	75	440,844	75	440,844	2	18	19	39	238,182
Dist. 3	53	17	31	101	561,140	101	561,140	7	11	18	36	304,111
Dist. 4	26	39	36	101	606,476	101	606,476	6	7	18	31	165,526
Dist. 5	4	4	8	16	84,711	17	85,825		2	5	7	29,501
Dist. 6	7	5	16	28	170,392	32	190,302		1	9	10	55,050
Dist. 7B	27	10	62	99	345,022	105	354,155	1		34	35	152,410
Dist. 7C	18	22	22	62	307,365	62	307,365	2		14	16	71,837
Dist. 8	76	10	10	96	615,241	105	638,382	2	4	7	13	132,984
Dist. 8A	56		15	71	395,222	89	431,961			8	8	73,809
Dist. 9	72	20	46	138	463,991	139	465,041	8	12	26	46	229,696
Dist. 10	5	6	15	26	187,417	26	187,417		2	7	9	80,371
Offshore		5	11	16	131,934	16	131,934		3	11	14	115,494
Utah	6	5	7	18	134,903	18	134,903	1	2	5	8	54,719
Virginia		17		17	85,571	17	85,571		6		6	31,443
West Virginia	8	38	10	56	180,849	58	185,849	...	2	7	9	36,496
Wyoming	41	1	64	106	678,221	108	687,961	5	1	48	54	383,917
Gulf of Mexico—Northern	...	...	3	3	19,199	3	19,199	...	...	3	3	19,199
Total—Dec. 1974	1,339	791	1,274	3,404	15,707,092	3,629	15,994,303	91	172	707	970	5,478,587
Total—Nov. 1974	1,088	626	1,053	2,767	11,794,937	2,906	12,027,247	58	82	582	722	3,930,077
Total 1974	12,718	7,200	11,930	31,848	151,651,515	33,070	154,236,372	813	1,186	6,761	8,760	51,069,932
Total 1973	9,902	6,385	10,305	26,592	131,391,452	27,602	138,937,944	619	900	5,947	7,466	44,776,906

*Does not include miscellaneous drilling not related to oil and gas exploration and production. †Covers reports of completed or abandoned wells received by the API during the period from Nov. 23, 1974, through Dec. 27, 1974. ‡Includes multiple completion wells which produce gas from one or more zones but oil from at least one zone. A multiple completion well is counted as one well. §Includes multiple completion wells that produce gas from all zones. A multiple completion well is counted as one well. Gas wells also include so-called condensate wells. ¶Exploratory wells include: new-field wildcats, new-pool wildcats, deeper-pool tests, shallower-pool tests and outpost (extension) tests. ‖Includes 63 strat tests and 162 service wells, 12,679 and 274,532 ft, respectively.

Offshore bidding seminars slated

A SERIES of seminars will be held in February by ECON Inc. of New Jersey.

This series on offshore oil bidding will be held in the Royal Orleans Hotel in New Orleans on Feb. 13, the Houston Oaks on Feb. 18, and at the Dallas Hilton on Feb. 20. Meetings begin at 9 a.m. Contact John Andrews at 609-924-8778, ECON, Princeton, N.J.

MAPS

TWO oil and gas field maps of two of the country's most active drilling areas have been updated.

Map. 43, "Southeast United States Map Showing Jurassic Trend" and Map 2, "Official Oil and Gas fields of Oklahoma and Texas Panhandle" are available from E. C. Jacobson Co., 315 Mayo Bldg., Tulsa 74103. These maps show oil fields in green, gas fields in red with official names. Also shown are counties, county seats, township and range.

OKLAHOMA

ANOTHER field has been tapped in Central Oklahoma's busy Canadian County.

New area was found by Samedan Oil Co. at 1 Johnson estate in S½ N½ S½ NW 26-11n-10w. Flow was 3,912 Mcfd through 11/64-in. choke and 4½ bbl oil in 8 hr. Pay is from the Morrow Pennsylvanian through perforations at 12,314 ft. Open flow was 6,000 Mcfd.

In another important Oklahoma development. Helmerich & Payne will drill north of its Arbuckle Cambro-Ordovician discovery in Beckham County. This western area well will be the 1 Cupp-A in S½ S½ NE SW 22-10n-26w.

IRAN

ON p. 140 of the Dec. 30, 1974, issue of the Journal, the cumulative production figure for Lapco's Sassan field in Iran should read 313,623,494 bbl rather than 102,556,000 bbl.

This changes total Iranian cumulative to 18,972,000,310 bbl rather than 18,760,932,816 bbl.

Total wells drilled in the United States*—November 1974†

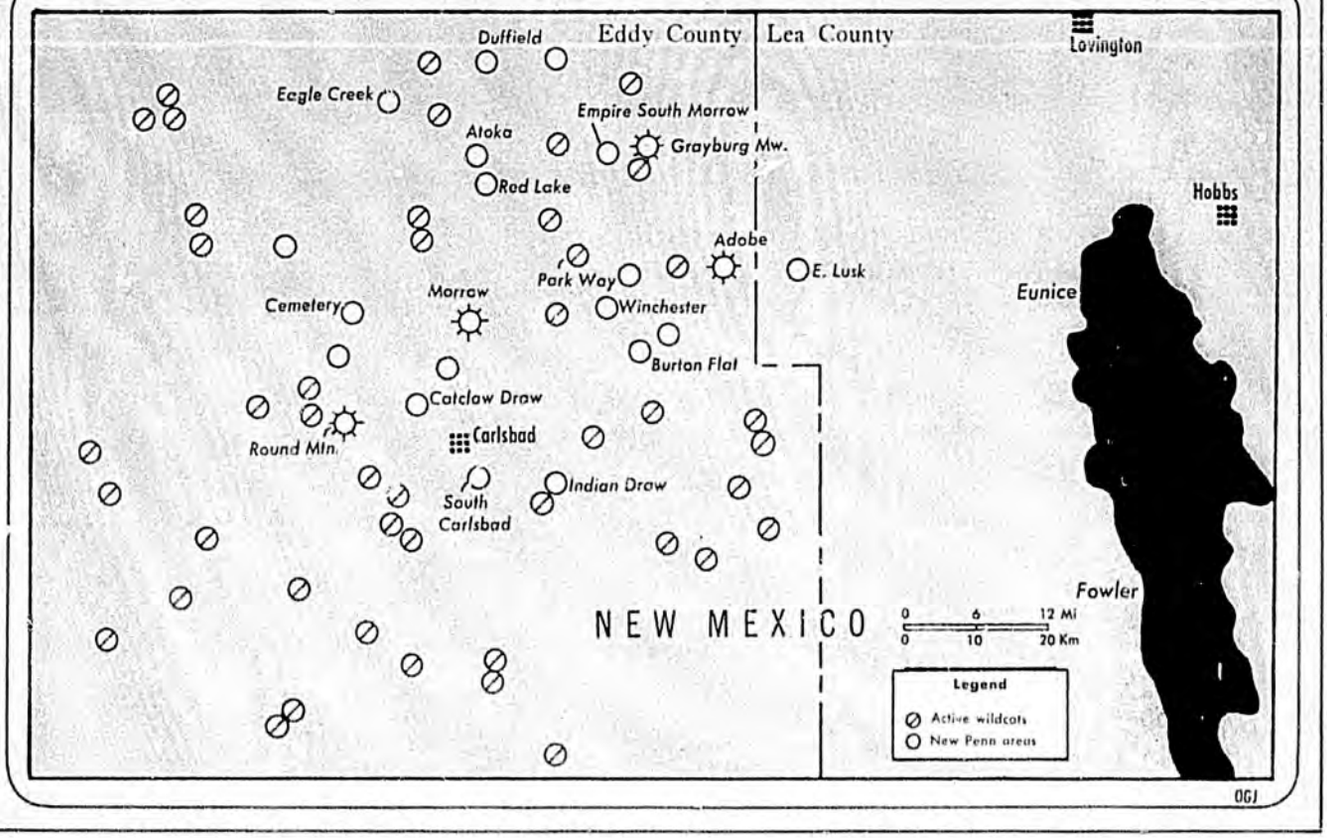
Data compiled by API

State-district	Total completions: Oil‡	Gas§	Dry holes	Total wells	Total footage	Total wells all types‖	Total footage‖	Total exploratory wells¶: Oil‡	Gas§	Dry holes	Total wildcats	Footage
Alabama	....	2	4	6	54,599	6	54,599	....	....	2	2	20,555
Arkansas	7	3	11	21	113,061	21	113,061	....	....	5	5	26,323
California	101	6	29	136	358,600	164	388,956	1	3	24	28	131,368
North	....	6	14	20	115,612	20	115,612	....	3	12	15	88,618
Central Coastal	10	....	2	12	41,271	14	44,343	....	....	2	2	8,625
East Central	77	....	13	90	164,639	116	191,923	1	....	10	11	34,125
South	9	....	....	9	20,928	9	20,928	....	....	....	....	.....
Offshore	5	....	....	5	16,150	5	16,150	....	....	....	....	.....
Colorado	10	15	31	56	349,087	56	349,087	3	4	24	31	189,560
Florida	....	....	2	2	25,684	2	25,684	....	....	2	2	25,684
Illinois	31	....	52	83	207,357	87	215,217	2	....	21	23	60,876
Indiana	15	1	25	41	76,744	42	78,814	2	....	15	17	35,648
Kansas	102	16	130	248	736,551	276	771,940	8	3	62	73	283,038
Kentucky	23	6	45	74	102,012	80	109,007	1	1	22	24	33,125
Louisiana	59	44	95	198	1,261,221	201	1,271,427	1	3	58	62	471,740
North	32	32	49	113	476,336	115	477,806	1	3	28	32	164,026
South	15	4	30	49	459,982	49	459,982	....	....	17	17	197,777
Offshore	12	8	16	36	324,903	37	333,639	....	....	13	13	109,937
Michigan	13	4	14	31	162,221	34	171,406	6	3	7	16	85,907
Mississippi	4	1	24	29	228,820	29	228,820	2	....	15	17	129,641
Missouri	....	....	4	4	9,992	13	11,640	....	....	4	4	9,992
Montana	....	21	36	57	143,375	57	143,375	....	7	28	35	97,339
Nebraska	2	....	17	19	95,738	19	95,738	1	....	15	16	78,228
Nevada	....	....	1	1	11,000	1	11,000	....	....	1	1	11,000
New Mexico	30	29	17	76	359,551	76	359,551	3	2	13	19	88,131
East	24	9	11	44	234,003	44	234,003	2	2	8	12	67,137
West	6	20	6	32	125,548	32	125,548	1	....	5	6	20,994
New York	21	43	6	70	170,537	75	177,577	....	....	....	....	.....
North Dakota	1	....	9	10	76,007	10	76,007	....	....	8	8	56,592
Ohio	69	130	24	223	895,585	224	895,795	....	2	7	9	40,406
Oklahoma	90	46	75	211	1,093,840	224	1,123,983	4	5	18	27	164,004
Pennsylvania	103	67	9	179	369,277	202	411 938	2	5	5	12	39,091
Tennessee	3	3	5	11	17,144	11	17,144	1	2	4	7	11,017
Texas	352	121	334	807	4,112,389	821	4,157,446	19	33	185	237	1,504,909
Dist. 1	37	21	28	86	329,874	91	340,858	2	9	19	30	137,446
Dist. 2	6	14	26	46	282,334	47	289,342	1	7	18	26	170,307
Dist. 3	33	6	33	72	443,682	72	443,682	2	1	23	26	209,861
Dist. 4	11	17	15	43	252,735	43	252,735	....	5	10	15	101,577
Dist. 5	2	....	11	13	79,407	13	79,407	....	....	8	8	63,202
Dist. 6	3	12	8	23	204,137	23	204,137	....	2	7	9	91,741
Dist. 7B	24	14	82	120	385,120	120	385,120	2	4	36	42	155,156
Dist. 7C	26	15	31	72	401,975	72	401,975	4	....	16	20	95,529
Dist. 8	91	9	26	126	727,809	128	733,474	3	3	10	16	167,268
Dist. 8A	54	....	13	67	383,205	71	398,764	2	....	8	10	67,877
Dist. 9	52	5	39	96	307,298	98	313,139	2	....	14	16	80,093
Dist. 10	13	8	15	36	260,482	36	260,482	1	2	9	12	110,521
Offshore	....	....	7	7	54,331	7	54,331	....	....	7	7	54,331
Utah	3	....	7	10	49,758	10	49,758	....	....	6	6	27,853
Virginia	....	8	....	8	37,230	8	37,230	....	....	....	....	.....
West Virginia	33	58	9	100	277,259	100	277,259	1	7	2	10	33,943
Wyoming	16	2	36	54	391,163	55	394,753	1	2	27	30	264,972
Gulf of Mexico—Northern	....	....	2	2	9,135	2	9,135	....	....	2	2	9,135
Total—Nov. 1974	**1,088**	**626**	**1,053**	**2,767**	**11,794,937**	**2,906**	**12,027,247**	**58**	**82**	**582**	**722**	**3,930,077**
Total—Oct. 1974	**1,131**	**551**	**1,241**	**2,923**	**14,080,534**	**3,054**	**14,392,760**	**67**	**93**	**661**	**821**	**4,779,364**
Cum. 1974	**11,379**	**6,409**	**10,656**	**28,444**	**135,944,423**	**29,441**	**138,242,069**	**722**	**1,014**	**6,054**	**7,790**	**45,591,345**
Cum. 1973	**8,805**	**5,535**	**9,134**	**23,474**	**118,185,567**	**24,438**	**120,422,776**	**558**	**744**	**5,269**	**6,571**	.....

*Does not include miscellaneous drilling not related to oil and gas exploration and production. †Covers reports of completed or abandoned wells received by the API during the period from Oct. 26, 1974, through Nov. 22, 1974. ‡Includes multiple completion wells which produce gas from one or more zones but oil from at least one zone. A multiple completion well is counted as one well. §Includes multiple completion wells that produce gas from all zones. A multiple completion well is counted as one well. Gas wells also include so-called condensate wells. ¶Exploratory wells include: new-field wildcats, new-pool wildcats, deeper-pool tests, shallower-pool tests and outpost (extension) tests. ‖Includes 24 strat tests and 115 service wells, 8,102 and 224,208 ft., respectively.

JOHN C. McCASLIN
Exploration Editor

Sweeping new gas exploration



No letup signs seen for Eddy County drilling

THE standard industry symbol for showing an active gas well or gas field is colored red.

Eddy County and adjoining Southeast New Mexican areas on the activity maps these days are nearly covered with red ink. Not since the early days of the Permian basin oil and gas industry has this corner of the Southwest seen so much action. The accompanying map tells the story with its multitude of drilling sites and new Pennsylvanian areas. Only Eddy is discussed here, but the adjoining Lea and Chaves areas are also quite busy. Wildcat symbols are the only ones shown on this map. It would be impossible to dot all of the active field wells in the area.

From Chaves County. Although Chaves County is not shown on this map, it lies just to the north of Eddy County.

The southern portion of this New Mexico area is also in on the gas exploration. Depco. Inc. 1 Toles-Federal, a 9,300-ft wildcat in southeastern Chaves, 10 miles east of Lake Arthur, was recently completed as a Morrow Pennsylvanian gas discovery. Flow was 1,612 Mcfd with gas-liquid ratio of 22,000:1. New strike is in 25-15s-27e, 1½ miles southeast of Atoka gas at Buffalo Valley. Perforations were made at 8,930-38 ft.

From Chaves County the drilling swath moves into Eddy County. Many discoveries have been made in recent months. Some of the newer ones include Tenneco Oil Co.'s 1 Federal Com. "33," the second well and ¾-mile south extension to Grayburg Morrow field. This Morrow gas area is 5 miles southwest of Loco Hills town. Flow was 15,408 Mcfd from perforations in the Morrow at 10,761-10,804 ft. Well is in 33-17s-29e.

Another well is Adobe Oil Co. 1 Hanadifin State Com., a workover well 12 miles southeast of Loco Hills town in eastern Eddy. Flow was 572,000 cu ft from Morrow perforations at 11,719-12,225 ft. This well is 3 miles northwest of dual Strawn oil and Morrow gas production in Lusk field.

Monsanto Co. 1 Round Mountain is a new gas discovery for Eddy in 28-21s-25e. Flow here was 1,859 Mcfd from the Morrow through perforations at 10,358-59 ft.

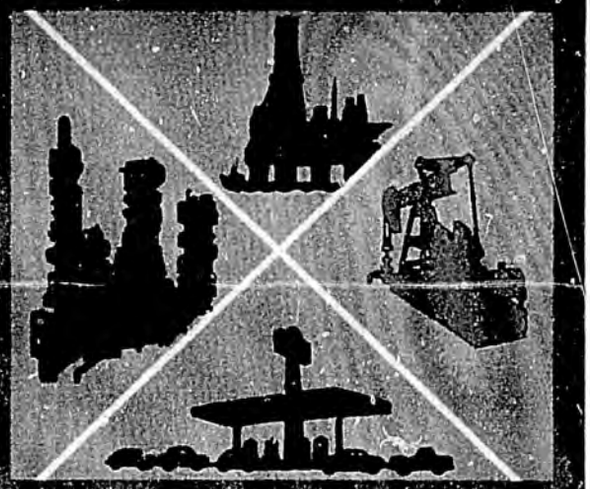
To prolific Lea County. The Southeast New Mexico Pennsylvanian gas play has also popped up in Lea County, the prolific area where most of New Mexico's oil production lies.

There are several wildcats drilling for Morrow gas in the western part of the county that are not shown on the map. But the area from Carlsbad northeast in Eddy County is where most of the action is concentrated. This Pennsylvanian program has been under way several years, but the big push was in 1974. And, there are no signs of any letup in 1975.

PLEASE NOTE: THE FOLLOWING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

FORECAST/REVIEW

AN OIL&GAS JOURNAL SPECIAL REPORT



Uncertainties plague '75 outlook for oil

AMERICANS face some hard decisions early in the new year on their consumption of petroleum products—decisions which make the outlook for demand highly uncertain.

The Ford Administration has made it clear that some form of restriction on consumption will be imposed to reduce the nation's use of high-cost imported oil and products. The most often mentioned goal is a reduction of 1 million b/d.

But just what form the restriction on consumption will take is not clear. Reports have mentioned higher tariff on imports, compulsory allocations, high taxes on crude or products especially on gasoline, or even gasoline rationing.

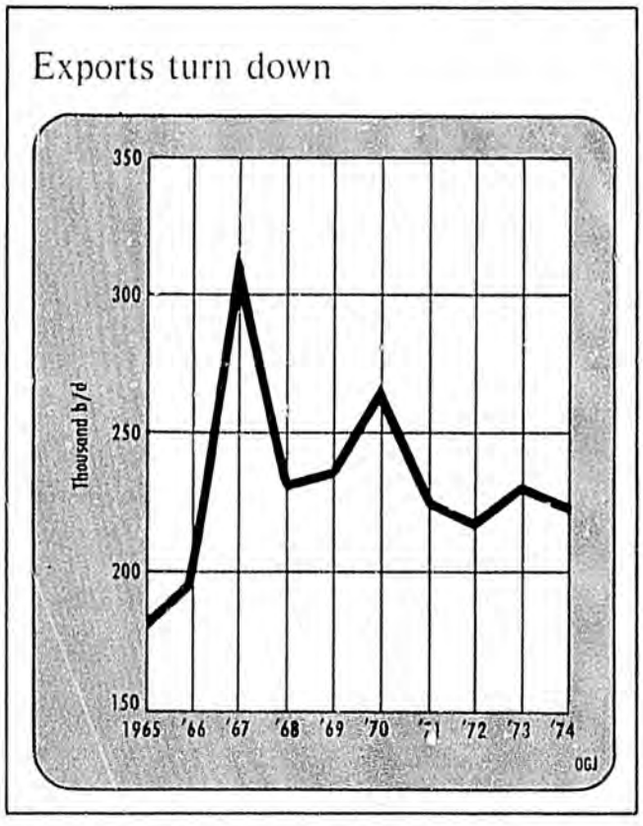
It's also not clear what base period will be used for the reduction—whether the cutback will be from 1974 actual import levels or the expected 1975 levels.

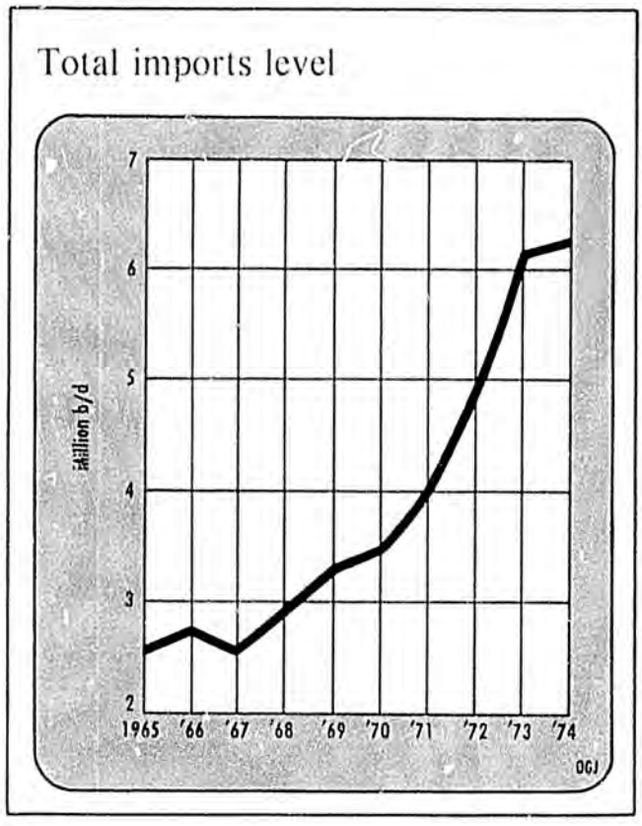
Turnaround? The base period used will determine the severity of the impact on the nation's economy.

The normal outlook is for petroleum demand in this country to turn upward again in 1975 after a historic decline in 1974. But since domestic production of oil and gas will continue to drop, the nation must rely more heavily on imports of high-priced crude and products this year to fill the gap.

This means that a 1-million-b/d cutback from the 1974 import levels actually will represent a 1.4-million-b/d reduction from the expected 1975 import volumes. This would wipe out any growth in demand for 1975 and return consumption near the 1971 levels. But if the reduction is taken from anticipated 1975 levels, the actual impact would amount to only about 710,000 b/d less than in 1974.

In either case, the reduction would force considerable belt tightening throughout the economy. Motorists and householders would be faced with higher prices for the gasoline and heating oils they will be allowed to use. Industries and businesses where energy is an important item would find their





costs increased. The result would be further disruptions to an economy which is torn between an inflation or recession scenario.

What to expect. The uncertainty of governmental action makes any forecast of 1975 supply-demand for petroleum a hazardous exercise.

Journal editors believe that total domestic demand for 1975 would average 17,035,000 b/d or 1.8% higher than last year without giving consideration to federal compulsory conservation measures.

This would represent a turnaround from 1974 when demand averaged 16,735,000 b/d, a 3.1% decline from 1973 and the first time since World War II that petroleum demand has failed to show an increase. The decline reflected the tail end of the Arab embargo on oil shipments to this country and the effect of soaring prices for imported oil and products.

With ample crude oil now available on world markets—if buyers are willing or able to pay the high prices—Journal editors feel that demand will recover slightly from 1974 levels.

Oil economists last October, in estimating this turnaround, forecast a 4% gain for demand in 1975 over 1974, but economic events since have prompted most of them to pare this estimate sharply. The continuing slump in new auto sales, failure of housing to increase, growing numbers of unemployed, and the deepening of depressing factors throughout the economy make about a 2% gain in demand more probable. Winter weather so far also has not been as severe as anticipated thus keeping consumption of heating oils lower than expected.

But even this 1.8% growth will be reversed if the administration imposes some form of compulsory conservation of energy.

More problems. As for individual products, no shortages are anticipated under normal considerations, but 1975 probably will be far from normal.

Government policy could scramble the outlook. Federal policy, for example, likely will emphasize reducing the volume of imported products over crude since they are more expensive than crude oil and would represent greater dollar savings. Also, policy for domestic consumption likely will emphasize reduction in the use of gasoline.

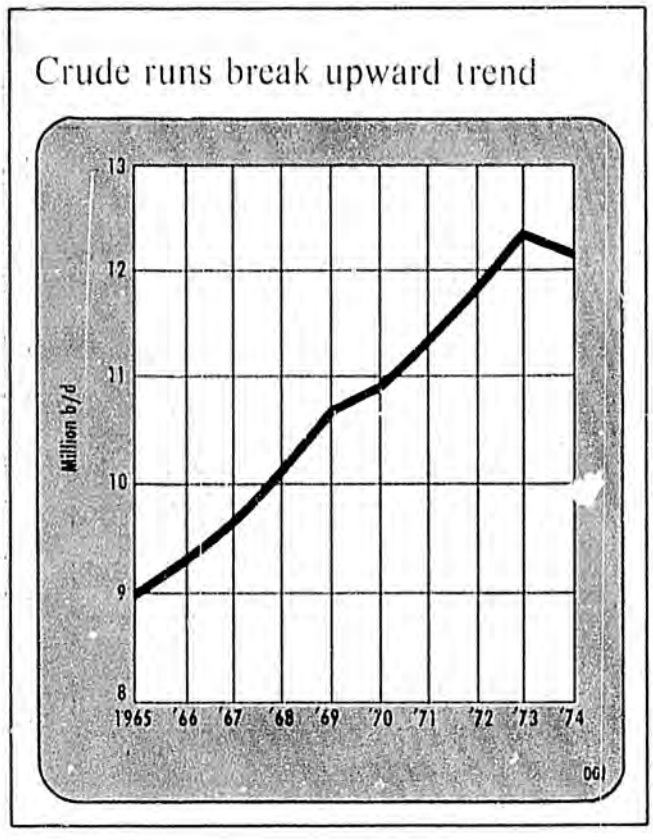
This double policy poses problems for the petroleum industry. Refiners will need the imported crude to operate their plants at necessary capacities, but they also will still need to import a heavy volume of residual particularly and in some cases middle distillates. The residual-making capacity of domestic refiners is limited. Also, refiners in processing a barrel of crude are forced by the nature of their plant arrangements to make from 40-45% gasoline, even while maximizing output of middle distillates or residual. If gasoline consumption thus is severely restricted, refiners may find themselves with gasoline overflowing storage and unable to sell it.

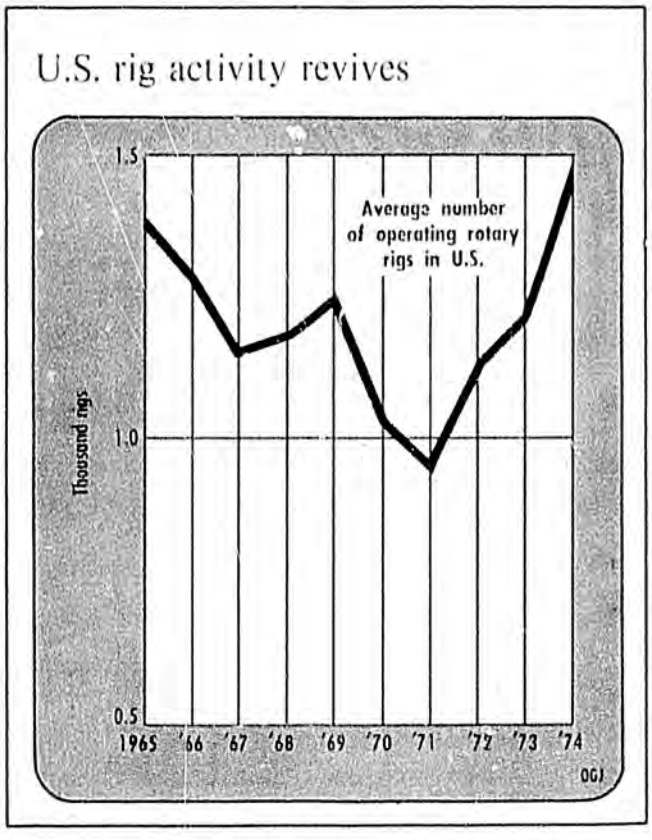
A look at '74. The year 1974 closed after setting historical trends under pressure from the Arab embargo, government regulations, and price changes throughout the petroleum industry.

Preliminary calculations indicate that supply exceeded demand in the U.S. during 1974. This allowed for some stock building to occur, with the possible exception of distillate and kerosine inventories. Estimates are 16,960,000 b/d for demand and 17,245,000 b/d for supply. These estimates yield reductions of 3.1% and 2.2%, respectively, when compared with 1973.

The supply came from domestic production of 10,495,000 b/d, including 8,800,000 b/d of crude and condensate and 1,695,000 b/d of natural-gas liquids. Imports added another 6,275,000 b/d, with crude shipments averaging 3,500,000 b/d and products 2,775,000 b/d.

Demand for the major products included gasoline consumption of 6,560,000 b/d, jet fuels 980,000 b/d, distillates 3,060,000 b/d (including kerosine), and residual 2,665,000 b/d. Do-





mestic demand totaled 16,735,000 b/d with exports of 225,000 b/d during the year.

A look at '75. Imports and governmental involvement are the key questions that are currently unresolved for the 1975 outlook.

Many analysts are adopting a "wait and see" attitude in hopes that Washington policies will be more clearly defined before they settle on a forecast for 1975. However, most industry economists are predicting that normal demand will range from zero growth to a high of about 3%.

Journal editors are forecasting gasoline demand will average 6,625,000 b/d during 1975. This 1.0% increase over 1974 fails to bring gasoline demand back to the level reached in 1973. The major consideration influencing gasoline demand is the sales of new autos. Presently, new-car sales are very depressed. Sales closely follow auto production which closed the year 1974 down 24%. This factor may be tempered somewhat by recreational gasoline use. Drivers are becoming more accustomed to the current price level of motor gasoline and are expected to drive more unless new restraints are imposed.

Jet fuels are expected to increase by 1.1% over the calculated level for 1974. This increase puts aviation fuels back at their 1971 level of consumption. U.S. airline activity was at one of its lowest levels for both passenger and freight service in the month of November. Slight strength began to show in December air traffic, and some restoration of flights is expected during 1975.

Heating oils. The cold winter that was expected to force distillate demand up so far has failed to materialize. Even so, distillate demand (including kerosine) is forecast at 3,140,000 b/d. This is a relatively healthy increase of 2.6% in comparison with 1974. Continued declines in natural-gas production are expected to contribute to this increase. Factors which tend to moderate distillate demand include price-induced conservation measures being put to use by homeowners and businesses and the sluggish economy.

Residual-fuel-oil demand for 1975 is projected to increase 2.8% after decreasing 4.6% during 1974. This will place residual consumption at an average of 2,740,000 b/d for 1975 or about 75,000 b/d over calculated 1974 levels. The shortage of natural gas also is exerting an upward force on residual consumption.

Other product categories—liquefied gases, petrochemical feedstocks, lubricants, asphalt, petroleum coke, etc—are expected to increase about 7.0% in 1975. This level of demand would be 3,540,000 b/d, up 70,000 b/d from the calculated consumption in 1974.

Exports are projected by the Journal to decrease by 10,000 b/d, a decline of 4.4% from 1974. This is expected to happen as some suppliers with long-term contracts for primary products allow their contracts to expire. Most of the exports in this category are prohibited in the U.S. because of environmental considerations. Coke accounts for over 50% of the exports from the U.S.

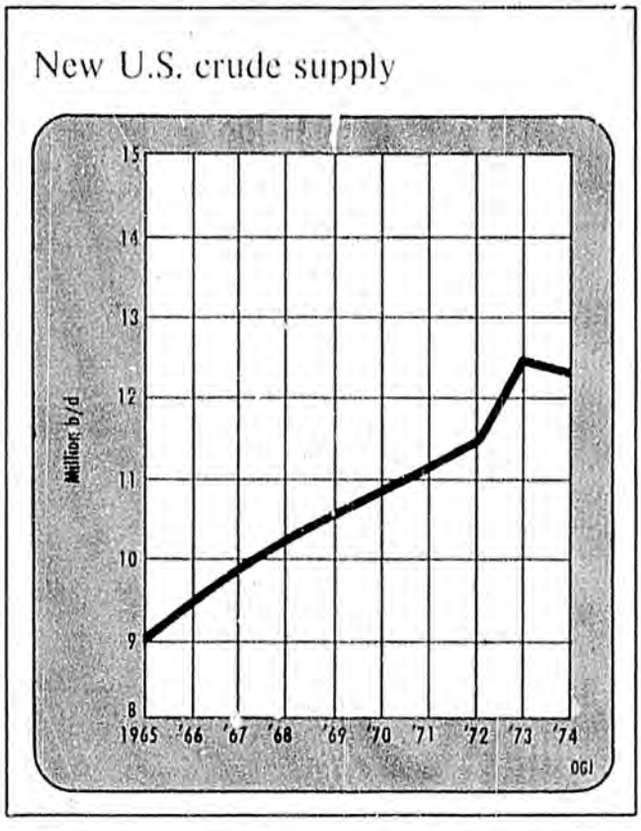
Lubricants are the other major segment of the exports.

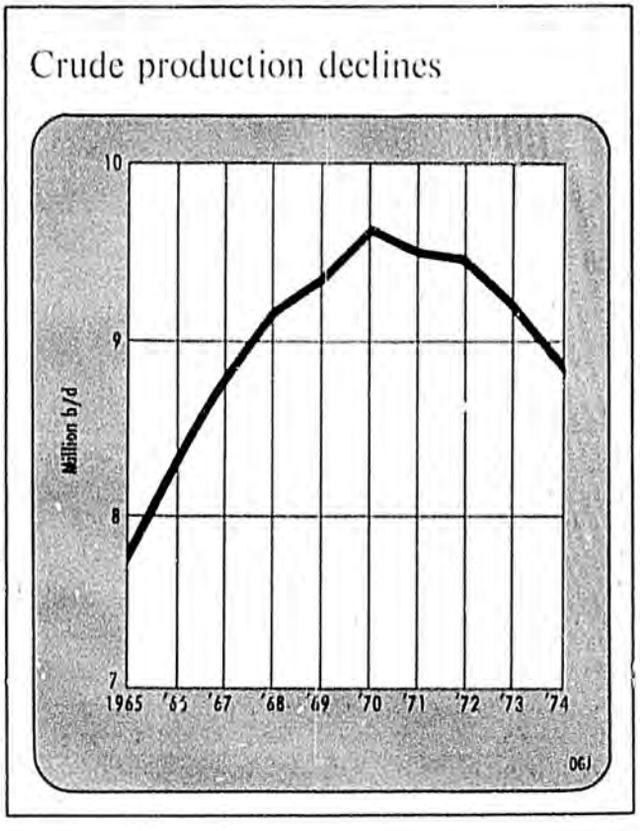
Rely on imports. The big supply question for 1975 is the same as it was in 1974—the level of imports.

The Journal forecast counts on the import level to reach an average of 6,675,000 b/d, including 3,800,000 b/d of crude and 2,875,000 b/d of refined products and unfinished petroleum. This import level will satisfy demand as well as allow for a small buildup in inventories.

Crude production in the U.S. is expected to continue its decline in 1975 but at a slower rate than in 1974. Production should average 8,550,000 b/d in 1975. This level of production is 2.8% less than in 1974. The decline between 1974 and 1973 amounted to 4.2%.

The lag time between increased drilling activities and the corresponding increase in crude-production rates has been longer than most industry analysts foresaw. It appears that the slowing decline rate is significant and





Journal forecast: supply and demand

(Thousands of Barrels Daily)

	Forecast 1975	Preliminary 1974	% Change	1973	1972	1971
Domestic Demand						
Motor Gasoline	6,625	6,560	+1.0	6,673	6,376	6,014
Dist. 1-4	5,665	5,610	+1.0	5,702	5,439	5,145
Dist. 5	960	950	+1.0	971	937	869
Naphtha Jet	205	200	+2.5	217	242	249
Dist. 1-4	143	140	+2.1	152	156	164
Dist. 5	62	60	+3.3	65	86	85
Kerosine Jet	785	780	+0.6	833	803	743
Dist. 1-4	560	560		594	568	524
Dist. 5	225	220	+2.3	239	235	219
Other Kerosine	165	160	+3.1	216	234	249
Dist. 1-4	155	152	+2.0	212	230	244
Dist. 5	10	8	+25.0	4	4	5
Distillate	2,975	2,900	+2.6	3,080	2,913	2,694
Dist. 1-4	2,705	2,635	+2.7	2,770	2,641	2,428
Dist. 5	270	265	+1.9	310	272	266
Residual	2,740	2,665	+2.8	2,794	2,529	2,232
Dist. 1-4	2,320	2,255	+2.9	2,373	2,208	1,936
Dist. 5	420	410	+2.4	421	321	296
LP-Gas and LRG	1,400	1,370	+2.2	1,121	1,118	1,011
Dist. 1-4	1,338	1,310	+2.1	1,064	1,057	949
Dist. 5	62	60	+3.3	57	61	62
Misc. Product Demand	2,140	2,100	+1.9	2,333	2,164	2,033
Dist. 1-4	1,820	1,785	+2.0	2,078	1,918	1,796
Dist. 5	320	315	+1.6	255	246	237
Total Domestic Demand	17,035	16,735	+1.8	17,267	16,379	15,225
Dist. 1-4	14,706	14,447	+1.8	14,945	14,217	13,186
Dist. 5	2,329	2,288	+1.8	2,322	2,162	2,039
Exports	215	225	−4.4	229	223	224
Dist. 1-4	120	130	−7.7	129	135	134
Dist. 5	95	95	0	100	88	90
Total Demand	17,250	16,960	+1.7	17,496	16,602	15,449
Dist. 1-4	14,826	14,577	+1.7	15,074	14,352	13,320
Dist. 5	2,424	2,383	+1.7	2,422	2,250	2,129
Supply						
Crude and Lease Cond.	8,550	8,800	−2.8	9,187	9,441	9,463
Dist. 1-4	7,485	7,723	−3.1	8,065	8,289	8,270
Dist. 5	1,065	1,077	−1.1	1,122	1,152	1,193
NGL and Other HC	1,670	1,695	−1.5	1,738	1,744	1,692
Dist 1-4	1,637	1,661	−1.4	1,702	1,703	1,644
Dist. 5	33	34	−2.9	36	41	48
Imports Crude	3,800	3,500	+8.6	3,244	2,216	1,681
Dist. 1-4	2,964	2,730	+8.6	2,434	1,553	1,169
Dist. 5	836	770	+8.6	810	663	512
Products & Unfinished	2,870	2,775	+3.6	2,957	2,525	2,245
Dist. 1-4	2,670	2,575	+3.7	2,775	2,368	2,095
Dist. 5	205	200	+2.5	182	157	150
Processing Gain, Losses, Etc.	495	475	+4.2	505	444	439
Dist. 1-4	410	390	+5.1	409	357	353
Dist. 5	85	85	0	96	87	86
Total Supply	17,390	17,245	+0.8	17,631	16,370	15,520
Dist. 1-4	15,166	15,079	+0.6	15,385	14,270	13,531
Dist. 5	2,224	2,166	+2.7	2,246	2,100	1,989
Stock Change	140	285	−50.9	135	− 232	71
Dist. 1-4	340	502	−32.3	176	− 82	211
Dist. 5	− 200	− 217	−7.8	− 41	− 150	− 140
Crude Runs to Stills	12,250	12,150	+0.8	12,431	11,730	11,199
Dist. 1-4	10,400	10,306	+0.9	10,456	9,872	9,457
Dist. 5	1,850	1,844	+0.3	1,975	1,858	1,742

that 1976 may well see a stable if not increasing U.S. crude-production rate.

Natural-gas liquids continued a decline pattern similar to crude oil. Natural-gas liquids is projected to equal 1,670,000 b/d in 1975. This decline is 25,000 b/d from 1974. Once again the production is still declining but at a slower rate than in the past. A decline rate of 1.5% as compared with a reduction of 2.5% between 1973 and 1974.

Including a processing gain of 495,000 b/d, up 4.2% from the expected level of 1974, total supply should come to 17,390,000 b/d in 1975. This would allow for a small stock buildup over the course of the year. Crude runs to stills are projected to increase by about a percentage point and average 12,250,000 b/d during 1975.

A look back. The U.S. petroleum industry closed out 1974 with some cause for optimism in a period checked with pessimism. The disastrous shortages planned for by many turned into rather small losses viewed on an annual basis.

A quick rundown (for details see following tables) shows:

- Crude production declined 4.2% to average 8,800,000 b/d compared with 1973's average of 9,187,000 b/d. Two of the five districts were gainers. District 1 netted an increase of 10.1% or 11,000 b/d. District 4 showed a gain of 23,000 b/d, a 3.4% gain. Colorado, Montana, and Utah increased production with Wyoming holding about the same. The three biggest producers maintained their rank—Texas, Louisiana, and California.
- Marketed production of natural gas slid downward to average 61.1 billion cfd, a 1.5% decrease. Exports also declined to a level of 2.7 billion cfd.
- Refiners averaged running 12,150,000 b/d of crude compared with 12,431,000 b/d in 1974. Their plants operated at 82.1% of capacity as reported by the American Petroleum Institute.
- Crude imports into the U.S. set record levels during 1974. Total preliminary crude imports equal 3,500,000 b/d. Two of the traditionally large importers cut back their exports of crude to the U.S. substantially. Canada reduced crude exports to the U.S. by 136,000 b/d, a cut of about 14%. Calculated figures for Venezuela show a reduction of 43,000 b/d or 13%. The biggest increases in U.S. crude imports came from Nigeria and Iran. These countries showed gains of 207,000 b/d and 319,000 b/d respectively.
- Refined product imports declined during 1974. Gasoline nearly doubled in volume imported. The reductions occurred in the distillate and residual categories. Total product imports fell by 182,000 b/d, a reduction of about 6%.
- Rotary-rig activity was outstanding during 1974. The U.S. level of activity reached proportions not seen since 1963. California, Kansas, New Mexico, Oklahoma, Texas, and Wyoming all showed large gains in the average rotary-rig activity. Canadian rig activity declined during the year. The average rig activity fell by 25 rigs from the year previous. A decrease of 14% for the year.
- Refined product, natural-gas liquid, and crude stocks all increased during 1974. Gasoline stocks increased by 8,963,000 bbl or 4.2% during the

year. Residual inventories added 8,300,000 bbl and crude stocks increased 15.5% to a total of 267,100,000 bbl, up 24,622,000 bbl from ending inventory level of 1973.

• The results of the continuing U.S. inflation and the rise in world oil prices are clearly reflected in the wholesale price index which jumped by about 23 points during the year. The crude-oil and refined-products price indices increased by 41 points and 91 points, respectively.

Gain in drilling. Drillers completed an estimated 33,373 wells including 9,335 wildcats, during 1974, drilling 158,401,000 ft of hole. These are preliminary estimates which if proved correct represent a 20.9% gain in completions and a 25% increase in wildcats over 1973.

A Journal survey, meanwhile, indicates oil operators plan to drill an estimated 35,503 wells this year, including 10,483 wildcats, and 171,774,000 ft of hole. This would be a 6.4% gain for total wells, a 12.3% gain for wildcats, and an 8.4% gain in footage drilled, all above the very good 1974 achievement.

The 35,503-well estimate for 1975 drilling is believed approaching capacity of the domestic drilling industry. It will require extremely efficient use of existing equipment if the goal is achieved.

Over the next few years, availability of rigs is expected to be the limiting factor in how fast drilling can be expanded. The 1974 activity and the forecast work in 1975 both are above previous estimates of industry capability.

Active rotary rigs in 1974 averaged 1,471 with the highest number of rigs at work in any one week totaling 1,664. Some observers believe that the industry must average over 1,600 rigs at work this year to achieve the forecast goal.

Texas, as usual, was by far the leader in new drilling last year with 10,309 well completions including 3,435 wildcats. The surprise, however, was the strong showing in some other states. Kansas, for instance, was in second place with 3,066 completions and 986 wildcats, ahead of Oklahoma with 3,063 completions and 391 wildcats and Louisiana with 3,001 completions and 834 wildcats.

Other leading drilling states included California with 1,993 completions and 233 wildcats; New Mexico with 1,138 completions and 218 wildcats; Ohio with 1,785 completions and 148 wildcats; Pennsylvania with 1,327 completions and 105 wildcats; and Wyoming with 1,072 completions and 453 wildcats.

Drilling plans for 1975 indicate nearly all the leading states will see even increased activity. Texas, for example, expects a program of 10,952 wells, Louisiana 3,387, Kansas 3,117, California 2,199, New Mexico 1,237, Oklahoma 3,147, Wyoming 1,147, and Pennsylvania 1,281.

All in all, the drilling segment of the oil industry should experience a busy time in the months ahead. This doesn't mean all is rosy. Operators must worry about enough rigs, tubular goods, and drilling sites and whether Congress will knock out the props by repealing percentage depletion, changing the expensing of intangible costs, or impose more severe price controls on crude oil.

Role of imports. Despite Project Independence, the nation's dependency on petroleum from abroad has remained roughly unchanged from 1973's figure of about 40% of U.S. oil demand. But the so-called security of imports has declined slightly.

A special study of imports during June-October period last year made by Petroleum Industry Research Foundation Inc. (Pirinc) noted that imports from the Arab nations have increased 3.5% and now account for 8.2% of total U.S. oil demand. This compares with 7.7% a year earlier. Imports from non-Arab Eastern Hemisphere sources, particularly Iran and Nigeria, have increased much more and now account for one-third of total U.S. oil imports compared with one-fourth a year ago.

This dependency on Eastern Hemisphere oil actually is greater when imports of products are examined. Export refineries in Canada, the Caribbean, and Europe use a certain amount of Arab crude oil to make the products which they ship to America. Pirinc estimated that the total direct and indirect dependency on Arab oil is equal to nearly 11% of total U.S. oil demand.

These increases in dependency on Eastern Hemisphere oil have been made at the expense of so-called more secure Western Hemisphere petroleum. Imports of crude and products from Canada, Venezuela, and the Caribbean have all declined significantly both in volume and as a percentage of total imports. Historically these imports have been considered politically and strategically more secure than those from the Eastern Hemisphere. This means that the reduction in U.S. oil demand and imports since the embargo has not made the nation less vulnerable to foreign oil interruptions than a year ago.

The Pirinc study also noted that imports of products are declining more than crude. All refined products during the study period showed declining imports from a year earlier with the principal decline occurring in residual, which dropped 18%.

Part of this decline was due to stepped-up production at U.S. refineries of residual fuel which may have increased by as much as 20%. An equally important reason was the declining fuel-oil demand by U.S. electric utilities due in part to a leveling off in power generation this year. Coal and nuclear's share in power generation increased at the expense of oil. As a result, residual-fuel-oil demand by utilities declined significantly.

Imports of gasoline and light fuel oil declined from all sources for two principal reasons: (1) foreign prices of these products have been higher than domestic prices in 1974, and (2) there now is sufficient domestic refining capacity to meet virtually all gasoline demand and a large share of distillate requirements. This is due to a combination of decreased demand and an increase in domestic refining capacity.

Pirinc concluded, however, that any significant volumetric decline in oil imports in 1975 is most unlikely to be achieved without forceful mandatory restrictions or large additional excise taxes.

The current comfortable supply position thus should not lead to complacency. Shell economists, for instance, warn in a special report that if energy-saving measures are abandoned in the face of apparent adequate supply, another crisis could easily be in the making. The report urges the adoption of national policies to cushion the effect of short-term fluctuations in supply including a mechanism for consuming countries to share shortages, greater reserve storage capacity, and better political relations with oil-producing countries. In the meantime, the nation must start moving on long-term solutions to energy supply and demand.

U.S. production of crude oil and lease condensate

(Thousands of barrels daily)

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	Total† 1859-1973
District I:												
Fla., N.Y., Pa., W.Va.	120	109	66	36	31	29	28	31	32	32	30	2,090,420
Total District 1	120	109	66	36	31	29	28	31	32	32	30	2,090,420
District II:												
Illinois	77	82	96	107	120	139	154	162	169	175	192	3,011,833
Indiana	13	14	17	18	21	21	24	28	31	30	31	447,266
Kansas	173	181	202	215	232	243	258	272	284	287	290	4,629,330
Kentucky	23	24	26	29	32	35	38	43	49	53	54	623,633
Michigan	48	40	36	33	32	33	35	37	39	40	43	639,653
Nebraska	18	20	24	28	31	33	36	37	38	47	52	350,455
North Dakota	54	55	56	59	60	62	68	69	74	72	70	436,377
Ohio	25	24	22	23	27	30	30	27	30	35	43	800,932
Oklahoma	485	523	567	584	613	616	611	632	615	557	555	11,191,736
Other	2	2	2	2	1	2	3	1	1	1	...	9,348
Total District II	918	965	1,048	1,098	1,169	1,214	1,257	1,308	1,330	1,297	1,330	22,140,563
District III:												
Alabama	35	33	27	21	20	21	21	20	22	22	23	1,853
Arkansas	45	49	51	50	49	49	53	58	65	71	73	1,397,833
Louisiana	2,050	2,256	2,455	2,562	2,485	2,314	2,233	2,122	1,848	1,630	1,502	15,660,381
Gulf Coast	1,990	2,146	2,334	2,438	2,355	2,181	2,094	1,971	1,699	1,478	1,356	‡
Rest of state	60	110	121	124	130	133	139	151	149	152	146	‡
Mississippi	140	154	167	176	178	176	160	157	151	154	155	1,514,217
New Mexico	265	276	302	324	351	354	351	346	340	327	311	3,173,954
Texas	3,450	3,546	3,565	3,351	3,424	3,156	3,097	3,067	2,898	2,742	2,704	39,447,383
Gulf Coast	790	793	716	654	694	631	609	591	539	515	524	‡
West Texas	1,795	1,829	1,769	1,646	1,634	1,497	1,453	1,427	1,352	1,262	1,212	‡
East Texas field	190	207	211	186	199	159	145	142	124	111	119	‡
Rest of state	675	717	869	865	897	869	890	907	883	854	849	‡
Total District III	5,985	6,314	6,567	6,484	6,507	6,070	5,915	5,770	5,324	4,946	4,768	61,345,621
District IV:												
Colorado	102	100	90	75	68	78	87	93	92	92	95	1,067,231
Montana	95	94	93	95	104	120	132	66	97	90	84	864,166
Utah	108	87	71	65	64	64	64	68	66	69	78	494,284
Wyoming	395	396	386	405	439	424	394	373	368	379	379	3,939,117
Total District IV	700	677	640	640	675	686	677	628	623	630	636	6,364,798
District V:												
Alaska	195	199	202	218	229	202	181	80	39	31	30	626,197
Arizona	2	2	3	3	5	7	9	8				15,922
California	880	921	951	982	1,020	1,028	1,026	984	946	867	820	16,784,056
Coastal region	208	216	212	237	222	180	176	191	190	182	178	‡
Los Angeles region	345	363	389	392	430	465	453	380	340	296	279	‡
San Joaquin Valley	327	342	350	353	368	383	397	413	416	389	363	‡
Nevada						1	1	1	1	1		2,949
Total District V	1,077	1,122	1,156	1,203	1,254	1,238	1,217	1,073	986	899	850	17,429,124
U.S. Total	8,800	9,187	9,477	9,461	9,636	9,237	9,094	8,810	8,295	7,804	7,614	109,370,526

*Preliminary †Thousands of barrels. ‡Not available.

Supply and demand of crude in the U.S.

(Thousands of barrels daily)

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962
SUPPLY:													
Crude imports	3,500	3,244	2,222	1,681	1,324	1,409	1,290	1,128	1,225	1,238	1,199	1,131	1,126
Crude production	8,800	9,187	9,477	9,463	9,637	9,238	9,095	8,810	8,295	7,804	7,614	7,542	7,332
Total new supply	12,300	12,431	11,699	11,144	10,961	10,647	10,385	9,938	9,520	9,042	8,813	8,673	8,458
DEMAND:													
Crude refinery runs	12,150	12,432	11,731	11,199	10,870	10,629	10,312	9,815	9,444	9,043	8,807	8,687	8,410
Crude transfers	17	19	12	17	14	14	14	12	12	13	12	11	14
Crude exports	3	2	1	1	14	4	5	73	4	3	4	5	5
Crude loss	12	13	13	12	11	11	11	9	10	10	10	10	9
Total crude demand	12,182	12,466	11,757	11,299	10,909	10,658	10,342	9,909	9,470	9,069	8,833	8,713	8,438
Stock change	+118	−35	−58	−46	+31	−11	+43	+29	+50	−27	−20	−40	+20

*Preliminary.

Rotary-rig activity by states

	Peak No.	Low No.	Average rig activity 1974	1973	1972	1971	1970	1969	1968	1967	1966	1965
Alabama	18	7	12	13	15	8	7	6	3	2	2	1
Alaska	14	3	9	5	5	5	14	28	20	21	13	6
Inland	9	2	6	4	4	5	12	18	3	5	5	3
Offshore	5	0	3	1	1	0	2	10	17	16	8	3
Arkansas	21	13	18	15	15	15	13	16	7	8	10	11
Arizona	2	1	1	2	1	1	0	2	1	3	1	1
California	85	53	72	51	46	46	52	78	87	83	79	89
Inland	82	51	70	49	45	40	42	61	65	67	70	83
Offshore	4	1	2	2	1	6	10	17	22	16	9	6
Colorado	60	33	46	42	35	30	25	23	17	16	16	19
Florida	12	6	7	9	19	11	4	1	1	2	2	4
Georgia	3	0	0	1	0	0	0	0	0	0	0	0
Idaho	1	0	0	1	0	0	0	0	0	0	0	0
Illinois	12	1	7	6	14	13	14	17	22	30	30	24
Indiana	3	0	1	0	1	1	1	1	2	3	5	5
Iowa	1	0	0	1	0	1	0	0	0	0	1	0
Kansas	55	35	44	28	24	29	30	38	35	41	55	70
Kentucky	4	0	2	1	2	2	1	2	5	9	13	12
Louisiana	224	186	203	205	214	194	204	230	233	235	256	270
North	34	23	29	23	19	16	12	19	19	20	23	30
Inland waters	68	49	58	55	54	50	57	57	64	66	72	72
South	65	39	49	56	59	54	56	69	59	58	63	73
Offshore	77	57	67	71	82	74	79	85	91	91	98	95
Maryland	0	0	0	0	1	0	0	1	1	0	4	2
Michigan	32	12	24	20	17	12	11	10	10	10	9	11
Mississippi	33	23	29	29	37	39	43	40	36	33	34	35
Missouri	2	0	0	1	0	0	0	0	0	0	1	0
Montana	37	10	24	19	20	17	17	31	34	22	24	26
Nebraska	11	3	7	5	6	5	6	10	5	5	8	10
Nevada	3	0	1	0	0	1	0	0	2	1	1	2
New Mexico	94	67	79	62	55	47	40	64	68	56	60	65
New York	10	2	7	1	0	1	0	0	1	1	1	1
North Carolina	1	0	0	0	0	0	0	0	0	0	0	0
North Dakota	19	5	12	10	7	9	9	12	13	11	12	12
Ohio	44	18	30	36	22	17	24	22	22	18	14	22
Oklahoma	173	121	146	115	90	90	98	120	106	101	141	163
Oregon	0	0	0	0	0	0	0	0	0	0	1	1
Pennsylvania	19	9	14	11	8	9	9	7	5	7	10	9
South Dakota	2	0	1	1	1	1	2	1	1	0	0	2
Tennessee	2	0	0	0	0	1	2	1	0	1	1	0
Texas	612	423	508	376	322	291	302	322	329	340	387	425
Gulf Coast	161	97	128	109	91	79	73	77	88	90	103	112
Offshore	29	17	21	9	6	5	6	10	6	7	8	5
North	90	45	67	22	16	15	17	25	25	28	31	34
Panhandle	44	24	35	23	22	16	19	19	20	21	23	25
East	68	24	45	30	26	23	25	37	34	36	38	40
West Central	81	55	62	82	71	76	77	74	67	67	82	102
West	172	135	150	101	90	77	85	80	89	91	102	107
Utah	50	33	42	38	34	17	12	12	12	15	14	14
Virginia	3	0	2	1	0	1	1	0	0	0	0	1
Washington	0	0	0	0	0	0	0	0	0	1	1	0
West Virginia	30	1	16	20	16	17	16	18	16	15	19	24
Wyoming	140	87	107	70	60	45	71	81	56	44	48	50
Total U.S.	**1,664**	**1,350**	**1,471**	**1,194**	**1,087**	**976**	**1,028**	**1,194**	**1,150**	**1,134**	**1,273**	**1,387**
Canada West	268	57	151	175	148	120	131	149	150	144	156	163
Canada East	6	1	3	4	4	4	3	2	1	1	1	2
Grand Total	1,820	1,419	1,625	1,373	1,239	1,100	1,162	1,345	1,301	1,279	1,430	1,552

Source: Hughes Tool Co. Note: Peak and low figures may not add to totals.

Drillers sank more wells than

Well forecast for 1975

State	1974 estimate: Total wells 1974	1974 estimate: Total wildcats 1974	1974 estimate: Total footage (1,000 ft)	1975 forecast: Total wells 1975	1975 forecast: Wildcat wells 1975	1975 forecast: Field wells 1975	1975 forecast: Total footage 1975 (1,000 ft)	Change from 1974 Total wells
Alabama	95	54	880	124	68	56	1,119	+ 29
Alaska	32	10	224	119	47	72	834	+ 87
Arizona	11	5	73	8	8	0	53	− 3
Arkansas	300	85	1,596	306	87	219	1,613	+ 6
California	1,993	233	5,115	2,199	288	1,911	5,650	+ 206
Onshore	1,923	227	4,911	2,117	281	1,836	5,428	+ 194
Offshore	70	6	204	82	7	75	222	+ 12
Colorado	823	344	4,982	901	389	512	5,425	+ 78
Florida	48	36	583	96	75	21	1,181	+ 48
Georgia	5	5	30	0	0	0	0	− 5
Idaho	2	2	9	0	0	0	0	− 2
Illinois	740	204	1,826	773	211	562	1,932	+ 33
Indiana	403	176	634	407	191	216	641	+ 4
Iowa	2	2	3	0	0	0	0	− 2
Kansas	3,066	986	8,953	3,117	1,017	2,100	9,102	+ 51
Kentucky	734	201	1,164	766	206	560	1,215	+ 32
Louisiana	3,001	834	22,453	3,387	1,095	2,292	25,560	+ 386
North	1,217	235	4,514	1,326	241	1,085	4,918	+ 109
South	1,091	402	11,357	1,168	467	701	12,159	+ 77
Offshore	693	197	6,582	893	387	506	8,483	+ 200
Maryland	2	2	13	0	0	0	0	− 2
Michigan	390	235	1,932	526	315	211	2,605	+ 136
Mississippi	463	291	3,802	534	341	193	4,386	+ 71
Missouri	55	22	69	24	16	8	30	− 31
Montana	648	368	2,026	691	375	316	2,218	+ 43
Nebraska	228	161	1,175	262	234	28	1,352	+ 34
Nevada	2	2	18	4	4	0	36	+ 2
New Mexico	1,138	218	6,228	1,237	248	989	6,831	+ 99
East	771	181	4,860	862	176	686	5,433	+ 91
West	367	37	1,368	375	72	303	1,398	+ 8
New York	311	0	440	327	14	313	463	+ 16
North Carolina	10	10	38	0	0	0	0	− 10
North Dakota	134	73	1,043	198	136	62	1,542	+ 64
Ohio	1,785	148	7,418	1,765	152	1,613	7,335	− 20
Oklahoma	3,063	391	16,837	3,147	447	2,700	17,299	+ 84
Pennsylvania	1,327	105	2,826	1,281	117	1,164	2,728	− 46
South Dakota	10	10	61	17	12	5	102	+ 7
Tennessee	110	75	176	112	77	35	178	+ 2
Texas	10,309	3,435	54,175	10,952	3,667	7,285	58,007	+ 643
District 1	616	242	2,308	593	201	392	2,228	− 23
District 2	741	450	4,375	866	499	367	5,113	+ 125
District 3	956	467	6,110	876	411	465	5,782	− 80
District 4	989	560	6,409	1,024	572	452	6,635	+ 35
District 5	141	80	773	147	86	61	785	+ 6
District 6	315	123	2,146	386	142	244	2,598	+ 71
District 7-B	1,313	465	4,287	1,390	482	908	4,565	+ 77
District 7-C	1,096	206	6,263	1,174	220	954	6,435	+ 78
District 8	1,439	167	8,747	1,498	212	1,286	9,108	+ 59
District 8-A	938	144	4,951	1,140	247	893	5,880	+ 202
District 9	1,103	289	3,327	1,023	296	727	3,119	− 80
District 10	502	98	3,174	520	112	408	3,167	+ 18
Offshore	160	144	1,305	315	187	128	2,592	+ 155
Utah	187	55	1,532	212	61	151	1,796	+ 25
Virginia	52	2	249	48	6	42	229	− 4
West Virginia	822	102	2,400	816	97	719	2,375	− 6
Wyoming	1,072	453	7,418	1,147	487	660	7,937	+ 75
Total U.S.	33,373	9,335	158,401	35,503	10,488	25,015	171,774	+2,130
Canada	4,552	1,270	15,630	3,881	727	3,154	12,996	− 671
West	4,290	1,247	15,065	3,618	725	2,893	12,594	− 672
Alberta	3,735	1,018	12,852	3,211	576	2,635	11,049	− 524
B.C.	163	74	865	129	28	101	685	− 34
Manitoba	47	16	154	45	20	25	147	− 2
North-Arctic	56	54	470	22	22	0	185	− 34
Saskatchewan	289	85	724	211	79	132	528	− 78
East	262	23	565	263	2	261	402	+ 1
Offshore	23	23	213	2	2	0	18	− 21
Ontario	239	...	352	261	0	261	384	+ 22

considered in early-year planning

PRELIMINARY estimates of 1974 total well completions in the U.S. show that the industry drilled more wells than it has previously planned earlier in the year.

Total well completions for the year 1974 are estimated at 33,373, compared to the 32,616 earlier reported. The year's total wells included 9,335 wildcat completions. Total footage drilled in 1974 is estimated at 158,401,000 ft. The complete listing of 1974 well completions in all categories will be published by the API and printed in The Journal later in the quarter.

The outlook is very good for 1975. The industry looks for 35,503 wells to be drilled. This is an increase of 6.4% over 1974. Total wildcat completions for 1975 will near 10,488, up 12.4% over 1974. Total footage drilled in 1975 should reach 171,774,000 ft, up 8.2% over last year. The 1975 well count will include 25,015 field-development wells.

A comprehensive Journal survey of operators throughout the oil kingdom covered nearly 9,500 wells for 1974. The top 20 companies in the nation plan to drill 7,488 wells this year compared to 6,823 in 1974. The accompanying table notes the data for past years. Notice that 1975 will be the biggest year listed on this table.

Nearly every state shows an increase in total drilling. Only Arizona, Georgia, Idaho, Iowa, Maryland, Ohio, Virginia, and West Virginia expect fewer well completions. Largest well increases are in California, up 206, Louisiana, up 386, and Texas, up 643.

The bright drilling picture in the U.S. for 1974 was bolstered by the high number of rotary rigs working in various areas. This rig count will increase the 1975 count also. Not since the 1950's has the Anadarko basin of western Oklahoma and the Texas Panhandle seen such a flurry of drilling action. Most of the wells are looking for and are finding new gas reserves. Some of this success is in and around older producing areas, while other good news is being made in wildcat operations in newer areas.

The impact of the price increase for gas and oil is very evident throughout Oklahoma well drilling slated to increase by 84 wells.

The top 20 company scores

State	Total wells					Wildcats	
	1975 Forecast	1974	1973	1972	1971	1974	Forecast 1975
Alabama	26	13	21	36	23	6	11
Alaska	92	21	21	15	31	6	32
Arizona	0	1	0	10	2	1	0
Arkansas	18	24	15	20	30	9	5
California	1,112	1,053	567	839	1,431	53	59
Onshore	1,070	1,011	562	827	1,388	53	53
Offshore	42	42	5	12	43	0	6
Colorado	314	312	54	228	225	33	43
Florida	13	6	36	64	32	6	13
Georgia	0	2	2	0	0	2	0
Idaho	0	2	4	0	0	2	0
Illinois	41	68	88	39	84	12	7
Indiana	16	28	1	1	1	0	0
Kansas	209	212	60	322	50	14	23
Kentucky	1	4	3	20	3	0	0
Louisiana	1,332	1,021	862	1,156	1,044	222	241
North	274	159	66	82	166	22	18
South	477	467	471	491	507	46	53
Offshore	581	395	305	583	371	154	170
Maryland	0	0	0	0	0	0	0
Michigan	305	207	117	135	51	134	186
Mississippi	49	37	39	75	128	16	26
Missouri	0	1	8	0	0	1	0
Montana	62	41	34	50	40	12	30
Nebraska	8	3	3	6	7	0	0
Nevada	4	2	0	1	2	1	4
New Mexico	307	304	154	223	171	32	42
East	231	205	139	164	132	28	27
West	76	99	15	59	39	4	15
New York	14	50	4	9	2	0	0
North Carolina	0	3	0	0	2	3	0
North Dakota	22	30	11	13	19	4	6
Ohio	2	2	5	8	5	0	0
Oklahoma	375	470	223	291	326	36	74
Oregon	0	0	1	0	0	0	0
Pennsylvania	114	224	41	14	11	15	20
South Dakota	6	2	1	1	0	2	3
Tennessee	2	1	0	0	0	1	2
Texas	2,506	2,146	1,547	2,138	1,686	216	321
District 1	201	147	104	113	24	10	10
District 2	64	57	66	54	52	11	14
District 3	175	119	175	262	263	8	27
District 4	139	155	250	264	295	8	20
District 5	18	18	6	6	9	9	8
District 6	60	34	33	43	51	3	9
District 7-B	27	14	32	22	23	1	5
District 7-C	193	229	93	52	52	20	20
District 8	666	661	389	635	526	35	58
District 8-A	597	317	230	361	294	6	25
District 9	60	186	35	238	32	3	6
District 10	108	114	110	54	40	12	17
Offshore	198	95	24	34	25	90	102
Utah	138	149	100	10	41	23	14
Virginia	2	1	0	0	0	1	2
Washington	0	0	0	3	0	0	0
West Virginia	54	83	22	35	28	12	12
Wyoming	344	300	112	330	223	36	71
Total U.S.	7,488	6,823	4,156	6,203	5,696	911	1,247

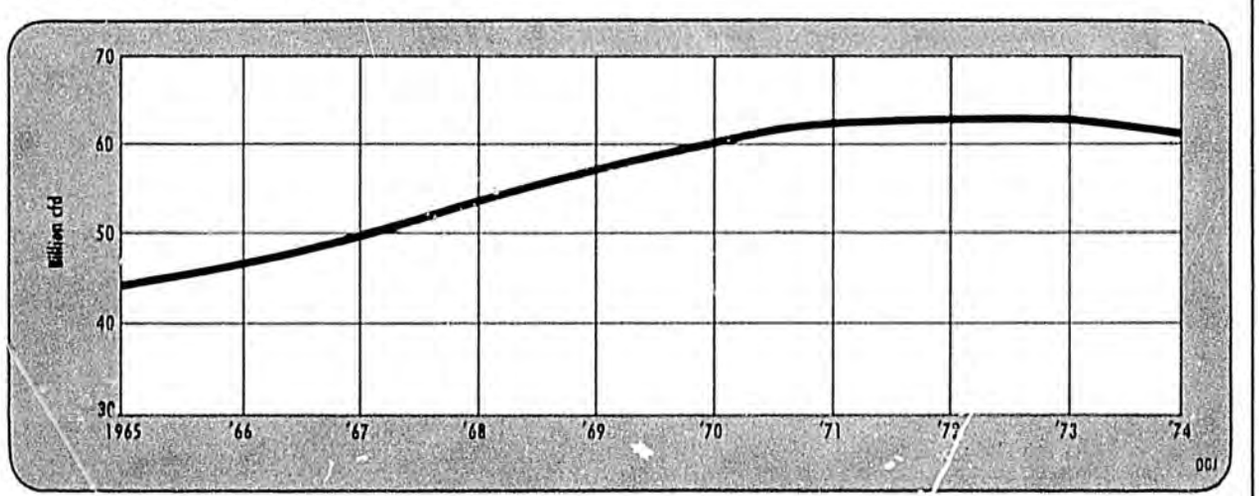
Marketed production of natural gas

(Million cubic feet per day)

	1974*	Actual 1973	1972	1971	1970	1969	1968	1967	1966	1965
Alaska	390	359	344	333	306	139	47	40	29	20
Arkansas	340	432	456	473	497	464	428	319	296	227
California	1,200	1,231	1,335	1,678	1,778	1,857	1,953	1,866	1,965	1,809
Colorado	370	377	320	297	290	325	332	320	326	346
Kansas	2,420	2,447	2,436	2,425	2,466	2,420	2,283	2,389	2,322	2,174
Louisiana	21,750	22,582	21,843	22,142	21,338	19,802	17,530	15,664	13,967	12,238
Michigan	110	122	94	70	106	99	111	92	105	95
Mississippi	225	273	285	325	345	360	369	382	381	457
Montana	150	154	92	90	117	113	53	71	99	77
Nebraska	10	11	10	10	16	19	22	23	27	29
New Mexico	3,425	3,339	3,332	3,199	3,121	3,118	3,181	2,925	2,770	2,568
Oklahoma	4,850	4,852	4,950	4,614	4,370	4,175	3,800	3,871	3,318	3,619
Texas	23,525	23,326	23,720	23,427	22,898	21,516	20,479	19,697	19,165	18,181
Utah	135	117	108	116	117	128	126	134	144	196
W. Virginia	570	572	589	641	664	635	647	579	585	568
Others	1,650	1,854	1,817	1,785	1,628	1,538	1,431	1,412	1,396	1,340
TOTAL	61,120	62,048	61,731	61,625	60,057	56,708	52,792	49,784	46,895	43,944
Volume Change	<928>	317	106	1,568	3,349	3,916	3,008	2,889	2,951	1,467
Percent Change	<1.5>	0.5	0.2	2.6	5.9	7.4	6.0	6.2	6.7	3.5
Imports	2,650	2,830	2,793	2,562	2,249	1,986	1,781	1,545	1,285	1,252
Exports	250	211	214	219	191	140	256	225	155	65

*Preliminary.

Marketed gas output stays level



U.S. employment, earnings, and price indices

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
U.S. Employment (000's)										
All manufacturing	19,835	19,820	18,933	18,529	19,349	20,167	19,781	19,447	19,214	18,062
Petroleum refining	150	147	151	152	154	145	150	148	148	148
Petroleum and natural gas production	279	264	262	262	270	280	276	276	282	287
Average Hourly Earnings										
All manufacturing	$4.28	$4.07	$3.81	$3.56	$3.36	$3.19	$3.01	$2.83	$2.72	$2.61
Petroleum refining	5.92	5.54	5.25	4.82	4.49	4.23	3.94	3.77	3.60	3.47
Petroleum and natural gas production	4.98	4.47	3.97	3.75	3.57	3.43	3.22	3.03	2.87	2.74
Price Indices (1967 = 100)										
Wholesale price index	157.7	134.7	119.1	113.9	110.4	106.5	102.5	100.0	99.8	96.6
Crude oil price index	174.4	133.2	116.1	111.1	108.9	105.8	100.7	100.0	98.6	97.9
Refined products price index	220.3	128.7	108.9	106.8	101.1	99.6	98.1	100.0	97.4	93.8

*Preliminary

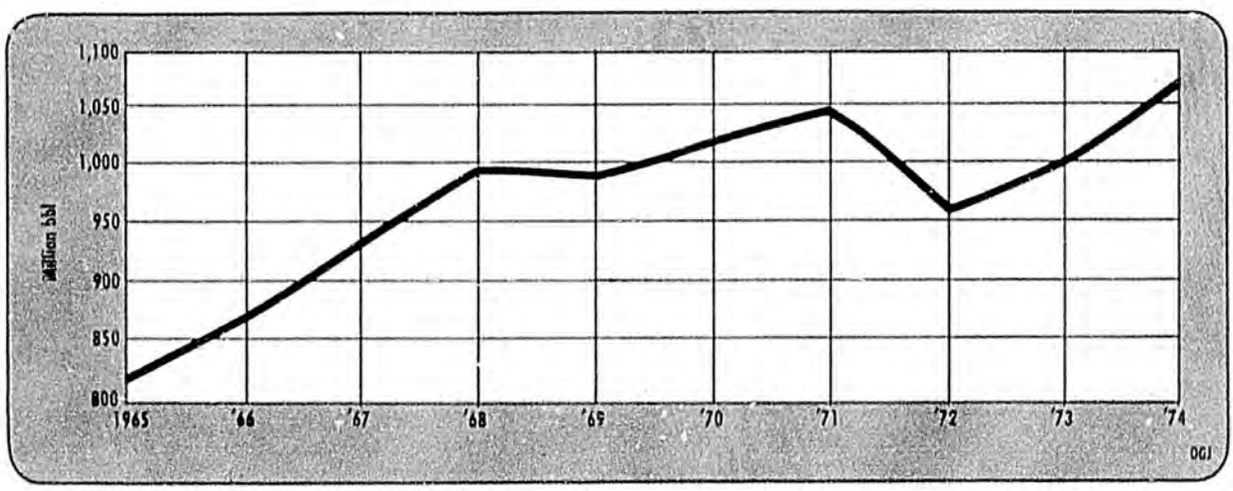
Source: U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings. U.S. Department of Commerce, U.S. Bureau of Mines.

Refinery runs by districts

(Thousands of barrels daily)

	% of capacity	1974*	% of total 1973	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
East Coast	80.7	1,246	10.7	1,327	1,161	1,181	1,147	1,252	1,176	1,145	1,143	1,089	1,106
Appalachian: Dist. 1	76.9	166	1.4	174	161	150	143	57	127	122	116	111	106
Total Dist. 1	80.2	1,412	12.1	1,501	1,322	1,331	1,290	1,309	1,303	1,267	1,259	1,200	1,212
Appalachian: Dist. 2	90.6	58	0.4	55	54	55	60	63	59	60	78	101	101
Ill., Ind., Ky.	83.6	2,152	18.2	2,267	2,134	2,054	1,995	1,868	1,830	1,778	1,731	1,632	1,579
Minn., Wis., Dak.	73.2	218	2.0	242	228	217	209	198	185	164	162	153	147
Okla., Kan., Mo.	88.8	920	7.4	921	904	904	899	884	885	847	818	759	744
Total Dist. 2	84.3	3,348	28.0	3,485	3,320	3,230	3,154	3,013	2,959	2,849	2,789	2,645	2,571
Texas:													
Inland	81.5	418	3.4	427	416	401	395	388	371	350	340	321	316
Gulf Coast	83.5	2,867	22.4	2,782	2,635	2,523	2,450	2,407	2,359	2,283	2,185	2,116	2,088
Louisiana Gulf	85.9	1,633	13.4	1,664	1,604	1,377	1,317	1,285	1,214	1,101	979	911	853
N. La.-Ark.	72.3	154	1.1	135	132	148	154	145	142	135	128	126	123
New Mexico	56.3	59	0.4	46	45	42	41	39	37	34	34	32	30
Total Dist. 3	83.4	5,131	40.7	5,054	4,832	4,491	4,357	4,264	4,123	3,903	3,666	3,506	3,410
Total Dist. 4	76.4	415	3.3	415	398	405	393	385	366	344	338	330	319
Total Dist. 5	77.8	1,844	15.9	1,976	1,858	1,742	1,676	1,658	1,567	1,452	1,392	1,362	1,295
Total U.S.	82.1	12,150	100.0	12,431	11,730	11,199	10,870	10,629	10,318	9,815	9,444	9,043	8,807

Total stocks head upward



Refined product, natural-gas-liquid, and crude stocks

(Thousands of barrels)

Refined product stocks	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
Gasoline	222,380	213,417	217,149	223,771	214,348	217,392	211,526	207,715	194,177	183,058
Motor	218,600	209,478	212,894	219,352	209,255	211,199	204,496	199,790	186,393	174,717
Aviation	3,780	3,939	4,255	4,419	5,093	6,193	7,030	7,925	7,784	8,341
Special naphtha	4,800	4,521	5,232	5,384	6,193	6,292	5,829	5,742	5,583	6,209
Kerosine	14,500	21,022	19,111	24,438	27,848	26,780	23,480	25,008	24,004	24,080
Distillate	202,400	196,461	154,319	190,622	195,271	171,714	173,158	159,674	154,096	155,407
Residual	61,780	53,480	55,216	59,681	53,994	58,395	65,359	65,597	61,196	56,214
Kerosine jet fuel	24,400	22,945	19,346	20,747	20,989	19,517	15,373	13,174	12,139	10,361
Naphtha jet fuel	5,660	5,599	6,147	6,990	6,621	8,556	8,904	9,023	7,235	8,388
LRG	7,900	7,719	7,781	7,361	5,645	5,050	4,373	14,925	14,336	13,665
Unfinished oils	109,960	99,154	94,761	100,574	98,989	97,819	93,399	90,201	89,535	88,609
Other refined prod.	51,220	52,298	49,279	51,203	43,152	43,125	46,725	48,340	43,350	44,197
Total product stocks	705,000	676,616	628,341	690,771	673,059	654,640	648,126	629,339	595,651	580,188
Nat.-gas-liquids stk.	98,000	94,106	79,238	93,528	68,435	60,256	77,253	62,969	40,423	35,867
Crude stocks	267,100	242,478	246,395	259,648	276,367	265,227	272,193	248,970	238,391	220,289
Total stocks	1,070,100	1,013,200	953,974	1,043,947	1,017,861	980,123	997,572	941,338	874,465	836,344

*Preliminary. †Includes LRG for chemical use previously reported in petrochemical feedstocks.

Crude imports by origin

(Thousands of barrels daily)

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
Bolivia	8	2	...	2	2	15.3	18.8	19.2	3.4	...
Chile	...	...	...	1	...	4.7	...	...	...	...
Colombia	...	2	5	9	20	42.6	32.7	32.5	39.5	41.7
Ecuador	60	47	...	...	...	...	...	...	...	...
Mexico	1	1	...	...	...	1.0	...	...	...	6.9
Trinidad	65	60	24	...	...	...	5.4	3.5	...	...
Venezuela	302	345	256	303	268	306.1	343.5	359.1	403.9	432.5
Latin America total	436	457	285	315	290	369.7	400.4	414.3	446.8	481.1
Algeria	203	120	87	13	6	1.0	5.3	4.0	3.8	8.9
Angola	50	48	16	4	...	...	...	...	...	...
Congo	4	...	...	...	...	...	...	...	...	...
Egypt	10	15	8	19	21	40.5	29.5	3.6	2.3	2.4
Gabon	30	...	...	...	...	...	...	...	...	...
Libya	5	133	110	53	47	133.9	113.6	41.9	69.0	41.6
Nigeria	655	448	244	95	48	49.2	8.6	3.9	11.3	14.5
Tunisia	5	18	7	...	...	...	...	...	...	...
Africa total	962	782	472	184	122	224.6	157.0	53.4	86.4	67.4
Kuwait	2	42	36	29	33	34.4	43.3	18.8	26.1	55.4
Saudi Arabia	338	462	174	115	17	34.7	51.8	81.3	125.4	132.2
Neutral Zone	...	...	...	...	23	43.5	29.4	11.0	19.3	26.7
Iran	535	216	136	106	33	41.9	57.8	65.2	84.5	78.5
Iraq	...	4	4	11	...	...	...	4.7	25.9	15.6
Qatar	7	7	3	...	...	0.5	...	...	0.5	11.9
Israel	...	1	...	...	...	...	...	...	...	...
United Arab Emirates	80	71	74	80	63	13.8	15.3	5.3	13.1	13.8
Middle East total	962	803	427	341	169	168.8	197.6	186.3	294.8	334.1
Canada	865	1,001	856	721	672	557.0	462.9	412.1	347.1	295.2
Far East	275	201	167	117	70	88.4	72.6	61.7	49.9	60.7
Total crude	3,500	3,244	2,207	1,678	1,323	1,408.5	1,290.5	1,127.8	1,225.0	1,238.5

*Preliminary

Imports of refined products

(Thousands of barrels daily)

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
Gasoline	195	132	68	59	67	62.2	59.0	42.7	48.1	37.1
Kerosine	3	2	1	1	4	2.6	0.5	0.1	0.6	0.3
Jet-fuel kerosine	160	167	162	150	125	110.7	85.8	73.8	51.4	36.9
Jet-fuel naphtha	30	36	33	30	19	14.1	19.4	14.9	34.4	45.2
Distillate	255	380	182	153	147	139.4	131.5	50.7	37.9	35.7
Residual	1,676	1,827	1,746	1,583	1,528	1,264.7	1,120.0	1,084.3	1,032.3	944.1
Unfinished oils	140	137	125	124	108	106.2	80.2	96.2	96.5	92.3
Other	1316	1276	1215	1145	97	57.5	52.9	45.9	46.9	37.7
Total U.S.	2,775	2,957	2,532	2,245	2,095	1,757.4	1,549.3	1,408.6	1,348.1	1,229.3

*Preliminary. †Includes plant condensate 1974, 103; 1973, 103; 1972, 86; 1971, 36.

Exports of refined products—and crude

(Thousands of barrels daily)

	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
Gasoline	4	5	2.6	4.5	3.8	6.7	5.7	18.8	15.9	17.6
Distillate	3	9	3.3	7.6	2.5	3.1	4.2	11.7	12.0	10.0
Residual	12	25	33.0	36.2	54.2	46.3	54.7	60.1	35.3	40.8
Lubricants	35	35	41.1	43.4	44.1	44.9	49.2	51.2	46.9	45.7
Coke	115	96	85.1	74.0	83.7	63.1	53.3	44.6	39.6	32.4
Asphalt	1	1	0.9	0.8	1.0	1.3	1.2	1.3	1.3	1.1
LP-gas	25	27	31.4	25.7	27.3	35.1	29.0	25.4	22.4	20.6
Other refined products	27	31	24.8	30.6	28.6	28.2	28.8	21.3	21.0	14.7
Crude	3	2	0.5	1.4	13.6	3.9	4.9	72.7	4.0	3.0
Total U.S.	225	231	222.7	224.2	258.8	232.6	231.0	307.1	198.4	185.9

*Preliminary

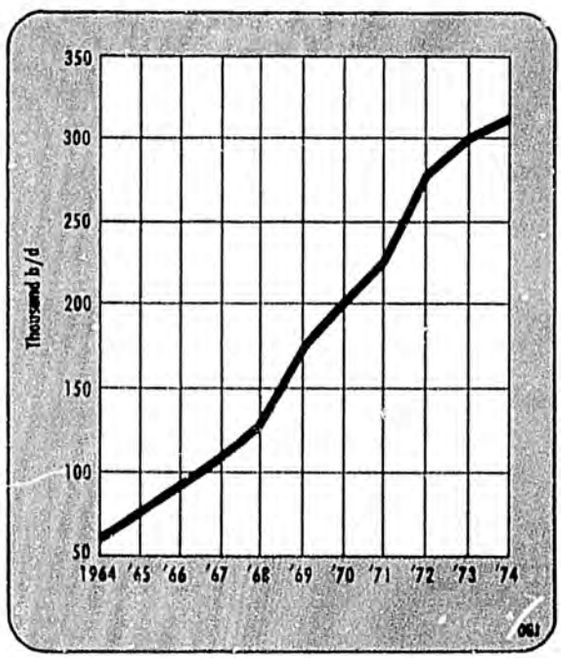
Production of natural-gas liquids, liquefied refinery gases

(Thousands of barrels daily)

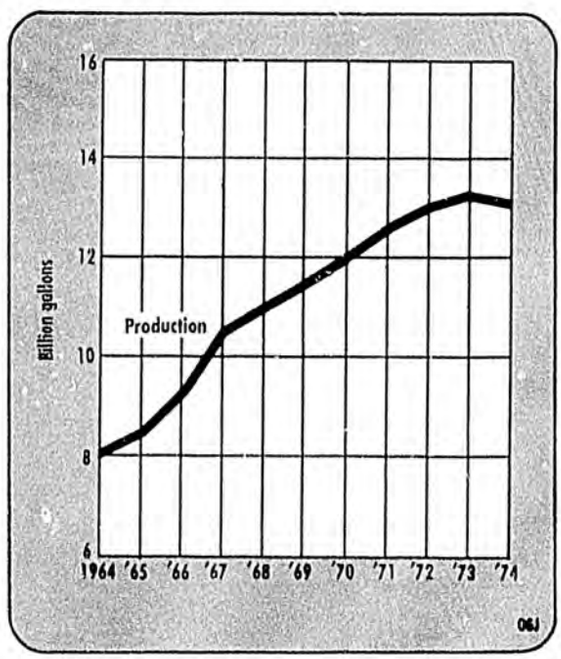
	1974*	1973	1972	1971	1970	1969	1968	1967	1966	1965
Ethane (from gas processing)	315	296	276	221	201	173	125	101	82	73
LP-gases:										
Propane	570	583	587	581	555	535	504	465	409	372
Butane	240	243	242	243	239	237	216	207	192	170
Butane-propane mix	10	10	10	11	16	16	34	42	36	24
Isobutane	90	92	92	88	84	74	81	80	73	67
Total LP-gases	910	928	931	923	894	862	835	794	710	633
Natural gasolines‡	400	443	427	453	452	423	404	382	356	356
Finished product and others§	60	70	81	96	113	117	140	132	136	119
Total natural-gas liquids	1,685	1,737	1,715	1,693	1,660	1,575	1,504	1,409	1,284	1,181
Liquefied refinery gas¶	348	350	332	331	319	313	323	306	291	293
Ethane (from refineries)	25	25	25	25	26	25	...	...	...	...
Total all products	2,058	2,112	2,072	2,049	2,005	1,913	1,827	1,715	1,575	1,474

‡Includes isopentane. §Includes plant condensate. ¶LRG figures, 1968 and earlier, include ethane. *Preliminary.

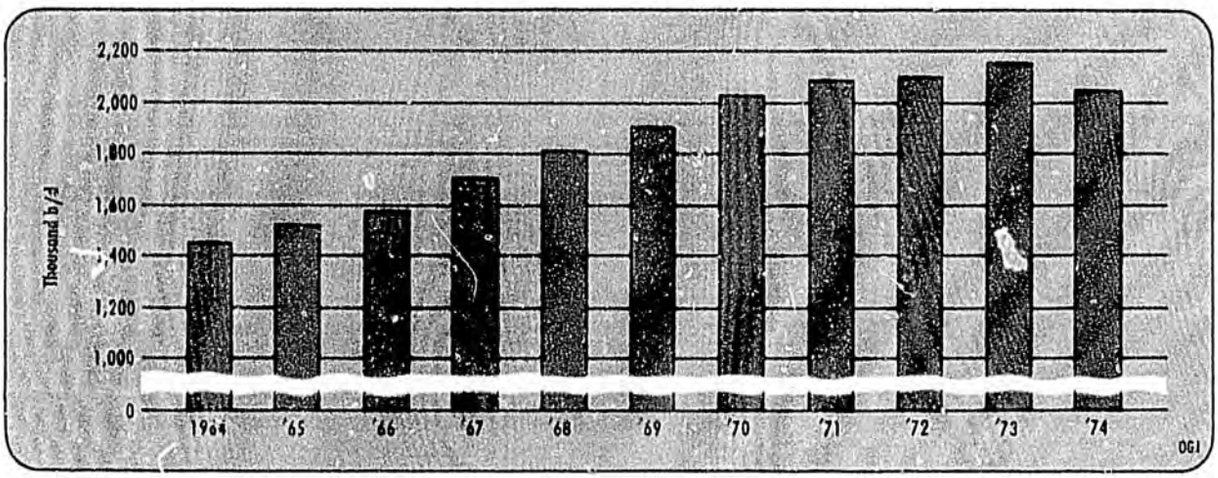
Ethane production rising

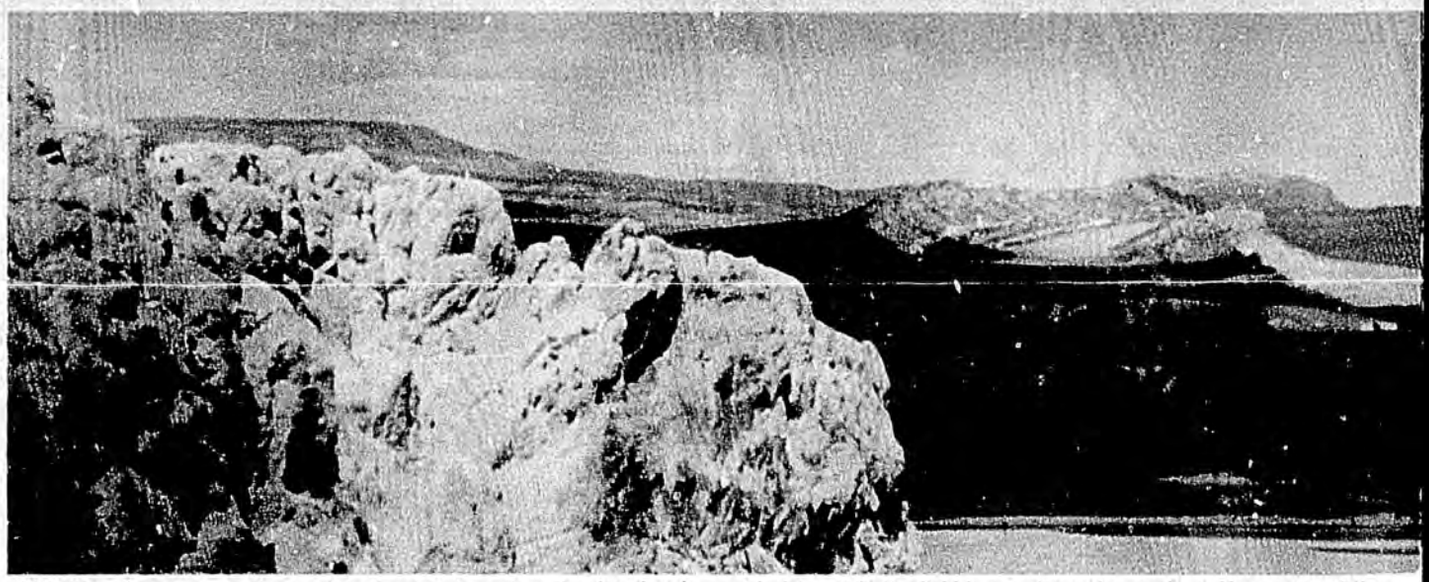


Total propane



Total production of NGL and LRG





WITH U.S. oil reserves on the rapid decline and demand on the rise, American geologists are in the field in ever increasing numbers. Many areas of the

Here are the big U.S. reserves

MOST of the crude-oil production in the U.S. comes from the nation's giant oil fields. These fields lie in many states with Texas having the most. California and Louisiana are also great storehouses of oil.

Alaska's Prudhoe Bay field, not yet on stream, is one of the largest with reserves at from 10 to 20 billion bbl or more.

Newest field to pass the 1 billion-bbl production mark in the country is Oklahoma's Sho-Vel-Tum.

To be included on this select list of U.S. oil fields, a pool must have an ultimate reserve of 100,000,000 bbl or more. Many of the fields on the listing are of 1920-30 vintage, the golden years of U.S. oil production. Some of these fields are still producing respectable amounts of oil each year.

Figures are in thousands of barrels. Only crude oil is figured into this reserve tabulation.

State Field	1,000 bbl 1974 prod.	1,000 bbl Cum. prod.	1,000 bbl Est. reserves	Est. No. wells
ALABAMA				
Citronelle	4,866	112,122	37,877	416
ALASKA				
Granite Point	4,233	56,131	34,321	25
McArthur River	39,191	253,387	136,748	52
Middle Ground Shoal	9,033	87,695	97,000	33
Prudhoe Bay	2,181	6,674	*	3
Swanson River	9,741	154,297	51,197	42
*Reserves estimates range from 10 to 20 billion bbl.				
APPALACHIAN				
Allegany	400	166,400	1,415	2,100
Bradford	2,600	658,695	19,774	17,300
ARKANSAS				
Magnolia	446	152,870	7,130	56
Schuler and East	613	105,736	4,264	108
Smackover	2,860	508,507	21,493	2,611
CALIFORNIA				
SAN JOAQUIN VALLEY				
Belridge South	8,544	194,803	77,900	2,667
Buena Vista	4,003	617,240	32,427	1,137
Coalinga	6,483	632,959	65,887	2,219
Coalinga Nose	3,504	432,473	30,959	74
Coles Levee North	1,218	140,848	12,766	116
Cuyama South	1,471	208,617	11,002	135
Cymric	2,919	131,500	24,405	746
Edison	1,206	113,339	12,500	527
Elk Hills	789	283,788	1,031,000	93
Fruitvale	1,016	101,817	11,400	349
Greeley	677	107,973	3,100	47
Kern Front	3,235	134,691	30,300	952
Kern River	26,765	635,757	850,000	4,531
Kettleman North Dome	643	452,104	3,756	129
Lost Hills	2,165	119,092	21,700	1,149
McKittrick	6,538	206,314	43,022	952
Midway Sunset	4,920	1,197,423	420,191	6,027
Mount Poso	2,527	168,357	20,620	498
Rio Bravo	170	113,139	1,731	48
COASTAL AREA				
Cat Canyon East and West	6,064	174,126	48,100	590
Dos Cuadras	14 990	102,488	73,247	123
Elwood	40	103,266	479	12
Orcutt	1,776	148,789	13,035	176
Rincon	3,319	123,549	20,209	312
San Ardo	12,877	274,160	103,800	913
Santa Ynez*				
Santa Maria Valley	3,558	159,363	26,612	214
South Mountain	1,640	130,617	16,142	441
Ventura	11,393	793,393	88,500	809
*1-3 billion bbl				
LOS ANGELES BASIN				
Beverly Hills	4,656	78,834	31,384	128
Brea Olinda	3,388	343,585	24,212	721
Coyote East	674	98,135	5,300	67
Coyote West	2,143	232,141	18,361	161
Dominguez	1,110	258,272	10,162	131
Huntington Beach	19,035	923,820	118,800	1,118
Inglewood	3,588	296,656	25,100	432
Long Beach	2,598	878,213	20,605	733
Montebello	558	184,500	5,120	178
Richfield	1,476	164,852	16,372	304

nation, once overlooked, will get a close investigation by earth scientists.

State Field	1974 prod.	1,000 bbl Cum. prod.	Est. reserves	Est. No. wells
Santa Fe Springs	753	600,697	11,218	242
Seal Beach	1,236	187,989	11,900	176
Torrance	2,747	182,332	17,591	364
Wilmington	65,382	1,681,810	697,935	2,335
COLORADO				
Rangely	20,284	513,615	158,379	369
FLORIDA				
Jay	33,166	75,383	237,617	85
ILLINOIS				
Clay City	2,713	307,937	17,063	2,138
Dale	389	100,403	4,597	495
Lawrence	812	362,201	4,600	2,631
Loudon	2,693	363,553	21,447	1,234
Main	870	223,974	2,100	3,101
New Harmony	1,380	155,355	14,645	980
Salem	2,783	355,773	14,227	1,228
KANSAS				
Bemis-Shutts	1,933	218,408	16,592	925
Chase-Silica	1,185	250,429	9,571	1,033
Eldorado	1,085	279,932	10,068	760
Hall-Gurney	1,821	127,244	12,756	1,175
Kraft-Prusa	866	117,824	7,176	590
Trapp	1,332	207,023	12,977	919
LOUISIANA, ONSHORE				
Avery Island	1,252	78,808	31,192	38
Bay DeChene	5,464	74,815	52,165	80
Bay St. Elaine	4,804	133,406	56,494	95
Bayou Sale	2,793	145,141	29,859	91
Black Bay West	7,068	91,538	58,462	145
Calliou Island	18,023	516,898	183,102	361
Cote Blanche Island	6,982	78,996	51,004	58
Delta Farms	916	110,053	9,947	41
Garden Island Bay	8,403	174,829	81,509	249
Golden Meadow	2,256	115,299	19,701	207
Grand Bay	3,934	152,533	52,467	161
Hackberry East	1,753	93,492	16,508	85
Hackberry West	2,944	117,896	22,104	158
Iowa	1,250	92,363	7,637	37
Jennings	280	111,689	3,311	84
Lafitte	5,727	212,532	45,463	244
Lake Barre	4,613	170,632	49,368	119
Lake Pelto	3,110	100,747	34,253	66
Lake Salvador	1,662	75,472	34,528	50
Lake Washington	6,488	198,674	76,326	144
Leeville	2,419	125,226	24,774	92
Paradis	4,057	103,213	26,131	75
Quarantine Bay	3,523	149,648	35,352	122
Romere Pass	2,218	80,347	24,653	37
Timbalier Bay	7,985	234,619	192,126	355
Venice	4,400	158,185	46,815	115
Vinton	2,994	122,886	17,114	177
Weeks Island	6,446	200,175	89,825	82
West Bay	6,679	176,543	63,457	198
W. Cote Blanche Bay	7,880	147,316	102,684	322
LOUISIANA, NORTH				
Caddo-Pine Island	3,348	313,014	26,986	7,370
Delhi	6,583	165,956	44,044	105
Haynesville (Ark., La.)	1,644	171,874	13,126	190
Homer	318	92,227	8,005	153
Rodessa, (La., Tex.)	351	175,474	4,526	145
LOUISIANA, OFFSHORE				
Bay Marchand Blk. 2 (Incl. onshore)	32,632	429,534	220,466	293
Eugene Island Blk. 126	4,429	89,207	35,803	53
Eugene Island Blk. 175	8,059	37,300	82,700	76
Eugene Island Blk. 276	4,687	46,769	118,231	60
Eugene Island Blk. 330	19,747	40,488	190,754	120
Grand Isle Blk. 16	13,156	211,052	138,948	92
Grand Isle Blk. 43	20,999	163,669	206,403	230
Grand Isle Blk. 47	3,972	65,069	34,931	71
Main Pass Blk. 35	2,155	79,768	20,232	77
Main Pass Blk. 41	10,396	144,519	135,481	100
Main Pass Blk. 69	7,973	191,010	68,990	132
Main Pass Blk. 306	5,573	31,942	118,058	134
Ship Shoal Blk. 204	5,732	27,140	77,860	58
Ship Shoal Blk. 207	6,223	44,419	130,581	53
Ship Shoal Blk. 208	10,559	92,506	132,494	86
South Marsh Island Blk. 73	5,020	40,848	64,152	37
South Pass Blk. 24 (Incl. onshore)	15,223	371,476	118,524	436
South Pass Blk. 27	11,568	258,926	126,074	342
South Pass Blk. 62	6,446	48,402	141,598	64
South Pass Blk. 65	10,105	46,193	143,807	62
Timbalier Bay Blk. 21	9,449	159,698	100,111	221
West Delta Blk. 30	22,586	312,462	137,538	216
West Delta Blk. 58	10,035	38,091	111,909	81
West Delta Blk. 73	7,654	128,219	146,781	96
MISSISSIPPI				
Baxterville	6,853	167,013	67,987	198
Heidelberg	5,039	115,229	34,771	263
Tinsley	2,543	196,017	23,983	184
MONTANA				
Bell Creek	9,345	68,819	47,126	228
Cut Bank	3,189	138,439	58,718	839
Pine	2,904	78,601	21,416	112
NEW MEXICO				
Caprock and East	484	92,810	7,190	614
Denton	1,561	124,675	15,325	188
Empire Abo	12,267	111,171	88,829	251
Eunice	4,079	126,215	31,776	806
Hobbs	4,722	221,451	33,232	412
Maljamar	5,854	104,105	60,895	819
Monument	387	210,412	29,588	114
Vacuum	13,152	274,986	125,014	972
NORTH DAKOTA				
Beaver Lodge	3,117	78,510	21,506	138
Tioga	953	56,253	29,480	215
OKLAHOMA				
Allen	2,540	126,921	13,079	1,500
Avant	360	106,602	2,398	645

State Field	1974 prod.	1,000 bbl Cum. prod.	Est. reserves	Est. No. wells
Bowlegs	1,665	158,492	6,508	175
Burbank	3,685	504,039	36,961	1,070
Cement	1,280	140,236	14,764	1,465
Cushing	2,965	463,182	21,818	1,700
Earlsboro	620	216,424	3,576	200
Edmond West	625	155,147	4,853	450
Eola-Robberson	3,720	107,977	32,023	485
Fitts	2,565	150,873	12,127	635
Glenn Pool	1,980	309,421	10,579	1,035
Golden Trend	8,135	402,011	97,989	1,200
Healdton	7,575	294,240	25,760	1,460
Hewitt	6,595	218,986	31,014	1,180
Little River	330	159,901	5,099	165
Oklahoma City	2,000	733,896	16,104	265
Postle	6,780	70,560	60,102	285
Seminole Greater	1,010	199,456	10,544	255
Sho-Vel-Tum	34,250	1,002,456	247,544	8,040
Sooner Trend	9,810	199,414	50,586	2,975
St. Louis	1,100	216,145	8,855	610
Tonkawa	275	135,212	1,788	205
TEXAS				
District 1				
Darst Creek	1,731	141,384	18,616	864
Luling-Branyon	1,345	147,162	12,838	1,403
District 2				
Greta All	4,476	116,951	43,049	191
Lake Pasture	4,439	65,537	44,112	212
Refugio All	314	95,160	4,840	67
Tom O'Connor	25,667	496,410	203,590	830
West Ranch	14,560	76,469	298,531	624
District 3				
Anahuac	8,949	248,759	106,241	234
Barbers Hill	497	124,529	10,471	100
Conroe	21,737	540,659	134,341	588
Dickinson-Gilliock	1,839	107,953	42	70
Goose Creek & East	760	130,749	9,251	221
Hastings E&W	27,912	502,991	172,009	439
High Island all	1,204	130,859	19,141	98
Hull-Merchant	1,521	193,909	11,091	385
Humble all	1,473	161,839	28,161	413
Magnet Withers all	3,025	80,931	44,069	286
Old Ocean	577	121,307	8,693	37
Oyster Bayou	5,520	94,837	51,667	35
Raccoon Bend	2,002	91,721	33,279	135
Sour Lake	925	117,386	7,614	334
Spindletop	171	153,741	3,259	72
Thompson all	16,319	370,071	129,929	305
Tomball	2,932	103,647	32,217	216
Webster	24,762	412,958	162,042	148
West Columbia	1,018	157,514	12,486	193
District 4				
Aqua Dulce-Stratton	2,122	138,000	32,000	393
Borregas all	2,072	108,293	26,707	502
Kelsey all	2,125	107,518	42,482	344
Plymouth	802	116,718	8,282	103
Seeligson all	2,453	263,203	61,797	433
Tijerina-Canales-Blucher	3,867	100,528	64,472	182
White Point East	909	99,681	10,319	154
District 5				
Mexia	129	107,353	2,647	97
Powell	92	130,063	937	37
Van and Van Shallow	16,264	419,384	130,616	427
District 6				
East Texas	72,312	4,241,715	1,758,285	13,360
Fairway	13,741	123,703	76,234	97
Hawkins	39,630	535,697	289,303	464
Neches	4,819	60,132	39,868	166
Quitman all	3,360	80,205	29,469	246
Talco	3,773	237,534	32,466	608
District 7-B				
Eastland County	241	120,482	12,410	294
Stephens County	1,877	169,155	18,002	558
District 7-C				
Big Lake	500	124,664	10,336	101
McCamey	794	124,089	5,911	884
Pegasus	2,568	113,008	26,992	181
District 8				
Andector	6,538	128,037	56,963	93
Block 31	6,267	143,861	46,139	120
Cowden North	14,954	276,820	48,180	1,042
Cowden South, Foster Johnson	16,714	299,613	100,387	1,310
Dollarhide	5,843	150,205	59,795	147
Dune	7,448	126,476	73,524	899
Emma & Triple N	1,993	96,694	18,306	259
Fullerton all	6,756	238,417	61,583	579
Goldsmith all	17,431	578,658	96,342	2,761
Hendrick	654	252,215	2,785	196
Howard Glasscock	6,902	310,153	64,847	1,892
Tatan East	4,197	86,412	38,588	873
Jordan	3,426	102,424	27,576	336
Kermit	934	112,374	17,626	469
Keystone	5,101	272,902	47,098	792
McElroy	11,820	309,518	50,482	1,970
Means all	6,644	146,249	63,751	376
Midland Farms all	6,396	176,039	48,961	337
Penwell	1,485	84,967	15,033	472
Sand Hills	5,092	189,105	55,895	1,069
Shafter Lake	2,325	72,033	27,967	436
TLX all	3,656	236,342	28,658	730
Waddell	2,788	81,605	28,395	425
Ward South	546	96,643	3,357	472
Ward Estes North	6,170	310,174	64,826	1,966
Yates	18,192	605,446	994,556	584
District 8-A				
Anton	7,443	78,354	31,646	177
Anton Irish	4,800	73,727	41,112	146
Cogdell Area	10,237	187,918	132,082	386
Diamond M	6,864	197,028	77,972	461
Kelly-Snyder	76,433	616,472	491,640	680
Levelland	12,391	232,508	92,492	1,617
Prentice	5,932	93,846	46,154	308
Russell all	2,697	112,041	22,959	224
Salt Creek	13,093	126,663	103,337	119
Seminole all	20,102	219,347	95,653	375
Slaughter	47,033	595,465	194,535	2,526
Spraberry Trend	18,190	379,633	130,367	3,669
Wasson all	86,784	703,095	629,453	2,117
Welch	6,160	88,531	61,469	391
District 9				
Archer County	2,640	238,970	20,411	4,119
Cooke County	2,106	94,713	18,642	1,981
KMA	2,051	167,376	17,624	399
Walnut Bend	4,711	101,145	38,855	278
Wichita County	4,787	504,852	41,675	6,875
Wilbarger County	1,976	159,717	21,112	1,782
Young County	1,563	142,237	19,666	2,483
District 10				
Panhandle	12,347	1,283,585	131,415	10,268
UTAH				
Greater Altamont	21,898	46,197	228,435	223
Greater Aneth	7,927	259,554	55,558	403
Greater Red Wash	3,364	90,433	46,541	215
WYOMING				
Elk Basin (Wyo.-Mont.)	8,887	448,442	69,759	255
Garland	3,441	112,260	25,863	207
Grass Creek	2,764	140,295	24,605	248
Hamilton Dome	4,454	218,253	35,527	246
Hilight	7,358	48,299	85,552	165
Lance Creek	348	104,632	2,359	44
Lost Soldier	3,425	141,618	23,659	62
Oregon Basin	11,354	240,315	79,651	321
Salt Creek	13,284	542,518	82,113	1,329

Source of U.S. Imports

(Average in 1,000 b/d)

Country of origin	Jan.	Feb.	Mar.	Apr.	May	June	6-month average	Percent of total
Crude oil								
Algeria	....	....	....	77	264	303	108	3.2
Bahamas	74	17	61	87	94	150	81	2.4
Canada	1,044	907	900	947	1,015	841	943	28.3
Ecuador	95	63	90	122	82	89	90	2.7
Indonesia	147	237	216	313	188	237	222	6.6
Iran	265	288	434	479	609	434	420	12.6
Netherlands Antilles	43	30	78	72	122	420	128	3.8
Nigeria	321	367	579	431	716	677	517	15.5
Saudi Arabia	....	....	....	122	304	377	135	4.1
Trinidad	61	57	56	113	146	147	97	2.9
Tunisia	1	....	....	27	83	37	25	0.8
Venezuela	473	372	398	407	357	399	401	12.0
Virgin Islands	19	25	18	66	63	42	39	1.2
Others	146	92	78	140	267	47	129	3.9
Total	**2,689**	**2,455**	**2,908**	**3,403**	**4,310**	**4,200**	**3,335**	**100.0**
Refined oil								
Algeria	....	....	....	63	17	10	15	0.6
Bahamas	143	167	214	165	130	122	157	6.5
Canada	228	229	209	191	205	120	197	8.2
Italy	109	146	136	90	105	63	108	4.5
Netherlands Antilles	608	638	442	386	404	124	432	17.9
Nigeria	21	31	29	10	3	37	22	1.0
Trinidad	117	119	201	146	200	171	160	6.6
Venezuela	768	793	781	625	480	436	646	26.3
Virgin Islands	443	359	275	243	276	354	325	13.5
Others	319	307	273	431	255	510	348	14.4
Total	**2,756**	**2,789**	**2,560**	**2,350**	**2,075**	**1,947**	**2,410**	**100.0**
Total petroleum								
Algeria	....	....	....	140	281	313	123	2.1
Bahamas	217	184	275	252	224	272	238	4.1
Canada	1,272	1,136	1,109	1,138	1,220	961	1,140	19.8
Ecuador	95	63	90	122	82	89	90	1.6
Indonesia	158	292	224	321	196	243	238	4.1
Iran	278	296	452	507	616	468	437	7.6
Italy	121	146	143	90	105	81	114	2.0
Netherlands Antilles	651	668	520	458	526	544	560	9.8
Nigeria	342	398	608	441	719	714	539	9.4
Saudi Arabia	....	....	....	139	312	427	147	2.6
Trinidad	178	176	257	259	346	318	257	4.5
Tunisia	1	....	....	27	83	37	25	0.4
Venezuela	1,241	1,165	1,179	1,032	837	835	1,047	18.2
Virgin Islands	642	384	293	309	339	396	364	6.3
Others	429	336	318	518	499	449	426	7.5
Total	**5,445**	**5,244**	**5,468**	**5,753**	**6,385**	**6,147**	**5,745**	**100.0**

Source: Federal Energy Office estimates.

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Revised drilling forecast for 1974—U.S. and Canada

State	First half estimate—5 mos. actual				1974 12 mos. forecast				
	Total comp.	Wildcats	Field wells	Total ft (1,000 ft)	Total wells	Wildcats	Field wells	Total ft (1,000 ft)	All wells change from '73
Alabama	69	41	28	645	140	36	54	1,278	+ 38
Alaska	7	2	5	57	38	15	23	361	+ 3
Arizona	10	5	5	69	15	10	5	104	+ 7
Arkansas	145	38	107	795	329	169	160	1,939	+ 37
California	704	94	610	2,479	1,652	230	1,422	5,342	327
Onshore	668	86	582	2,400	1,561	214	1,347	5,051	+ 299
Offshore	36	8	28	79	91	16	75	291	+ 28
Colorado	455	163	292	1,821	925	427	498	3,702	+ 85
Florida (9 offshore last [illegible])	38	21	17	462	87	62	25	1,058	+ 20
Georgia	5	5	0	30	6	6	0	36	+ 3
Idaho	9	9	0	72	11	11	0	88	+ 5
Illinois	290	66	224	697	621	197	424	1,436	+ 10
Indiana	145	66	79	222	285	130	155	437	+ 26
Kansas	1,329	379	950	4,035	2,789	965	1,824	8,467	+ 675
Kentucky	328	94	234	553	702	171	531	1,184	+ 41
Louisiana	1,359	255	1,104	10,184	3,225	865	2,360	25,559	+ 285
North	513	54	459	1,730	1,014	142	872	3,419	+ 179
South	449	129	320	4,686	1,222	412	810	12,753	+ 31
Offshore	397	72	325	3,768	989	311	678	9,387	+ 75
Maryland	2	2	0	16	2	2	0	16	+ 1
Michigan	127	81	46	627	317	181	136	1,566	+ 36
Mississippi	223	157	66	1,791	500	347	153	4,016	+ 139
Missouri	11	11	0	10	12	12	0	11	+ 3
Montana	260	154	106	847	789	437	352	2,571	+ 142
Nebraska	94	61	33	498	210	140	70	1,112	+ 47
Nevada	1	1	0	7	2	2	0	14	+ 2
New Mexico	517	111	406	3,099	1,139	286	853	6,823	41
East	363	85	278	2,213	789	211	578	4,809	+ 200
West	154	26	128	886	350	75	275	2,014	− 159
New York	138	7	131	212	162	18	144	249	+ 1
North Carolina	10	10	0	38	11	11	0	42	+ 11
North Dakota	52	30	22	319	126	67	59	868	+ 2
Ohio	881	89	792	3,492	1,782	180	1,602	7,064	+ 278
Oklahoma	1,473	189	1,284	8,484	3,121	420	2,701	17,977	+ 718
Oregon	0	0	0	0	0	0	0	0	− 3
Pennsylvania	531	32	499	1,023	1,079	78	1,001	2,458	− 63
South Dakota	3	2	1	24	8	6	2	63	− 14
Tennessee	47	28	19	77	101	59	42	165	+ 1
Texas	4,976	1,563	3,413	26,024	10,323	3,353	6,970	54,570	+1,829
District 1	347	117	230	1,394	719	240	479	2,888	+ 198
District 2	341	182	159	1,917	728	400	328	4,093	+ 248
District 3	419	217	202	2,779	980	520	460	6,500	+ 146
District 4	460	189	271	2,987	961	419	542	6,240	+ 203
District 5	72	38	34	403	152	82	70	851	+ 67
District 6	140	53	87	919	331	120	211	2,172	+ 16
District 7-B	756	245	511	2,539	1,426	508	918	4,789	+ 521
District 7-C	429	95	334	2,475	844	184	660	4,710	− 25
District 8	693	66	627	4,401	1,460	162	1,298	9,579	+ 82
District 8-A	438	78	360	2,113	896	166	730	4,322	− 79
District 9	505	145	360	1,521	1,048	264	784	3,085	+ 140
District 10	261	36	225	1,586	536	75	461	3,258	+ 142
Offshore	115	102	13	990	242	213	29	2,083	+ 170
Utah	95	26	69	902	225	89	136	2,023	+ 29
Virginia	30	1	29	138	36	7	29	166	+ 27
West Virginia	308	50	258	1,007	787	109	678	2,451	+ 86
Wyoming	404	211	193	2,725	1,059	499	560	6,617	+ 139
Total U.S.	**15,076**	**4,054**	**11,022**	**73,481**	**32,616**	**9,647**	**22,969**	**161,833**	**5,014**
Canada	1,708	775	933	6,902	3,364	1,368	1,996	11,675	−1,541
Western	1,616	768	848	6,717	3,253	1,358	1,895	11,393	−1,486
Alberta	1,390	638	752	5,602	2,890	1,184	1,706	9,728	− 891
B.C.	127	57	70	596	166	72	94	873	+ 1
Manitoba	3	3	0	5	11	7	4	18	− 5
Northern	48	47	1	373	60	59	1	440	− 41
Saskatchewan	48	23	25	141	126	36	90	334	− 550
Eastern Offshore	7	7	0	75	10	10	0	110	− 20
Ontario	85		85	110	101		101	172	− 30
Eastern	0	0	0	0	0	0	0	0	− 5

How gasoline prices fared in 52 cities

(First half average of major-brand regular in ¢/gal)

	Price ex. tax		Pump price	
	1974	1973	1974	1973
Albany	41.1	27.9	53.1	39.9
Albuquerque	39.4	26.9	50.4	37.9
Amarillo	34.2	24.9	43.2	33.9
Atlanta	37.9	26.1	49.4	37.6
Baltimore	38.7	26.1	51.7	39.1
Birmingham	38.6	25.9	50.6	37.9
Boston*	37.9	26.1	49.4	37.6
Buffalo	41.1	27.4	53.1	39.4
Charlotte	38.6	25.9	51.6	38.9
Cheyenne	33.3	27.1	44.3	39.1
Chicago*	40.7	27.4	53.7	40.4
Cleveland	39.6	26.9	50.6	37.9
Corpus Christi	34.7	24.2	43.7	33.2
Dallas	34.7	24.2	43.7	33.2
Denver	41.1	27.4	52.1	38.4
Des Moines	37.9	26.9	48.9	37.9
Detroit	38.9	25.4	51.9	38.4
Fort Worth	34.7	24.2	43.7	33.2
Houston	36.0	24.2	45.0	33.2
Indianapolis	40.8	26.2	52.8	38.2
Jacksonville	38.6	25.7	50.6	37.7
Kansas City	40.5	26.6	51.5	37.6
Little Rock	36.4	24.4	47.9	35.9
Louisville	41.8	27.4	52.8	38.4
Los Angeles	38.1	25.5	49.1	36.5
Memphis	37.9	25.7	48.9	36.7
Miami	37.4	25.4	49.4	37.4
Milwaukee	40.6	27.0	51.6	38.0
Minn.-St. Paul	38.9	27.9	49.9	38.9
Newark	39.4	27.9	50.4	38.9
New Orleans	37.6	24.4	49.6	36.4
New York*	42.6	28.9	55.6	41.9
Norfolk	35.4	23.7	48.4	36.7
Oklahoma City	39.3	26.3	49.9	36.9
Omaha	40.3	26.9	52.8	39.4
Philadelphia	38.6	25.9	50.6	37.9
Phoenix	38.3	27.0	49.3	38.0
Pittsburgh	38.6	25.9	50.6	37.9
Portland, Ore.	39.0	26.2	50.0	37.2
Salt Lake City	39.1	25.7	50.1	36.7
San Antonio	34.2	24.2	43.2	33.2
San Diego	37.8	26.3	48.8	37.3
San Francisco	38.8	26.2	49.8	37.2
Seattle	37.3	25.3	50.3	38.3
Spokane	37.8	24.9	50.8	37.9
Springfield, Ill.*	38.9	26.9	51.9	39.9
St. Louis	40.8	27.7	51.8	38.7
Tampa	37.4	25.4	49.4	37.4
Texarkana	34.2	23.8	43.2	32.8
Tulsa	37.3	25.8	47.9	36.4
Wichita	39.6	26.2	50.6	37.2
Wichita Falls	34.2	24.0	43.2	33.0
†Avg. for 6 months	38.30	26.02	49.58	37.27

*Pump price includes local tax ranging from 0.5 to 2.0¢/gal. †Jan. through June, not column totals. OGJ

Foreign posted crude prices

(Prices effective July 1, 1974)

	$/bbl
Algeria:	
All 44.00°-44.09°	16.216
Libya:	
All 40.00°-40.09°	15.768
Nigeria:	
All 34.00°-34.09°,	
Bonny	14.691
Forcados	14.691
All 27.00°-27.09°,	
Bonny	14.481
Middle East, Persian Gulf:	
Arabian, 34.00°-34.09°,	
Ras Tanura	11.651
Arabian, 31.00°-31.09°,	
Ras Tanura	11.561
Iranian, 34.00°-34.09°,	
Kharg Island	11.875
Iranian, 31.00°-31.09°,	
Kharg Island	11.635
Kuwait, 31.00°-31.09°,	
Mina al Ahmadi	11.545
Oman, 34.00°-34.09°,	
Mina al Fahal	12.298
Qatar, 40.00°-40.09°,	
Um Said	12.414
Qatar, 36.00°-36.09°,	
Halul Island	12.013
Iraq, 35.00°-35.06°,	
Khor al Amaya	11.671
Abu Dhabi, 37.00°-37.09°,	
Das Island	12.086
Abu Dhabi, 39.00°-39.09°,	
Jebel Dhanna	12.636
Abu Dhabi, 40.00°-40.09°,	
Zakum	12.565
Middle East, E. Mediterranean:	
Arabian, 34.00°-34.09°,	
Sidon	13.647
Iraq, 36.00°-36.09°,	
Tripoli & Banias	No posted price
Far East:	
Brunei, Seria Light 36°,	
Lutong, Sarawak	No posted price
Malaysia (Sarawak)	
Lutong, Sarawak (various)	12.60
Indonesia (all crude)	12.60
Canada: (Canadian dollars)	
Leduc-Woodbend (Alberta)	6.70
Redwater (Alberta)	6.58
Weyburn (Sask.)	6.17
Boundary Lake (B.C.)	6.12
South America:	
Bolivia (various)	16.00
Ecuador, 28.00°-28.09°,	
Esmeraldas	13.70
Venezuela, includes $1.9086/bbl freight premium, excludes low-sulfur premiums ranging up to $1.05/bbl, posted price	
15°	13.0458
20°	13.3457
25°	14.1792
30°	14.4928
35°	14.8064
40°	15.1201

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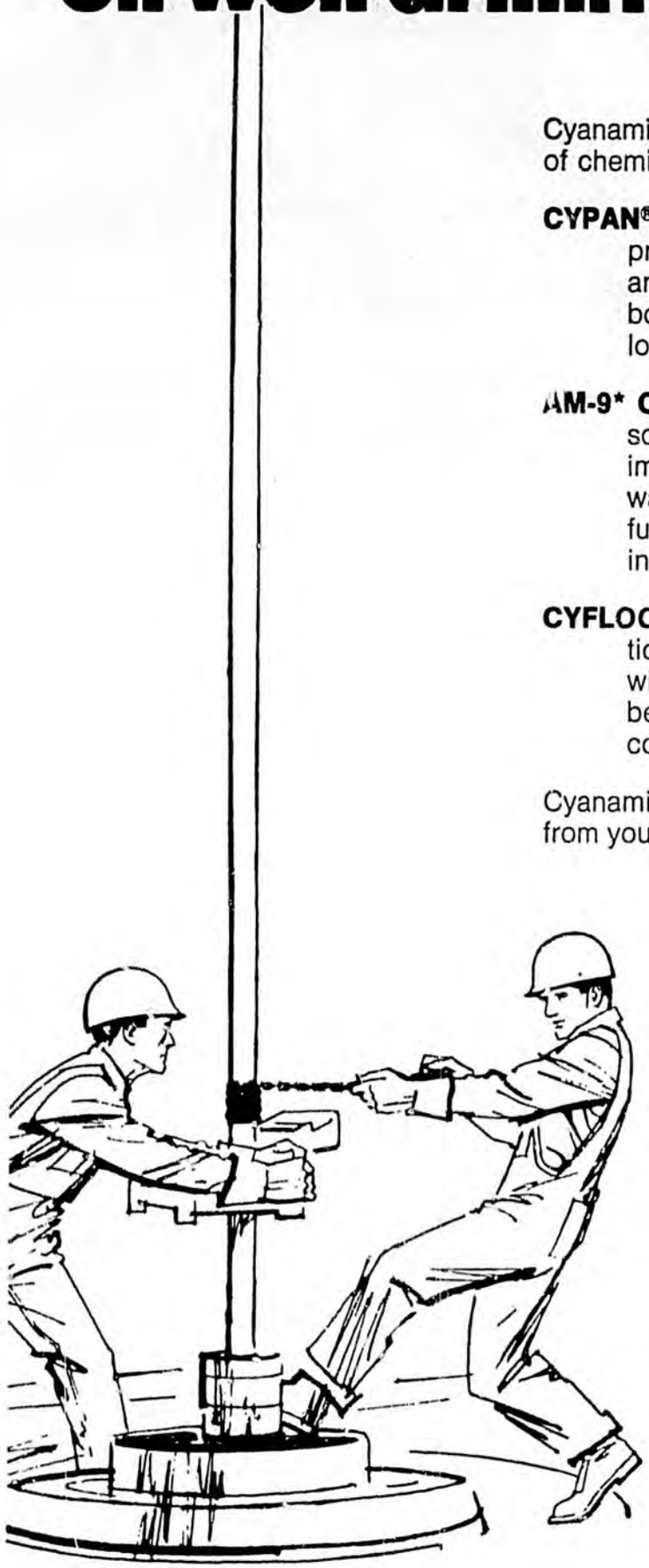

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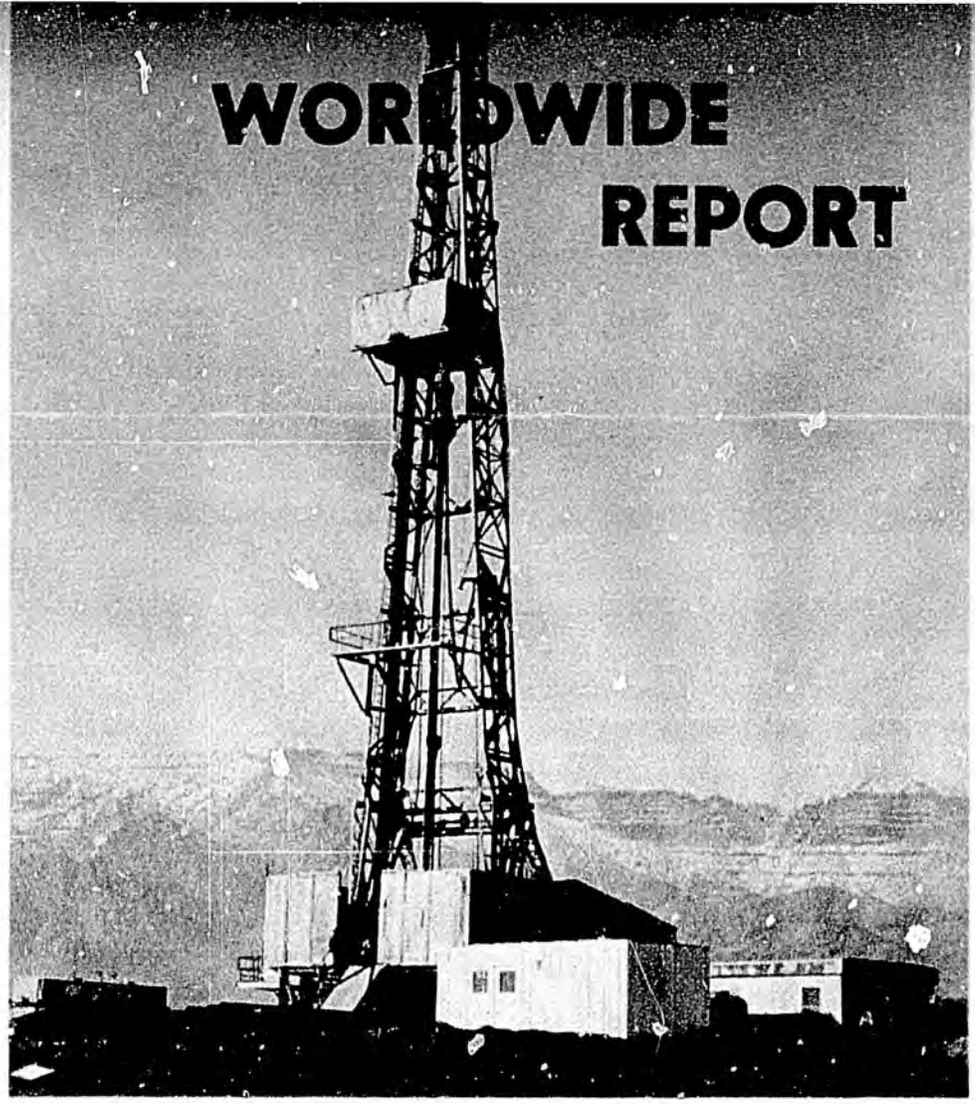


NATIONAL Iranian Oil Co. is directing a major drilling program at proving up gas reserves for a gas-injection program that will peak at 13 billion cfd. This rig is working in mountainous Central Iran.

Changes restructuring worldwide oil

FRANK J. GARDNER
International Editor

1974 WILL be remembered as the year of earthquake change in the structure and operational procedures of the oil industry.

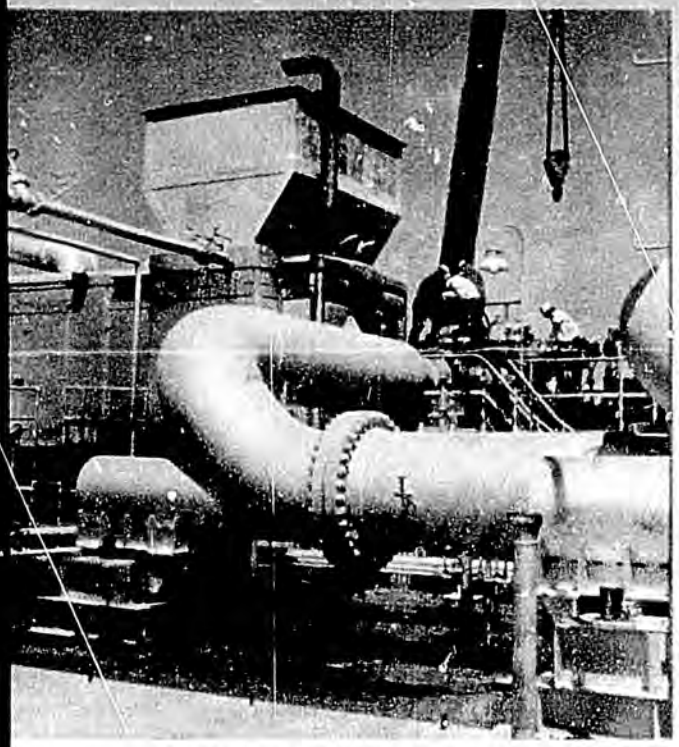
It marked the transfer of power from the international oil companies to the producing-country governments. The year saw the economies of many consuming countries threatened as their oil bills mounted due to the politically controlled crude prices. And it saw the Organization of Petroleum Exporting Countries (OPEC) ascend to new heights in world power as oil prices continued to increase.

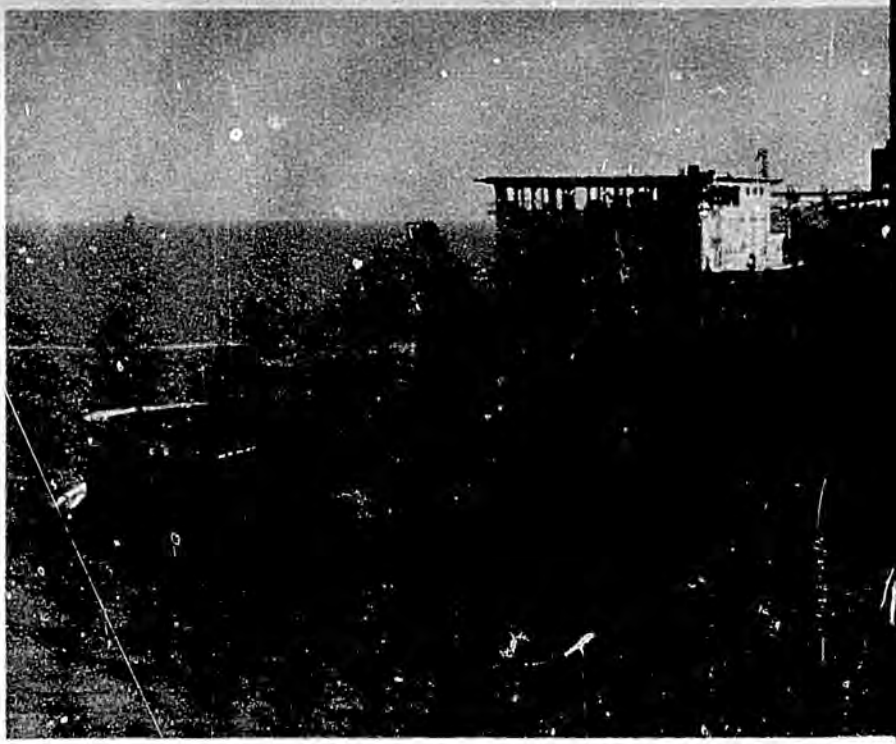
The effects of the unilateral OPEC price boosts, which continued throughout the year without letup, are just beginning to be felt. Their full impact will descend on the world economy in 1975, when international payment balances are totted up.

Through all the price pressure, Saudi Oil Minister Yamani emerged as the spokesman for those in the producing nations who were promoting a decrease in crude prices.

At the turn of the year, the Arab members of OPEC began to relax the embargos and production cutbacks they had imposed after the war of October, 1973. But the Dec. 23 announcement of yet-higher crude prices—128% higher, to be exact—stunned industrial (and nonindustrial) countries.

There followed many weeks of government-to-government oil-barter deals. It was every country for itself as the major powers dispatched their ministers to the Middle East to court the Arabs' favor.





WATER injection, via this pump station (left) and others like it, helps maintain the amazing productive muscle of Saudi Arabia's giant Ghawar oil field, the world's biggest. Ghawar produced 4.6 million b/d during the first 6 months from 375 wells, hitting 9.96 billion bbl cumulative—

Britain, France, West Germany, Italy, Spain, and the developing countries sent their diplomats to secure their future supplies of oil. In return, they were peddling rice, steel, cement, rubber, plastics, fibers, arms, entire refineries and petrochemical complexes.

Had they not been still locked out by the Arab embargo, the U.S. and Holland might also have joined the parade to the Middle East.

Some impressive deals were sealed, but few have come to full fruition. France made a $2-billion arms-for-oil pact with the Saudis, and a $5-billion 10-year contract with Iran, the biggest and most important agreement ever reached between an oil-producer and a consumer country. It involved an exchange for crude of nuclear power plants (first in the Middle East), pipelines, refineries, gas-liquefaction plants, methane tankers, and a petrochemical complex.

The hand of the French then turned to Libya and signed a similar deal, said to be about equal to that with Iran.

Britain made a $275-million bargain with Iran, trading manufactured goods for 37 million bbl of Iranian crude. Italy jumped into the play and traded a broad spectrum of industrial goods and tanker-construction promises for 220 million bbl of Libyan oil. Japan promised a $1-billion loan to the Iraqis for industrial projects in return for 650 million bbl of crude over the next 10 years.

Ironically, neither trading side was certain it could fulfill the terms of the agreements. The materials offered the producing nations were often in short supply at home in the industrial countries, while the producers were far from certain how much crude they'd be lifting under the participa-

Refining capacity gains in non-Communist world

REFINING capacity in non-Communist countries outside the U.S. and Canada will be just over 40 million b/d on Jan. 1, 1975, according to the Journal's detailed worldwide survey.

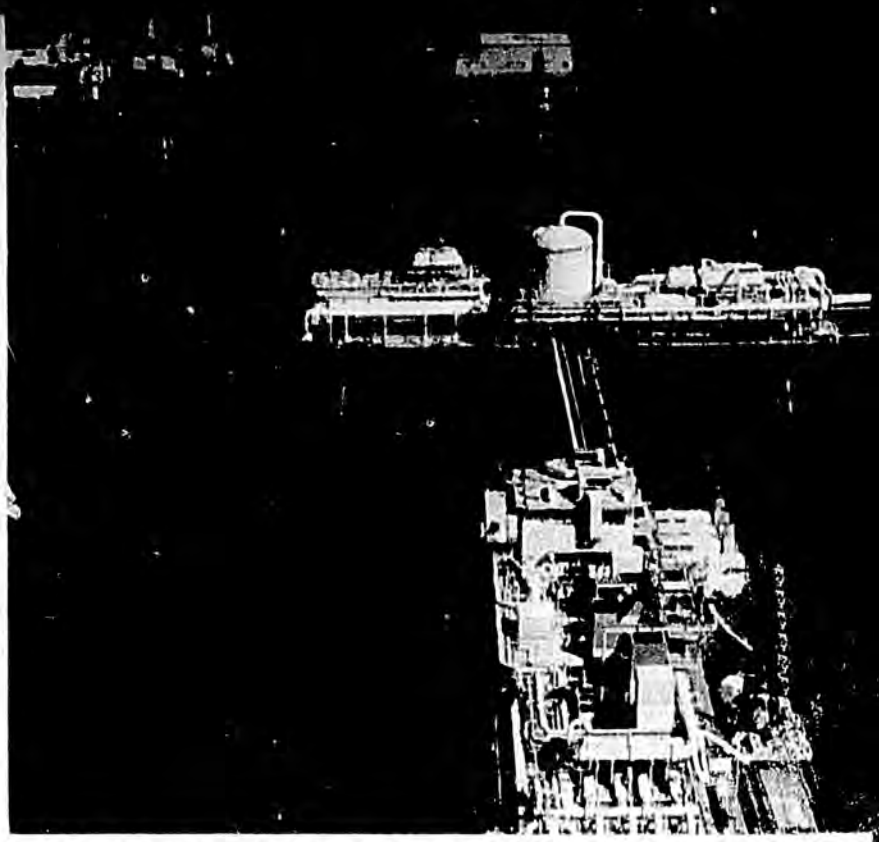
The 40.3-million-bbl total compares with 38.3 million b/d on Jan. 1, 1974, for a 5.2% growth. Projected crude capacities for the next two years are 41.5 million b/d on Jan. 1, 1976, and 42.9 million b/d on Jan. 1, 1977.

Biggest increases in crude capacity the past year came in western Europe, where a 650,000-b/d gain was chalked up. The Asia-Pacific area increased crude capacity by just over 460,000 b/d, while the increase in the Middle East was just under 400,000 b/d.

Catalytic cracking capacity in non-Communist countries outside the U.S. and Canada will stand at 2.36 million b/d on Jan. 1, 1975. This is a slight increase over the 2.33 million b/d figure on Jan. 1, 1974. The next two years should see small additions, to 2.41 and 2.48 million b/d on Jan. 1, 1976 and Jan. 1, 1977.

Catalytic-reforming capacity for this part of the world stood at 3.57 million b/d at the beginning of 1974, and will be 3.77 million b/d on Jan. 1, 1975. Reforming capacity should increase to 3.99 and 4.17 million b/d at the beginnings of 1976 and 1977.

Hydroprocessing has shown good growth in these countries, and increased growth is anticipated. Capacity this coming Jan. 1 will be 11.3 million b/d, up from the 10.6-million-b/d figure of a year ago. The first of 1976 and 1977 should see combined hydroprocessing capacity grow to 11.6 and 11.9 million b/d.



also a world record. At center, ARCO-Iiapco group's big 1-million-bbl crude-storage barge, ARCO Ardjuna, nears completion of its second year of operation off Java. At right new waterflood plant (upper left in photo) will boost oil flow from Fateh field off Dubai.

tion pacts that were then in force.

To remedy this, the Middle East states launched a campaign to increase their participation percentages. One by one throughout the year, they succeeded in boosting the old 25% share to 35, 55, and finally 60% which is now standard in all the gulf states. Today, this too is fading, as the 100% takeover is in fashion, and there's little doubt that in 1975, following the Saudis' lead, nearly all OPEC members will take over full control.

Auctions fail. Parallel with the participation campaigns, several OPEC states decided to offer their much-wanted crude at public auctions. Such public sales at the height of the late-1973 supply crisis had fetched as much as $20/bbl in Libya, Iran, and Nigeria.

But by February, crude prices had peaked, frozen, and started a slow decline. Some of the buyers at the 1973 auctions found themselves stuck with $17-20 oil that now was selling far lower. Some canceled the sales outright, while others solved the problem by simply not picking up the loot.

As a result of new buyer caution, the Arab auctions of spring, 1974, failed miserably. All had demanded at least the posted price, but bids at that level were few and far between. Kuwait got a top $9/bbl bid. Abu Dhabi drew few bidders and postponed its auction, as did Qatar.

At last, in mid-March, the embargo on the U.S. was lifted, but Denmark and Holland remained on the Arab black list. Crude markets began a slow return to normal, if total confusion can be called normal. The embargo on Holland was to remain until July.

At the same time, OPEC decided the time had come to freeze prices. Saudi Arabia, Abu Dhabi, and Qatar dropped 40¢ off the Arab marker crude in early November and jumped

Capacity (1,000 b/cd) January 1, 1975

Crude oil capacities	1-1-74	1-1-75	Projected 1-1-76	Projected 1-1-77
Asia-Pacific	8,933	9,397	9,600	9,900
Africa	1,092	1,245	1,500	1,800
Middle East	2,882	3,281	3,600	4,000
Latin America	7,266	7,635	8,000	8,400
Western Europe	18,110	18,758	18,800	18,800
Sub total	38,283	40,276	41,500	42,900
U.S. and Canada	15,171	17,323	18,000	18,500
Total, non-Communist	53,454	57,599	59,500	61,400

Capacity (1,000 b/cd) January 1, 1975

Catalytic cracking	1-1-74	1-1-75	Projected 1-1-76	Projected 1-1-77
Asia-Pacific	515	539	560	590
Africa	60	61	63	65
Middle East	108	119	130	150
Latin America	636	649	660	675
Western Europe	1,010	990	1,000	1,000
Sub total	2,329	2,358	2,413	2,480
U.S. and Canada	4,940	5,109	5,200	5,300
Total, non-Communist	7,269	7,467	7,613	7,780

Capacity (1,000 b/cd) January 1, 1975

Catalytic reforming	1-1-74	1-1-75	Projected 1-1-76	Projected 1-1-77
Asia-Pacific	850	909	1,000	1,100
Africa	139	156	180	200
Middle East	168	195	210	240
Latin America	329	283	300	330
Western Europe	2,088	2,226	2,300	2,300
Sub total	3,574	3,769	3,990	4,170
U.S. and Canada	3,568	3,809	4,000	4,200
Total, non-Communist	7,142	7,578	7,990	8,370

Capacity (1,000 b/cd) January 1, 1975

Hydroprocessing	1-1-74	1-1-75	Projected 1-1-76	Projected 1-1-77
Asia-Pacific	3,309	3,490	3,600	3,800
Africa	259	307	350	390
Middle East	552	986	620	650
Latin America	1,377	1,415	1,500	1,600
Western Europe	5,067	5,470	5,500	5,500
Sub total	10,563	11,268	11,570	11,940
U.S. and Canada	6,897	7,554	8,000	8,500
Total, non-Communist	17,460	18,822	19,570	22,040

Worldwide oil at a glance

ASIA-PACIFIC									
Afghanistan	85,000*	3,530	15	0.2*					
Australia	2,300,000	38,000	373	370.6	0.7	11	722,170	137,550	159,850
Bangladesh		10,000				1	30,450		1,620
Brunei-Malaysia	2,500,000	22,000	519	327.0	0.6	3	123,200		5,700
Burma	65,000	150	595	23.0		2	28,300	2,000	
China Republic (Taiwan)	15,000	1,000	60	3.3		1	244,100	9,040	20,800
Guam						1	29,500		
India	834,000	2,500	1,500	149.0	0.7	10	555,100	32,100	26,658
Indonesia	15,000,000	15,000	2,710	1,457.0	10.0	8	427,700	19,500	23,000
Japan	30,000	1,700	1,044	12.3		45	5,133,840	307,030	527,550
Khmer Republic						1	12,540		1,800
Korea, South						3	425,000		27,700
New Zealand	75,000*‡	5,000‡	4	3.8	− 5.0	1	54,000		18,000
Okinawa (R.I.)						3	212,000		12,000
Pakistan	28,700	16,000	16	7.1	−16.5	3	79,210		2,500
Philippines						4	274,000	24,600	34,960
Singapore						5	845,650		20,000
Sri Lanka						1	34,400		3,400
Thailand	115,000	1,000	25	0.2		4	166,200	7,000	23,900
Vietnam, South†									
Total Asia-Pacific	**21,047,700**	**115,880**	**6,861**	**2,353.5**	**4.0**	**107**	**9,397,360**	**530,820**	**909,438**

*Condensate. †Revised. ‡Oil or gas discovered, but not developed.

EUROPE									
Austria	182,000	953	1,271	47.0	− 6.0	1	220,000	16,300	23,000
Belgium						8	866,700	64,800	95,100
Cyprus						1	15,000		2,740
Denmark	247,000	500	6	4.0		3	220,000		36,700
Finland						2	196,000	32,000	25,800
France	142,000*	5,800	295	20.2	−19.2	24	3,341,600	189,900	439,930
Germany, West	550,000	11,473	2,699	125.4	− 6.9	33	2,986,723	126,550	363,520
Greece†						4	411,000		22,000
Ireland†						1	56,000		13,200
Italy-Sicily	750,000	12,000	111	18.3	− 9.4	34	3,952,660	268,500	387,370
Netherlands	250,000	94,800	347	27.4	− 2.1	7	1,840,700	75,000	164,800
Norway	7,300,000	24,700	6	30.0	200.0	3	168,000		18,500
Poland**									
Portugal						2	110,000	12,000	15,600
Romania**									
Spain	293,000	600	24	38.0	90.0	9	1,165,000		136,700
Sweden						5	248,000		47,300
Switzerland						2	138,000		23,600
United Kingdom	15,700,000	50,000	57	1.9	22.6	20	2,782,980	205,300	410,010
Yugoslavia	400,000	2,000	1,100	69.0	− 2.8				
Total Europe	**25,814,000**	**202,826**	**5,916**	**381.2**	**3.0**	**159**	**18,718,363**	**990,350**	**2,225,870**

*Includes 76 million bbl condensate. †Oil or or gas discovered, but not developed. **Not included in non-Communist total.

MIDDLE EAST									
Abu Dhabi	30,000,000	200,000	160	1,750.0	34.5				
Bahrain	336,000	6,600	211	68.0		1	250,000	34,200	15,200
Dubai	2,420,000	1,500	45	232.0	28.9				
Iran	66,000,000	330,000	369	6,128.0	0.6	5	789,000	36,000	60,665
Iraq	35,000,000	27,500	156	1,829.3	2.0	7	168,500		5,000
Israel	2,200	20	25	100.8*	−11.8	2	201,000		24,500
Jordan						1	21,223	4,403	
Kuwait	72,800,000†	32,000	692	2,600.0	− 7.4	5	646,000		19,600
Lebanon						2	53,500	7,250	7,300
Neutral Zone	17,300,000	7,500	449	485.4	− 4.3				
Oman	6,000,000	2,100	61	257.0	− 0.7				
Qatar	6,000,000	8,000	81	546.0	5.4	1	6,800		1,300
Saudi Arabia	164,500,000	55,000	670	8,400.0	11.7	3	610,300	8,210	20,490
Sharjah	1,500,000	1,500	3	50.0	100.0				
South Yemen (Aden)						1	169,100		9,000
Syria	1,500,000†	700	123	119.0	7.2	1	49,690		2,620
Turkey	500,000	250	313	65.3	0.5	4	315,500	28,600	29,660
Total Middle East	**403,858,200**	**672,670**	**3,358**	**22,670.8**	**7.0**	**33**	**3,280,613**	**118,663**	**195,335**

*Includes captured Sinai fields. †Revised.

AFRICA									
Algeria									
Angola-Cabinda									
Congo Republic									
Dahomey*									
Egypt									
Ethiopia*									
Gabon									
Ghana*									
Ivory Coast									
Kenya									
Liberia									
Libya									
Malagasay									
Morocco									
Mozambique*									
Nigeria									
Rhodesia									
Senegal									
Sierra Leone									
Sudan									
Tanzania									
Tunisia									
Union of S. Africa*									
Zaire†									
Zambia									
Total Africa									
WESTERN HEMISPHERE									
Antigua									
Argentina									
Bahamas									
Barbados									
Bolivia									
Brazil									
Chile									
Colombia									
Costa Rica*									
Cuba									
Dominican Republic									
Ecuador									
El Salvador									
Guatemala*									
Honduras									
Jamaica									
Martinique									
Mexico									
Netherlands Antilles									
Nicaragua									
Panama									
Paraguay									
Peru									
Puerto Rico									
Trinidad & Tobago									
Uruguay									
Venezuela									
Virgin Islands									
United States									
Canada									
Total W. Hemisphere									
Total Non-Communist									
Communist World									
Total World									

7,700,000	229,000	826	888.8	−19.2	4	115,335		30,500
1,175,000	1,400	181	161.5	6.9	2	35,680		1,800
4,874,000	1,000	52	51.2	12.0				
3,700,000	3,500	437	118.3	−42.8	1	18,000		
					1	14,430		1,890
1,750,000	7,000	137	182.0	20.1	1	17,000		2,000
					1	28,000		6,500
					1	42,940		4,420
					1	48,000		4,000
					1	11,000		2,000
26,600,000	26,500	979	1,700.0	−21.6	6	76,400		8,000
					1	15,000		2,200
450	24	22	0.9		2	58,550	3,660	7,580
					1	17,000		2,500
20,900,000	45,000	1,088	2,300.0	15.0	1	60,000		6,500
					1	(not operating—not included in total)		
					1	15,000		1,320
					1	10,000		
					1	22,000		2,000
					1	16,100		4,200
1,100,000	1,500	55	85.0	3.5	1	25,000		3,300
					5	397,100	57,400	56,700
500,000	50				1	16,150		2,700
					1	24,620		5,600
68,299,450	314,974	3,777	5,487.7	− 7.2	40	1,083,305	61,060	155,710

*Oil or gas discovered, but not developed. †To go on production in 1976 at 25,000 b/d.

					1	16,000		2,000
2,346,000	7,500	4,095	422.0		14	720,718	101,185	51,370
					1	500,000		
25,000		8	0.3	100.0	1	3,000		
250,000	11,000	281	47.5	− 5.0	5	25,500		
775,000	914	1,247	172.2	1.2	10	961,800	183,000	21,000
200,000	2,800	316	28.6	−15.9	3	123,500	26,300	10,000
900,000	4,000	2,078	169.7	−16.0	6	172,100	48,500	2,000
					1	11,000		1,500
					3	121,970	14,570	11,700
					2	45,500		7,000
2,500,000†	5,000	843	232.0	12.5	4	44,350		
					1	14,000		2,600
					2	24,800		5,500
					1	14,000		1,800
					1	32,600		3,000
					1	10,400		2,500
13,582,000	15,000	3,201	513.5	17.1	6	760,000	109,000	35,300
					2	900,000	35,000	15,000
					1	13,200		2,600
					1	100,000		7,500
					1	5,000		
2,500,000	5,000	2,422	69.7	− 1.3	5	129,600	25,960	1,760
					3	283,800	47,800	75,500
2,500,000	6,000	3,020	181.3	9.9	2	461,000	26,500	27,000
					1	43,000	4,000	3,000
15,000,000**	43,000	12,450	3,025.0	−10.0	12	1,531,715	46,589	20,600
					1	590,000		
35,299,839	250,000	504,000	8,945.0	− 2.9	247	14,216,287	4,156,720	3,022,235
9,400,000	52,500†	21,202	1,682.0	− 6.5	42	1,877,550	399,150	309,090
85,277,839	402,714	555,263	15,488.8	− 1.7	381	23,752,390	5,224,274	3,641,555

*Oil or gas discovered, but not developed. †Revised. **Does not include Orinoco heavy oil belt's estimated 700 billion bbl. ‡Does not include Arctic gas.

604,297,189	1,709,064	575,175	46,382.0	2.0	720	56,232,031	6,933,167	7,127,908
**111,400,000	846,000‡		10,390.0	7.5				
715,697,189	2,555,064		56,722.0	3.0				

**Including Russia 82.4 billion, Mainland China 25 billion, others 3 billion. ‡Including Russia 812 trillion, Mainland China 25 trillion, Hungary 5 trillion, others 6 trillion.

OIL & GAS JOURNAL

royalties to 20% and taxes to 85%. Net effect was a 55¢/bbl hike in average cost/bbl to the companies. Other OPEC nations voted at the December meeting in Vienna to join the three gulf states at the higher prices.

Solutions. What hope is there that the world can free itself of its OPEC chains? There are those who contend that crude prices can only continue in the ascendancy. Others differ. There are as many opinions as there are interviewees.

But there is hope. And it's a long-term proposition. But hope there is. The obvious solution, of course, is to find crude sources outside the OPEC orbit. Ironically, much of the relief to non-Communist consuming countries will come from big communist sources.

OPEC has three big markets—western Europe, Japan, and the U.S. And each of the three has something going for it in the way of new, non-OPEC sources.

Western Europe pins much of its hopes, of course, on the North Sea, provided the government politicians will stand aside and let it develop. Conservative sources now see at least a 42-billion-bbl ultimate reserve for the sea. Less conservative ones peg it as high as 79-138 billion. Only time will tell.

But western Europe has yet another ace—Russia. Production there overtook the U.S. in latter 1974, making the Soviet Union the world's biggest producer with an average daily output of 9.4 million bbl in October, up 7% above 1973. Almost all of the gain has come from the western Siberian oil fields, where the Soviets are developing new production at a feverish pace. One field—Samotlor—produces more than half of all western Siberian crude. In mid-November, its output was 1.5-million b/d, 39% more than at the beginning of the year. This gives some idea of the pace of Russian development.

Russia is scoring natural-gas production gains that are every bit as important as her crude increases. During the first 10 months of 1974, gas output jumped 10% over the same time slot in 1973.

The Soviets have discovered that oil and gas is big business. And they're making money at it. Oil and gas sales have bailed the big country out of a deepening foreign exchange crisis and

NEW 132,000-b/d refinery for Total Raf. Nederland N.V. at Vlissingen, Netherlands, helped boost western Europe crude capacity this year.

delivered a 1973 surplus of more than 260-million rubles. That's $359 million or £149 million.

Current oil reserves in the Soviet Union are estimated at 83.4-billion bbl, compared to 80 billion at the beginning of the year. Its gas reserves are set at a whopping 812-trillion cu ft, according to Soviet officials—that's 3.5 times Algeria's reserve, and 2.5 times those of Iran.

Russia must sell her oil and gas, and she eyes western Europe as a principal buyer. Already availability of new Russian gas supplies has disrupted the 1972 Eurogas agreement to supply Algerian gas to France, Belgium, West Germany, Austria, and Switzerland.

The Soviet Union, then, is western Europe's second big hope for oil and gas outside the OPEC circle.

Japan, too. OPEC's third-largest market also is vulnerable. In this instance, the two communist superpowers promise to sweep Japan completely out of the OPEC orbit in the years ahead.

Russia is building both a railway and a 620-mile big-inch pipeline from the Tyumen oil fields of western Siberia to her Pacific coast, where vast amounts of crude will be made available to Japan and other Pacific markets, including the U.S.

More importantly, Mainland China, already providing nearly 200,000 b/d to Japan, is expected to have at least 2 million b/d available for export by 1980, and, according to Japanese oil officials, the Chinese expect to be producing, and exporting most of, 8 million b/d in the mid-1980's. That would put it in a class with Saudi Arabia.

The Chinese, like the Russians, have discovered that oil and gas is big business.

U.S. doubtful. OPEC's largest marketplace, the United States, could also find relief from OPEC sources, although total relief is more doubtful.

Its greatest hopes of course, are offshore and the closed-in giant fields on Alaska's North Slope. The sparsely explored regions of Alaska's slope holds vast undiscovered reserves, and when the Alyeska pipeline is finished, these will be uncovered at a rapid rate. Plans now call for the line to bring 1.2 million b/d by late 1977.

Higher crude prices have stimulated the search for oil and gas in the Lower 48 as well. Active rigs in the U.S. during the first 9 months of this year were up by 26%, an indication that U.S. oilfinders have gone back to work in earnest.

Other forces. There are other, less tangible, forces eroding the OPEC image.

One is the very ubiquity of oil in the earth. Experience of the past few decades proves that oil and gas can and will be found in many parts of the world previously unsuspected as major sources. The North Sea is only one fantastic example of this. Reserves may not be as enormous as those of the Middle East, but 42-million bbl of oil is not to be sneezed at.

And another important discovery to watch is Mexico's Reforma trend in the southern states of Tabasco and Chiapas. Pemex has declined to officially estimate the reserves in Reforma, but some observers feel the find could be one of the giants of North America.

Another force at work is the improved technology that is constantly thrust into our oil-finder's hands. Their success ratios in the North Sea, the South American countries, and other parts of the world are enviable.

Prices a question. With so many forces working against it, OPEC may not be able to long afford the luxury of the attitudes displayed all this year.

International oil consultant Samuel Nakasian summed up the situation most succinctly when he told a New York seminar in mid-November:

"Fairly soon, OPEC must come to the realization that having achieved the discipline of its members to establish high price levels, it has also triggered the competition of new oil and gas supplies and other energy sources. At some point in the near future OPEC must consider whether its self-interest may not best be served by lowering prices in order to decelerate the development of competing sources of energy."

Abbreviations used with the refining tabulations

(All figures in barrels per calendar day.)

All figures are as of 1-1-75

Cracking processes:
- FCC—Fluid cat cracking
- TCC—Thermofor cat cracking
- HD—Houdriflow cat cracking

Hydroprocessing:
- DHC—Distillate hydrocracking
- RHC—Residual hydrocracking
- HDT—Catalytic hydrotreating
- HDS—Catalytic hydrodesulfurization

Other processing:
- A—Asphalt
- Alky—Alkylation
- C—Coking (t/d)
- L—Lube manufacture
- P—Polymerization
- V—Vacuum distillation
- W—Waxes

CALENDAR DAY FIGURES reported in this survey are refiners' averages for how many barrels each day a refinery unit yields on the average, including downtime used for turnarounds. These figures are what refiners actually run in a year, divided by 365. (Stream day figures represent the potential a refinery unit can yield when running full capacity).

Worldwide refining

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
ALGERIA	Sonatrach:					
	Arzew	54,600		16,000	1,000 HDT	10,300 V, 1,500 L, 1,300 A
	El Borma	600				
	Hassi Messaoud	3,135				
	Maison Carree	57,000		14,500		
	Total	115.335		30,500	1,000	
ANGOLA	Cabinda Gulf, Cabinda	2,800				
	Companhia de Petróleos de Angola (SARL), Luanda	32,880		1,800	5,850 HDS	1,800 V
	Total	35.680		1,800	5,850	
ANTIGUA	West Indies Oil Co. Ltd., St. John's	16,000		2,000	7,500 HDS	1,500 V, 750 A
ARGENTINA	Astrasur, Refinerías Patagónicas de Petróleo SA, Comodoro Rivadavia, Chubut	6,800				4,800 V, 5,300 A
	Destileria Argentina de Petróleo SA, Lomas de Zamora	1,800				1,200 V, 500 L
	Esso SAPA, Campana	91,900	17,600 FCC	8,000		49,700 V, 1,300 L, 500 C
	Galván	17,000				
	Ragor SAIC, Quilmes	600				
	Refinería de Petróleo Isaura SA, Bahía Blanca	12,580				
	Shell Compañía Argentina de Petróleo SA, Buenos Aires	115,000	21,000 FCC	9,000	25,000 HDT	
	Yacimientos Petrolíferos Fiscales:					
	Campo Durán	28,305				
	Dock Sud	5,975				1,572 V
	El Centauro, Tierra del Fuego	189				
	La Plata	289,000	44,973 FCC	17,185	3,800 HDT 9,435 HDS	64,158 V, 1,673 Alky, 3,450 L, 650 C, 9,230 A
	Luján de Cuyo	113,200	17,612 FCC	17,185	2,516 HDS	59,577 V, 1,000 C
	Plaza Huincul	5,032				
	San Lorenzo	33,337				9,435 V, 1,190 A
	Total	720.718	101,185	51,370	40,751	
AUSTRALIA	Amoco Australia Pty. Ltd., Bulwer Island	58,000	8,600 FCC	5,300	1,400 HDT 7,500 HDS	14,500 V, 1,400 Alky, 1,20 A
	Ampol Refineries Ltd., Lytton	60,000	19,000 FCC	13,000		26,000 V, 2,500 Alky, 1,500 P
	Australian Oil Refining Pty. Ltd., Kurnell	132,000	36,100 FCC	26,600		48,500 V, 3,200 Alky, 2,800 P
	Kurnell (lube refinery)				6,500 HDT	7,100 V, 3,600 L
	BP Australia Ltd., Westernport	57,000		18,000	15,300 HDT	3,150 V, 1,000 A
	BP Refinery (Kwinana) Pty., Kwinana	103,070	14,850 FCC	18,450	13,050 HDT 7,650 HDS	40,500 V, 2,200 L, 700 A
	Petroleum Refineries Australia Pty. Ltd., Adelaide	46,500		11,500	35,000 HDS	2,500 V, 2,600 A
	Altona	98,600	24,000 TCC	26,000	33,000 HDT 10,000 HDS	22,000 V, 2,000 Alky, 3,000 A
	Shell Refining (Australia) Pty. Ltd., Clyde	55,000	17,000 FCC	18,000	22,000 HDT 6,000 HDS	
	Geelong	92,000	18,000 FCC	17,000	36,000 HDT 11,000 HDS	
	Total Refineries Australia Ltd., Matraville	20,000		6,000	4,300 DHC 11,000 HDS	12,000 V, 1,700 A
	Total	722.170	137,550	159,850	219,700	
AUSTRIA	OMV AG, Schwechat	220,000	16,300 FCC	23,000	26,000 HDT 24,000 HDS	46,000 V, 2,300 L, 5,850 A
	Total	220.000	16,300	23,000	50,000	
BAHAMAS	Bahamas Oil Refining Co., Freeport	500,000				
BAHRAIN	Bahrain Petroleum Co. Ltd. Awali	250,000	34,200 FCC	15,200	61,700 HDS	164,000 V, 1,300 P, 2,400 A

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
BANGLADESH	Eastern Refinery, Chittagong	30 450	.....	1,620	2,410 HDS	.....
BARBADOS	Mobil Oil Barbados Ltd., Bridgetown	3,000	.....	.....	.....	400 A
BELGIUM	SAB Albatros, Antwerp	60,000	.....	10,700	14,300 HDS	.....
	Anglo-Belge des Petroles SA, Antwerpen-Kiel	4,900	.....	.....	.....	.....
	Belgian Shell NV, Ghent	9,400	.....	.....	.....	.....
	Esso Belgium NV, Antwerp	93,000	10,000 FCC	8,000	17,800 HDT 23,000 HDS	32,000 V, 20,500 A
	NV Societe Industrielle Belge des Petroles SA, Antwerp	321,400	54,800 FCC	28,400	55,800 HDT 53,900 HDS	117,200 V, 4,300 Alky, 1,560 P, 11,300 A
	Raffinerie Belge de Petroles, Antwerp	98,000	.....	19,000	27,000 HDT 10,000 HDS	14,000 V, 9,200 A
	SA Chevron Belgium, Feluy	140,000	.....	11,500	11,500 HDT 23,000 HDS	85,000 V, 9,000 A
	Texaco Belgium NV, Ghent	140,000	.....	17,500	46,000 HDT	.....
	Total	866,700	64,800	95,100	282,300	
BOLIVIA	Yacimientos Petrolíferos Fiscales Bolivianos:					
	Camiri	1,500	.....	.....	.....	.....
	Cochahamba	16,500	.....	.....	.....	500 L
	Sanandita	500	.....	.....	.....	.....
	Santa Cruz	3,000	.....	.....	.....	.....
	Sucre	4,000	.....	.....	.....	.....
	Total	**25,500**	.....	.....	.....	
BRAZIL	Petróleo Brasileiro SA:					
	Betim, Minas Gerais	60,500	13,000 FCC	.....	.....	29,000 V, 2,200 A
	Canoas, Rio Grande do Sul	60,500	13,000 FCC	.....	.....	29,000 V, 1,400 A
	Capuava, Sao Paulo	33,000	14,000 TCC	.....	.....	15,000 V
	Cubatao, Sao Paulo	175,000	45,000 FCC	10,500	.....	95,000 V, 600 C, 3,600 A
	Duque de Caxias, Rio de Janeiro	197,000	35,000 FCC	10,500	.....	82,000 V, 4,500 L, 2,200 A
	Mataripe, Bahia	77,000	22,000 FCC	.....	.....	41,000 V, 2,900 L, 1,400 A
	Paulina, Sao Paulo	330,000	39,000 FCC	.....	.....	82,000 V, 4,000 A
	Paredao, Manaus	10,000	2,000 FCC	.....	.....	3,000 V, 1,000 A
	Refinaria de Petróleo Ipiranga SA, Rio Grande	9,300	.....	.....	.....	1,000 A
	Refinaria de Petróleos de Manguinhos SA, Rio de Janeiro	9,500	.....	.....	.....	.....
	Total	**961,800**	**183,000**	**21,000**	.....	
BRUNEI	Sarawak Shell Berhad, Lutong	60.000	.....	.....	.....	.....
BURMA	Myanma Oil Corp., Chauk	6,800	.....	.....	.....	2,700 V, 50 (t/d) W
	Syriam	21,500	2,000 TCC	.....	.....	2,300 V, 700 L, 50 C
	Total	**28,300**	**2,000**	.....	.....	
CHILE	Empresa Nacional del Petróleo, Concepción	72,000	14,300 FCC	4,000	.....	38,000 V
	Concón	50,000	12,000 FCC	6,000	.....	24,000 V, 1,100 Alky, 1,300 A
	Magallanes	1,500	.....	.....	.....	.....
	Total	**123,500**	**26,300**	**10,000**	.....	
CHINA (TAIWAN)	Chinese Petroleum Corp., Kaohsiung	244,100	9,040 TCC	20,800	22,600 HDT 22,600 HDS	3,160 V, 810 Alky, 4,100A
	Total	**244,100**	**9,040**	**20,800**	**45,200**	
COLOMBIA	Colombian Petroleum Co., Tibú, North Santander	3,000	.....	.....	.....	.....
	Empresa Colombiana de Petróleos, Barrancabermeja	110,000	35,000 FCC	2,000	.....	55,000 V, 2.500 Alky, 3,300 L, 1.300 W, 3,500 A,
	Cartagena	50,000	13,500 FCC	.....	.....	30,000 V, 3,500 P
	International Petroleum (Colombia) Ltd., La Dorada	5,600	.....	.....	.....	.....

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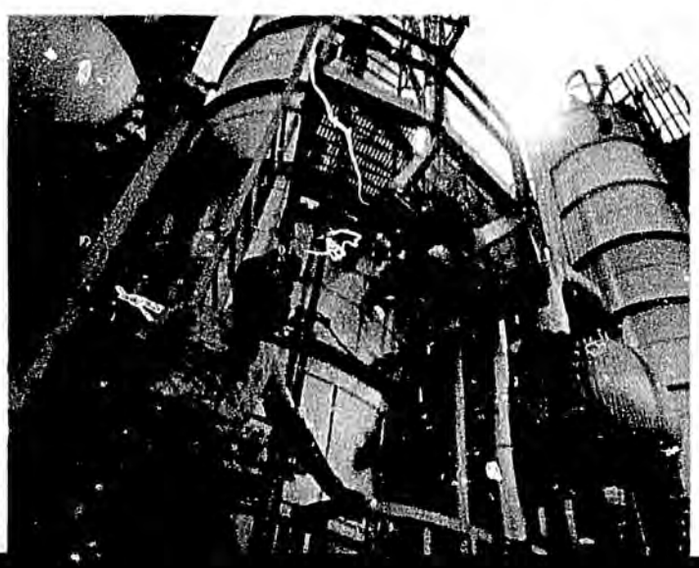
The Fisher dc² computer: a month to install,



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For starters, the system was delivered a week early. Since many of the usual software functions are built into standard dc² hardware, only application programming was needed. Celanese process engineer Dan Bennett programmed dc² in less than two weeks. The quick programming allowed time for thorough operator training before start-up.

Production pace required rapid start-up. Celanese had previously switched from pneumatic control to Fisher ac² analog control, bringing two distillation columns on line in only 12 hours. dc² supervisory control was then added in just one day.

a day to start up, a year to pay off.

The Fisher control system gives the operators better control over their process and lets them run the computer, not vice-versa. The reflux rate has been reduced so that less process steam is needed. That alone saves two railroad cars of coal a month. And this saving pays for the system in one year.

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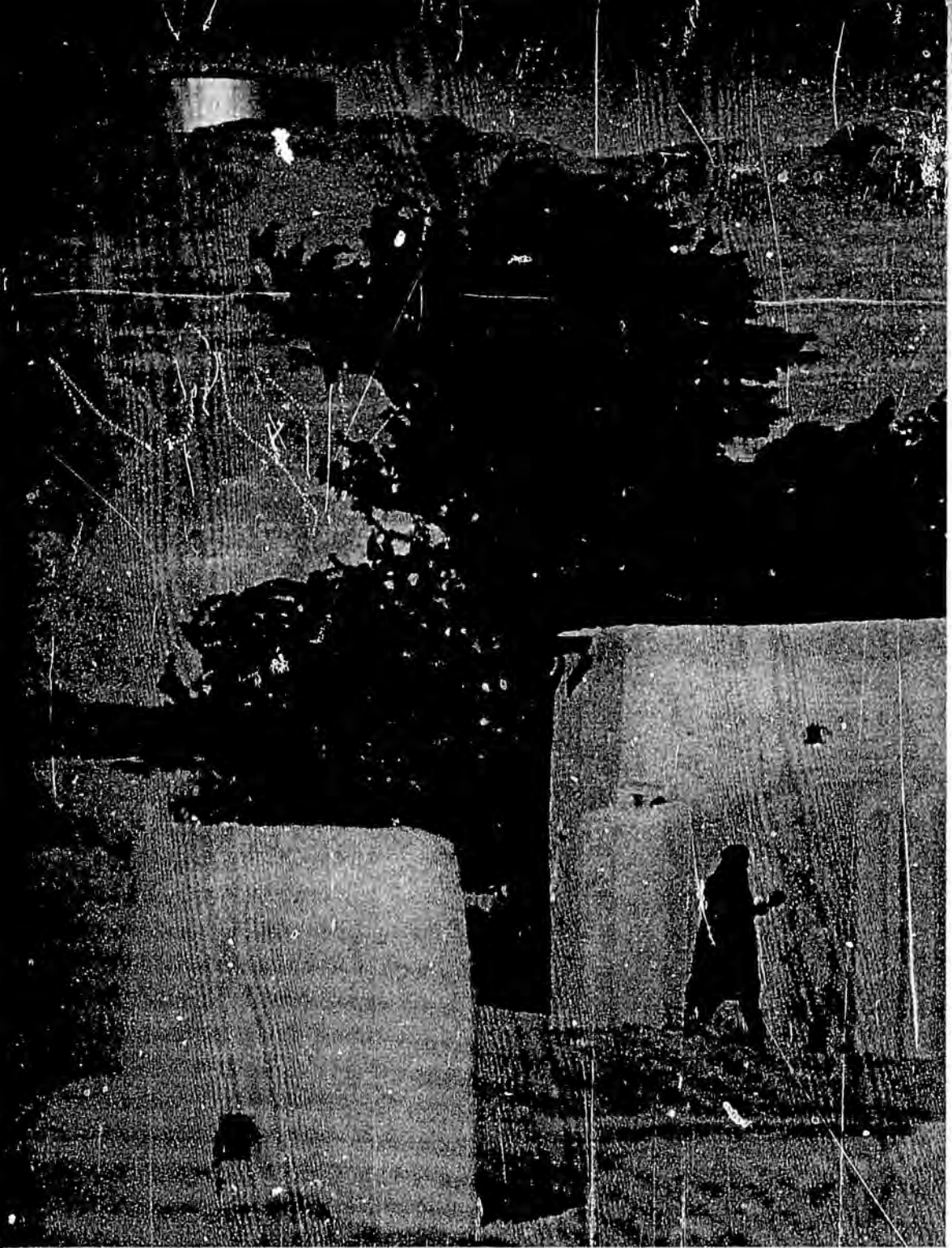

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WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	Texas Petroleum Co., El Guamo	2,500	.....	.....	.....	.....
	Orito (with Petrolera del Rio)	1,000	.....	.....	.....	.....
	Total	**172,100**	**48,500**	**2,000**	.....	
COSTA RICA	Refinadora Costarrincense de Petróleo, Moín, Limón	11,000	.....	1,500	3,500 HDT	500 V, 300 A
CUBA	Instituto Cubano del Petróleo:					
	Cabaiguán	4,900	.....	.....	.....	.....
	Havana	75,000	14,570 FCC	8,100	12,600 HDS	22,140 V, 2,675 P, 6,000 A
	Santiago de Cuba	42,000	.....	3,600	6,000 HDS	
	Total	**121,970**	**14,570**	**11,700**	**18,600**	
CYPRUS	Cyprus Petroleum Refinery Ltd., Larnaca	15,000	.....	2,740	6,000 HDT	1,070 V, 500 A
DENMARK	A/S Dansk Shell, Fredericia	59,000	.....	12,000	14,000 HDT 8,000 HDS	.....
	Dansk Esso A/S, Kalundborg	71,000	.....	7,600	10,000 HDS	25,000 V, 9,000 A
	Gulf Oil Refining A/S, Skaelskor	90,000	.....	17,100	50,600 HDS	14,950 V
	Total	**220,000**	.....	**36,700**	**82,600**	
DOMINICAN REPUBLIC	Falconbridge Dominicana C por A, Bonao	15,500	.....	.....	7,000 HDS	.....
	Refinería Dominicana de Petróleo SA, Nigua	30,000	.....	7,000	12,000 HDT	.....
	Total	**45,500**	.....	**7,000**	**19,000**	
ECUADOR	Anglo-Ecuadorian Oilfields Ltd., La Libertad	30,400	.....	.....	.....	.....
	Corporación Estatal Petrolera Ecuatoriana, La Libertad	5,000	.....	.....	.....	.....
	Petróleos Gulf del Ecuador CA, La Libertad	8,000	.....	.....	.....	.....
	Texaco Petroleum Co., Lago Agrio	950	.....	.....	.....	.....
	Total	**44,350**	.....	.....	.....	
EGYPT	Refineries:					
	El Amiriya	26,000	.....	.....	.....	.....
	Mex	120,000	.....	.....	.....	.....
	Tanta	14,600	.....	.....	.....	.....
	Others	19,400	.....	.....	.....	.....
	Total	**180,000**	.....	.....	.....	
EL SALVADOR	Refinería Petrolera Acajutla SA, Acajutla	14,000	.....	2,600	9,500 HDT	725 A
ETHIOPIA	Ethiopian Petroleum S.C., Assab	14,430	.....	1,890	2,330 HDT	3,026 V, 697 A
FINLAND	Neste Oy, Naantali	56,000	11,000 TCC	6,800	7,700 HDT 7,400 HDS	15,000 V, 2,700 P, 5,900 A
	Porvoo	140,000	21,900 FCC	19,000	31,600 HDT 37,000 HDS 14,000 DHC	60,000 V, 7,500 P, 6,700 A
	Total	**196,000**	**32,900**	**25,800**	**97,100**	
FRANCE	Antar Petroles de l'Atlantique, Donges	143,000	11,200 TCC	28,700	43,000 HDS	6,800 V
	Valenciennes	62,000	.....	13,000	12,600 HDS	.....
	Vern-sur-Seiche	26,000	.....	7,400	.....	.....
	Compagnie Francaise de Raffinage, Gonfreville l'Orcher	484,000	24,300 FCC	64,380	71,600 HDT 85,000 HDS	56,000 V, 2,800 P, 7,400 L, 20,250 A
	La Mede	212,000	27,400 FCC	41,000	820 HDT 53,000 HDS	40,500 V, 820 P, 16,200 A
	Mardyk, Dunkerque	125,000	.....	22,000	37,000 HDT 17,300 HDS	.....
	Compagnie Rhenane de Raffinage, Reichstett-Vendenheim	75,000	.....	13,000	24,000 HDT 16,000 HDS	.....
	Elf Union:					
	Raffineria de L'ile de France, Mormant	75,000	.....	15,000	23,000 HDT 8,000 HDS	29,000 V
	Raffinerie du Vexin, Gargenville	136,000	.....	.....	.....	.....
	Raffinerie ELF, Feyzin	178,000	19,000 FCC	9,200	9,200 HDT	39,600 V
	Raffinerie ELF, Union Industrielle des Petroles, Ambes	43,000	8,700 FCC	4,600	4,600 HDT	22,000 V, 450 P

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	ESAF, Ambes	60,000	.....	8,000	.....	30,000 V, 2,400 A
	Fos sur Mer	170,000	14,300 FCC	25,700	85,000 HDT 24,300 HDS	19,500 V, 2,000 A
	Port Jerome	150,000	12,000 FCC	27,000	46,500 HDT 35,000 HDS	42,000 V, 5,600 L, 6,000 A
	Mobil Oil Francaise, Frontignan	120,000	11,000 TCC	20,000	26,000 HDT 18,000 HDS	11,000 V, 1,000 A
	Notre Dame de Gravenchon	72,500	.....	17,000	21,000 HDT 7,000 HDS	10,500 V, 4,000 L, 1,500 A
	Raffinerie de Strasbourg, Herrlisheim-Drusenheim	95,000	.....	22,000	22,000 HDT 13,500 HDS	16,600 V, 6,000 A
	Shell Francaise, Berre l'Etang	285,000	17,000 FCC	24,000	70,000 HDT 13,000 HDS	.....
	Pauillac	90,000	24,000 FCC	15,000	32,000 HDT 13,000 HDS	.....
	Petit Couronne	200,000	21,000	16,000	31,000 HDT 14,000 HDS	.....
	Societe Francaise des Petroles, BP, Dunkirk	118,750	.....	13,500	.....	17,100 V, 4,200 L, 3,600 A
	Lavera	243,200	.....	7,200	13,500 RHC 13,230 HDT 13,500 HDS	40,150 V, 2,740 A
	Vernon	73,150	.....	11,250	18,000 HDT 10,800 HDS	5,050 V, 2,000 A
	Societe de la Raffinerie de Lorraine (CFR 51%, Esso 40%, Elf Union 9%), Hauconcourt	105,000	.....	15,000	35,000 HDT 11,500 HDS	16,000 V, 9,100 A
	Total	**3,341,600**	**189,900**	**439,930**	**991,450**	
GABON	Societe Gabonaise de Raffinage, Port Gentil	17,000	.....	2,000	4,000 HDT	
GERMANY, WEST	Caltex Deutschland GmbH, Raunheim	90,000	.....	3,500	8,600 DHC 6,500 HDT	28,000 V
	Deutsche BP AG, Dinslaken	203,300	11,150 FCC	12,600	9,000 HDS	21,600 V, 5,600 A
	Finkenwerder, Hamburg	103,900	.....	7,650	8,550 HDS	46,450 V, 2,400 A
	Vohburg	104,500	10,800 FCC	16,200	25,200 HDT 13,300 HDS	21,600 V, 6,400 A
	Deutsche Marathon Petroleum GmbH, Burghausen, Bavaria	70,000	.....	.....	10,000 HDT	550 C
	Deutsche Shell AG, Godorf	165,000	.....	24,000	68,000 HDT 49,000 HDS	.....
	Harburg-Grasbrook	85,000	12,000	9,000	16,000 HDT 12,000 HDS	
	Ingolstadt	55,000	.....	8,000	17,000 HDT 17,000 HDS	.....
	Monheim	7,000	.....	.....	.....	.....
	Deutsche Texaco AG, Heide	105,000	8,000 TCC	14,000	14,000 HDT 26,000 HDS	35,000 V, 300 P, 3,500 A
	Erdol Raffinerie Duisburg GmbH, Duisburg	37,800	.....	7,300	7,300 HDT 4,200 HDS	.....
	Erdolraffinerie Ingolstadt AG, Ingolstadt-Donau	130,000	.....	29,500	42,000 HDT 6,500 HDS	.....
	Erdol-Raffinerie Neustadt GmbH, Neustadt-Donau	144,000	11,700 FCC	17,700	26,500 HDT 21,000 HDS	24,000 V
	Erdoel-Raffinerie Speyer, Speyer	57,800	.....	.....	.....	.....
	Erdolwerke Frisia AG, Emden	47,500	.....	9,500	15,600 HDS	.....
	Esso AG, Hamburg	110,000	8,000 FCC	14,000	33,000 HDT 22,000 HDS	15,000 V, 2,300 L, 9,000 A
	Ingolstadt	100,000	15,000 FCC	13,500	31,500 HDT 34,000 HDS	26,000 V, 7,500 A
	Karlsruhe	180,000	.....	30,000	54,000 HDT 58,000 HDS	45,000 V, 10,000 A
	Koln	115,000	.....	9,000	10,000 HDT 12,000 HDS	17,000 V, 8,000 A
	Gelsenberg AG, Gelsenkirchen-Horst	144,000	11,900 TCC	30,700	16,300 HDT 31,400 HDS	16,100 V, 370 L
	Gewerkschaft Erdol-Raffinerie Deurag, Nerag, Misburg	54,000	.....	8,000	7,000 HDS	.....
	Mobil Oil AG, Bremen	30,000	7,500 TCC	5,500	5,500 HDT 6,000 HDS	7,000 V, 800 L 1,200 A
	Woerth	75,000	12,000 FCC	14,000	28,000 HDT 19,000 HDS	23,000 V, 5,000 A
	Oberrheinische Mineralolwerke GmbH, Karlsruhe	128,000	.....	20,500	20,500 HDT 18,100 HDS	21,000 V, 11,300 A

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing	
	Occidental Oel GmbH, Brunsbuttel	7,500	.....	.....	.....	6,700 A	
	Essen	20,000	.....	.....	.....	10,000 V,	7,500 A
	Oelwerke Julius Schindler GmbH, Hamburg	7,950	.....	.....	.....	5,400 V,	5,000 L
	Saarland-Raffinerie GmbH, Klarenthal-Saar	55,243	.....	.....	.....	.....	
	Union Rheinische Braunkohlen Kraftstoff AG, Wesseling	125,000	.....	8,400	15,000 HDT 10,000 HDS	650 P	
	Veba-Chemie AG, Gelsenkirchen-Buer	215,700	4,900 FCC	22,800	31,300 HDT 10,900 HDS	6,300 V,	3,800 A
	Wintershall AG, Lingen, Emsland	95,000	13,600 FCC	15,600	17,600 HDT 12,000 HDS	31,800 V, 3,060 C,	800 P, 4,000 A
	Mannheim	113,530	.....	12,570	3,040 HDS		
	Salzbergen	5,000	.....	.....	800 HDT	5,000 V, 1,400 A	2,000 L,
	Total	**2,986,723**	**126,550**	**363,520**	**930,190**		
GHANA	Ghananian-Italian Petroleum Co., Tema	28,000	.....	6,500	6,500 HDT	.....	
GREECE	Hellenic Aspropyrgos Refinery SA, Aspropyrgos	98,000	.....	15,000	23,000 HDT 16,000 HDS	5,000 V,	2,000 A
	Motor Oil (Hellas) Corinth Refineries SA, Agii Theodori Corinth	140,000	.....	.....	25,800 HDS	12,000 V, 2,800 A	2,500 L,
	Petrola Hellas SA, Eleusis	100,000	.....	.....	.....	2,500 V,	1,300 A
	Thessaloniki Refining Co. AE, Thessaloniki	73,000	.....	7,000	12,400 HDT 11,700 HDS	6,800 V	
	Total	**411,000**	.....	**22,000**	**88,900**		
GUAM	Guam Oil & Refining Co., Apra Heights	29,500	.....	.....	.....	.....	
GUATEMALA	Refinería Petrolera de Guatemala-California Inc., Puerto Barrios	10,800	.....	2,500	1,900 HDT 1,400 HDS	.....	
	Texas Petroleum Co., Escuintla	14,000	.....	3,000	5,000 HDT	.....	
	Total	**24,800**	.....	**5,500**	**8,300**		
HONDURAS	Refinería Texaco de Honduras SA, Puerto Cortes	14,000	.....	1,800	5,000 HDT	.....	
HUNGARY	Szazhalmbatta (south of Budapest)	46,497	.....	.....	.....	.....	
INDIA	Assam Oil Co. Ltd., Digboi	12,100	.....	.....	.....	893 L, 425 A	32 C,
	Burmah Shell Refineries Ltd., Trombay, Bombay	111,000	17,000 FCC	7,000	.....	33,000 V,	10,000 A
	Caltex Oil Refining (India) Ltd., Visakhapatnam	32,000	9,100 FCC	.....	.....	15,200 V,	2,000 A
	Cochin Refineries Ltd., Cochin	66,000	.....	6,000	32,250 HDS	8,975 V,	3,442 A
	Hindustan Petroleum Corp. Ltd., Trombay, Bombay	70,000	6,000 FCC	.....	.....	19,440 V, 6,500 A	3,400 L,
	Indian Oil Corp Ltd., Barauni	60,000	.....	.....	.....	15,000 V, 270 C	910 L,
	Baroda	82,000	.....	7,000	.....	.....	
	Gauhati	16,000	.....	.....	.....	125 C	
	Haldia	50,000	.....	4,500	4,500 HDT 13,000 HDS	.....	
	Madras Refineries Ltd. Manali	56,000	.....	2,158	4,700 HDT 24,962 HDS	22,300 V, 4,270 A	4,600 L,
	Total	**555,100**	**32,100**	**26,658**	**79,412**		
INDONESIA	Lemigas, Cepu, Central Java	4,000	.....	.....	.....	.....	
	Pertamina: Balikpapan, Kalimantan	75,000	.....	.....	.....	13,000 V	
	Dumai, Central Sumatra	100,000	.....	7,000	.....	.....	
	Pangkalan Brandan, North Sumatra	4,500	.....	.....	.....	200 L,	300 A
	Plaju, South Sumatra	111,200	.....	16,000	.....	24,000 V, 173 P,	1,100 Alky, 1,200 A
	Sungei Gerong, South Sumatra	79,000	19,500 FCC	.....	.....	87,000 V, 1,200 P	650 Alky,
	Sungei Pakning South, Central Sumatra	50,000	.....	.....	.....	.....	

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing	
	Sungei Pakning South, Central Sumatra	50,000	.....	.....	.....	.....	
	Wonokromo, East Java	4,000	.....	.....	.....	1,500 A	
	Total	**427,700**	**19,500**	**23,000**	.....		
IRAN	National Iranian Oil Co.: Abadan	470,000	36,000 FCC	23,500	25,000 HDT	96,000 V, 1,400 L,	9,300 Alky, 10,500 A
	Kermanshah	15,000	.....	2,750	2,750 HDT 3,100 HDS 19,000 DHC	.....	
	Masjid Sulaiman	64,000	.....	.....	.....	.....	
	Shiraz	40,000	.....	6,215	5,225 HDT 3,120 HDS 9,280 DHC	18,400 V,	1,000 A
	Tehran	200,000	.....	28,200	30,000 DHC	96,000 V, 7,300 A	2,100 L,
	Total	**789,000**	**36,000**	**60,665**	**97,475**		
IRAQ	Oil Refineries Administration: Basra	70,000	.....	.....	.....	.....	
	Daura	71,000	.....	5,000 C	13,000 HDT	8,160 L,	1,815 A
	K3-Haditha	7,000	.....	.....	.....	.....	
	Khanaqin	12,000	.....	.....	.....	.....	
	Mufthia	4,500	.....	.....	.....	.....	
	Qaiyarah, Mosul	2,000	.....	.....	.....	970 A	
	Iraqi Company for Oil Operations, Kirkuk	2,000	.....	.....	.....	.....	
	Total	**168,500**	.....	**5,000**	**13,000**		
IRELAND	Irish Refining Co. Ltd., Whitegate	56,000	.....	13,200	.....	.....	
ISRAEL	Oil Refineries Ltd., Ashdod	66,000	.....	10,000	11,000 HDT 25,000 HDS	36,000 V	
	Haifa	135,000	.....	14,500	15,500 HDT 25,000 HDS	28,000 V, 3,600 A	800 L,
	Total	**201,000**	.....	**24,500**	**76,500**		
ITALY	Amoco Italia, Cremona	100,000	.....	10,000	15,600 HDT 7,100 HDS	12 A	
	ANIC SpA, Gela	90,000	21,000 FCC	12,000	16,000 HDT 25,000 HDS	30,000 V, 3,000 C	9,500 A
	Anonima Petroli Italiana, Falconara Marittima	81,000	.....	10,000	10,500 HDT 12,000 HDS	13,000 V,	3,000 A
	ERG—Raffineria Edoardo Garrone, Genoa, San Quirico	147,000	.....	14,270	21,400 HDS	.....	
	Esso Italiana, Augusta, Siracusa	210,000	40,000 FCC	15,300	23,500 HDT 25,000 HDS	189,200 V, 5,200 L,	7,700 Alky, 6,700 A
	Gaeta Industrie Petroli SpA, Gaeta	39,900	27,000 FCC	11,250	10,800 HDT	225 L	
	Gulf Italiana SpA, Bertonico	80,000	.....	12,350	29,450 HDS	4,370 A	
	Industrie Chimiche Italiane del Petrolio SpA (Icip), Mantova-Frassino	65,000	.....	9,700	14,600 HDT 5,000 H	7,500 V,	5,000 A
	Industria Italiana Petroli SpA, La Spezia	103,000	.....	21,100	24,600 HDT 13,000 HDS	10,300 V,	3,100 A
	Rho	80,000	12,300 TCC	16,300	21,100 HDT 13,400 HDS	29,000 V, 1,560 L,	1,720 Alky, 4,650 A
	Taranto	88,000	.....	16,700	23,500 HDT 13,000 HDS	13,300 V,	1,900 A
	Industria Leganti Stradali del Affini (Ilsea), Como	7,885	.....	1,350	.....	.....	
	Industria Raffinazione Olii Minerali (Irom), Porto Marghera	110,000	.....	18,000	18,000 HDT 18,500 HDS	.....	
	Iplom—Raffineria Petroli SpA, Sarissola	31,200	.....	.....	.....	5,700 V,	2,850 A
	Liquichimica SpA, Milan	12,000	.....	1,000	.....	.....	
	Lombarda Petroli, Villasanta	23,500	.....	3,600	4,800 HDT	.....	
	Mediterranea SpA, Milazzo, Sicily	505,000	45,000 FCC	10,000	10,000 HDT 20,000 HDS	80,000 V,	5,000 Alky
	Mobil Oil Italiana SpA, Naples	130,000	14,000 TCC	12,500	12,500 HDT 13,500 HDS	7,500 V, 750 L,	3,500 Alky, 650 A

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing	
	Montedison, Brindisi	30,000	.....	.....	.....	.....	
	Priolo	300,000	25,000 FCC	9,500	9,500 HDT 17,000 HDS	40,000 V	
	Raffineria Dellepiane SpA, San Quirico, Genoa	20,000	.....	.....	.....	12,200 A	
	Raffineria del Po SpA, Sannazzaro d'Burgondi	122,000	22,000 FCC	24,000	24,000 HDT 12,000 HDS	50,000 V,	3,600 Alky
	Raffineria di Roma SpA, Rome	80,300	.....	12,300	18,900 HDT 8,500 HDS	9,300 V,	3,100 A
	Raffineria Olii Lubricanti (ROL), Viguzzola	1,425	.....	.....	.....	.....	
	Sanquirico SpA, Genova San Quirico	32,500	.....	1,500	11,500 HDS	.....	
	Saras—Raffinerie Sarde, Sarroch, Cagliari	360,000	50,000 FCC	30,000	30,000 HDT 60,000 HDS	5,000 Alky	
	Sarom Raffinazione SpA, Ravenna	332,000	.....	14,000	14,000 HDT	.....	
	Sarpom, Novara	235,000	12,200 FCC	27,200	107,300 HDT	22,800 V. 2,800 A	1,600 P,
	Societa Italiana Resine SpA, (SIR), Porto Torres, Sardinia	118,750	.....	11,700	14,400 HDS	.....	
	Societa Petrolifera Italiana, Arcola, La Spezia	18,400	.....	.....	.....	.....	
	Stanic SpA, Bari	90,000	.....	10,000	10,000 HDT 18,000 HDS	17,000 V	
	Leghorn, Livorno	125,000	.....	24,000	24,000 HDT 16,000 HDS	20,000 V,	7,000 L
	Total Italiana—Aquila, Trieste	111,000	.....	17,000	23,500 HDT 15,000 HDS	11,000 V, 4,700 A	1,200 L,
	Volpiano Refinery, Volpiano	72,800	.....	10,750	18,200 HDT 10,920 HDS	.....	
	Total	**3,952,660**	**268,500**	**387,320**	**884,570**		
IVORY COAST	Societe Ivoirienne de Raffinage, Abidjan	42,940	.....	4,420	6,465 HDT 3,345 HDS	.....	
	Total	**42,940**		**4,420**	**9,810**		
JAMAICA	Esso West Indies Ltd., Kingston	32,600		3,000	18,900 HDS	1,500 V,	670 A
JAPAN	Asia Kyoseki Co. Ltd., Sakaide, Kagawa	100,000	9,000 FCC	.....	12,600 HDT 13,500 HDS	36,000 V	
	Asia Oil Co., Hakodate	23,750	.....	1,170	2,700 HDT	.....	
	Yokohama	95,000	.....	12,600	11,700 HDT 6,300 DHC	.....	
	Daikyo Co. Ltd., Yokkaichi-City, Mie.	195,000	23,500 FCC	9,000	6,500 HDT 77,000 HDS	83,500 V, 7,878 A	4,200 L,
	Fuji Kosan Co. Ltd., Kainan	77,600	.....	.....	9,000 HDT 20,000 HDS	44,000 V, 17,500 A	13,600 L,
	Fuji Oil Co. Ltd., Sodegaura, Chiba	189,000	4,500 FCC	13,500	26,900 HDT 44,500 HDS	34,200 V	
	General Sekiyu Seisei KK, Kawasaki	52,300	.....	5,700	16,150 HDT	.....	
	Sakai	114,000	.....	23,800	72,200 HDT 29,450 HDS	50,400 V	
	Idemitsu Kosan Ltd., Chiba	310,000	34,000 FCC	35,000	43,000 HDT 108,000 HDS	60,000 V,	10,500 L
	Hokkaido	70,000	.....	11,000	13,000 HDT 17,000 HDS	.....	
	Hyogo	110,000	.....	15,000	22,000 HDT 65,000 HDS	.....	
	Tokuyama	140,000	15,000 FCC	15,000	15,000 HDT 30,000 HDS	20,000 V,	976 A
	Kansai Oil Co. Inc., Sakai City	110,000	.....	5,000	20,000 HDT 20,000 HDS	34,000 V	
	Kashima Oil Co., Kashima	162,000	12,600 FCC	5,400	92,700 HDS	60,300 V	
	Koa Oil Co. Ltd., Marifu	141,550	12,600 FCC	9,900	12,600 HDT 9,000 HDS 2,250 DHC	45,000 V, 270 A	225 C,
	Osaka	76,000	14,400 FCC	8,100	6,300 HDT 10,800 HDS	49,500 V	
	Kyokuto Petroleum Industries Ltd., Chiba	97,000	.....	7,700	8,000 HDT 6,700 HDS	67,000 V,	1,700 A
	Kyushu Oil Co. Ltd., Oita	170,000	9,000 FCC	9,000	67,000 HDS	91,000 V	

Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
Maruzen Oil Co. Ltd., Chiba	195,000	20,000 FCC	25,000	57,000 HDT 35,000 HDS	65,000 V, 10,000 A
Matsuyama	50,000	.....	3,500	19,000 HDT	.....
Shimotsu	37,500	6,500 FCC	7,000	7,000 HDT	14,460 V, 1,500 L, 4,000 A
Mitsubishi Oil Co., Kawasaki	105,000	.....	12,000	10,000 HDT 12,500 HDS	5,800 V, 18,000 A
Mizushima	220,000	20,000 FCC	33,700	48,600 HDT 73,000 HDS 45,000 RHD	97,000 V, 2,000 P, 2,770 L, 29,700 A
Nichimo Sekiyu Seisei KK, Kawasaki	96,000	.....	10,400	7,200 HDT 40,500 HDS	19,800 V
Nihonkai Oil Co. Ltd., Toyama City	60,000	.....	.....	.....	.....
Nippon Mining Co. Ltd., Funakawa	13,370	.....	.....	.....	1,830 V, 840 L, 700 A
Mizushima	222,310	18,360 FCC	21,740	2,840 DHC 4,520 HDT 64,560 HDS 27,190 RHD	32,550 V, 3,450 L, 5,810 A
Nippon Oil Co. Ltd., Niigata	26,000	.....	5,100	18,500 HDT	2,000 V, 1,000 L, 425 A
Nippon Petroleum Refining Co. Ltd., Kudamatsu	42,000	.....	5,200	8,100 HDT	4,500 V, 1,610 A
Muroran	110,000	10,000 FCC	18,000	66,700 HDT 40,000 HDS	50,000 V
Negishi	330,000	20,000 FCC	31,000	97,900 HDT 68,000 HDS	143,000 V
Yokohama	70,000	5,600 FCC	3,300	10,600 HDT	25,000 V, 1,050 A
Seibu Seikyu KK, Onoda	100,000	.....	8,000	37,000 HDT 9,000 HDS	.....
Showa Sekiyu KK, Kawasaki	137,000	.....	20,000	30,000 HDT 42,000 HDS	.....
Niigata	37,000	.....	4,000	11,000 HDT 2,000 HDS	.....
Showa Yokkaichi Sekiyu KK, Yokkaichi	240,000	15,000	32,000	75,000 HDT 85,000 HDS	.....
Taiyo Oil Co. Ltd., Kikuma	56,050	.....	4,500	.....	3,600 V
Teiseki Topping Plant Co., Kubiki	4,410	.....	.....	.....	.....
Tao Nenryo Kogyo KK, Kawasaki	190,000	36,000 FCC	14,400	137,700 HDS	110,700 V, 1,340 A
Shimizu	41,300	.....	4,140	13,140 HDS	3,420 V, 255 L, 980 A
Wakayama	177,700	20,970 FCC	32,400	3,900 HDT 104,400 HDS	71,550 V, 1,130 Alky, 5,410 L, 2,260 A
Toa Oil Co. Ltd., Chita	100,000	.....	22,000	89,000 HDT 37,000 HDS	46,000 V
Kawasaki	100,000	.....	11,000	33,000 HDT	.....
Toho Oil Co. Ltd., Yanohama, Owase City	40,000	.....	.....	.....	.....
Tohoku Oil Co., Sendai City	100,000	.....	13,000	69,000 HDS	60,000 V, 5,000 A
Total	**5,133,840**	**307,030**	**527,550**	**2,458,700**	
JORDAN					
Jordan Petroleum Refinery Co. Ltd., Zerqa	21,223	4,403 FCC	.....	.....	6,631 V, 615 A
KENYA					
East African Oil Refineries Ltd., Mombasa	48,000	.....	4,000	16,000 HDT	.....
KHMER REPUBLIC					
Societe Khmere de Raffinage de Petrole, Krung Kompong Som	12,540	.....	1,800	5,850 HDT	.....
KOREA					
Honam Oil Refinery Co. Ltd., Yosu	160,000	.....	7,100	11,400 HDT	2,100 A
Korea Oil Corp., Ulsan	210,000	.....	17,000	23,000 HDT 4,000 HDS	3,600 V, 2,100 A
Kyung In Energy Co. Ltd., Inchon	55,000	.....	3,600	7,000 HDT	.....
Total	**425,000**	.....	**27,700**	**45,400**	
KUWAIT					
American Independent Oil Co., Mena Abdullah	132,000	.....	.....	32,000 HDS	112,000 V
Arabian Oil Ltd. (Japan), Ras Al Khafji	30,000	.....	.....	.....	.....

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	Getty Oil Co., Mina Saud	50,000	.....	.....	.....	5,000 C
	Kuwait National Petroleum Co., Shuaiba	134,000	.....	14,000	20,700 DHC 48,600 RHC 85,500 HDT 10,500 HDS	67,000 V
	Kuwait Oil Co. Ltd., Mina al Ahmadi	300,000	.....	5,600	.....	1,250 A
	Total	**646,000**	.....	**19,600**	**197,300**	
LEBANON	Iraq Petroleum Co. Ltd., Tripoli	36,000	7,250 FCC	4,400	6,730 HDT	12,730 V, 900 A
	Mediterranean Refining Co., Sidon	17,500	.....	2,900	2,900 HDT	.....
	Total	**53,500**	**7,250**	**7,300**	**9,630**	
LIBERIA	Liberia Refining Co., Monrovia	11,000	.....	2,000	1,000 HDT	500 A
LIBYA	American Overseas Petroleum Ltd., Nafoora	1,800	.....	.....	.....	.....
	Esso Standard Libya, Marsa El-Brega	8,000	.....	1,500	3,900 HDT	.....
	Mobil Oil Corp., Amal	1,800	.....	.....	.....	.....
	National Oil Co., Intisar	1,800	.....	.....	.....	.....
	Zavia	60,000	.....	6,500	17,720 HDS	.....
	Zeutina	3,000	.....	.....	.....	300 A
	Total	**76,400**		**8,000**	**21,620**	
MALAGASY	Societe Malagache de Raffinage, Tamatave	15,000		2,200	5,000 HDT	
MALAYSIA	Esso Malaysia Berhad, Port Dickson	22,200	.....	3,700	7,800 HDT 6,400 HDS	2,800 V, 1,100 A
	Shell Refining Co., Berhad, Port Dickson	31,000	.....	2,000	8,000 HDT 4,000 HDS	.....
	Total	**53,200**		**5,700**	**26,200**	
MARTINIQUE	Societe Anonyme Raffinerie des Antilles, Fort de France	10,400	.....	2,500	3,500 HDT 3,300 HDS	.....
	Total	**10,400**		**2,500**	**6,800**	
MEXICO	Petróleos Mexicanos:					
	Azcapotzalco	100,000	23,000 FCC	.....	26,000 HDS	50,000 V, 3,000 Alky, 650 P
	Cuidad Madero	169,000	23,000 FCC	15,000	18,000 HDT 15,000 HDS	50,000 V, 3,000 Alky, 650 P, 400 C, 15,000 A
	Minatitlán	233,500	24,000 FCC 21,000 TCC	12,000	21,000 HDT 29,000 HDS	32,000 V, 600 P, 3,000 L
	Poza Rica	27,000	.....	.....	5,000 HDT	.....
	Reynosa	20,500	.....	.....	.....	.....
	Salamanca	210,000	18,000 TCC	8,300	18,500 RHC 8,300 HDT 28,000 HDS	51,200 V, 7,100 L, 3,000 A
	Total	**760,000**	**109,000**	**35,200**	**168,800**	
MOROCCO	Societe Cherifienne des Petroles, Sidi-Kacem	8,550	3,600 TCC	1,080	1,080 HDT	.....
	Societe Am. Marocaine Italienne de Raffinage (Samir), Mohammedia	50,000	.....	6,500	6,500 HDT 2,200 HDS	.....
	Total	**58,550**	**3,660**	**7,580**	**9,780**	
MOZAMBIQUE	Sociedade Nacional de Refinacao de Petróleos, Salazar	17,000		2,500	2,500 HDT	5,000 V, 1,000 A
NETHERLANDS	BP Raffinaderij Nederland NV, Rotterdam	490,200	.....	19,800	158,400 HDT 18,000 HDS	.....
	Chevron Petroleum Maatschappij, Pernis	300,000	.....	39,000	39,000 HDT 38,000 HDT	25,000 V, 5,000 A
	Esso Nederland BV, Rotterdam	325,000	.....	48,000	80,000 HDT 62,000 HDS	

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	Gulf Oil Raffinaderij NV, Rozenburg	94,000	.....	3,000	29,500 HDS	31,000 V, 3,300 L, 2,100 A
	Mobil Oil BV, Amsterdam	125,000	.....	24,000	36,000 HDT 29,000 HDS	.....
	NV Smid & Hollander, Amsterdam	6,500	.....	.....	.....	4,500 A
	Shell Nederland Raffinaderij NV, Pernis	500,000	75,000 FCC	26,000	130,000 HDT 55,000 HDS	.....
	Total	**1,840,700**	**75,000**	**164,800**	**674,900**	
NETHERLANDS ANTILLES	Lago Oil & Transport Co. Ltd., Aruba	440,000	.....	.....	123,000 HDT 115,000 HDS	230,000 V, 1,000 Alky
	Shell Curacao NV, Emmastad	460,000	35,000 FCC	15,000	100,000 HDT 25,000 HDS	.....
	Total	**900,000**	**35,000**	**15,000**	**363,000**	
NEW ZEALAND	New Zealand Refining Co. Ltd., Marsden Point, Whangarei	54,000	.....	18,000	32,000 DHT 5,000 DHD	.....
	Total	**54,000**	.....	**18,000**	**37,000**	
NICARAGUA	Esso Standard Oil SA Ltd., Managua	13,200	.....	2,600	10,600 HDS	1,900 V, 732 A
NIGERIA	Nigerian Petroleum Refining Co. Ltd., Alesa-Eleme, Port Harcourt	60,000	.....	6,500	.....	.....
NORWAY	A/S Norske Esso, Slagen, Tonsberg	110,000	.....	8,500	18,000 HDT 8,100 HDS	.....
	Valloy, Tonsberg	3,000	.....	.....	700 HDT	2,100 V, 700 L, 1,300 A
	A/S Norske Shell, Sola	55,000	.....	10,000	14,000 HDT 8,000 HDS	
	Total	**168,000**	.....	**18,500**	**48,800**	
OKINAWA	Nansei Sekiyu, Nishihara	93,000	.....	10,000	36,300 HDT	.....
	Okinawa Sekiyu Seisei Co. Ltd., Heianza Island	94,000	.....	.....	69,200 HDS	.....
	Toyo Petroleum Refining Co. Ltd., Nakagusuku	25,000	.....	2,000	2,000 HDS	
	Total	**212,000**	.....	**12,000**	**107,500**	
PAKISTAN	Attock Oil Co. Ltd., Rawalpindi	11,640	.....	.....	.....	1,200 V, 350 L, 13,000 A
	National Refinery Ltd., Korangi	12,570	.....	.....	1,635 HDT	5,650 V, 1,635 L, 1,800 A
	Pakistan Refinery Ltd., Karachi	55,000	.....	2,500	21,000 HDT	.....
	Total	**79,210**	.....	**2,500**	**22,635**	
PANAMA	Refinería Panamá SA, Las Minas, Colon	100,000	.....	7,500	30,000 HDT	14,000 V, 5,000 A
PARAGUAY	Refinería Paraguaya SA, Villa Elisa	5,000	.....	.....	.....	210 A
PERU	Petróleos del Perú, Conchán	8,500	.....	.....	.....	3,500 V, 1,000 A
	Iquitos	1,400	.....	.....	.....	.....
	La Pampilla	37,000	9,360 FCC	1,760	2,700 HDT	.....
	Pucallpa	2,700	.....	.....	.....	.....
	Talara	80,000	16,600 FCC	.....	.....	20,000 V, 1,000 L 2,000 A
	Total	**129,600**	**25,960**	**1,760**	**2,700**	
PHILIPPINES	Bataan Refining Corp., Limay	108,000	13,200 TCC	15,300	47,100 HDT 16,400 HDS	17,500 V, 4,300 A
	Caltex (Philippines) Inc., Batangas	70,000	11,400 FCC	8,600	15,200 HDT 15,200 HDS	18,100 V, 900 P
	Filoil Refinery Corp., Rosario	28,000	.....	3,060	7,060 HDS	8,500 V, 773 A

	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	Shell Philippines Inc., Batangas	68,000	.....	8,000	12,000 DHT 6,000 HDS	.....
	Total	**274,000**	**24,600**	**34,960**	**118,960**	
POLAND	Glinik Mariampolski	2,470	.....	.....	.....	.....
	Jasto	2,660	.....	.....	.....	.....
	Jealicze	3,880	.....	.....	.....	.....
	L. Warynski, Czechowice	13,300	.....	.....	.....	.....
	Mazovia, Plock	114,000	13,500	10,800	16,200 HDS	54,000 V, 9,000 C, 2,520 L, 5,400 A
	Trzebinia	9,500	.....	.....	.....	.....
	Total	**145,810**	**13,500**	**10,800**	**16,200**	
PORTUGAL	Sacor, Boa Nova, Porto	70,000	.....	15,600	25,800 HDT 9,400 HDS	10,000 V, 2,000 L, 700 A
	Cabo Ruivo, Lisbon	40,000	12,000 TCC	.....	5,500 HDS	320 A
	Total	**110,000**	**12,000**	**15,600**	**40,700**	
PUERTO RICO	Caribbean Gulf Refining Corp., Bayamón	37,800	7,800 FCC	5,500	16,100 HDS	14,200 V, 400 P, 1,000 A
	Commonwealth Oil Refining Co. Inc., Peñuelas	161,000	40,000 HF	70,000	88,000 HDS	65,000 V, 6,000 Alky, 2,400 P
	Yabucoa Sun Oil Co., Yabucoa	85,000	.....	.....	12,000 HDT 8,300 HDS	35,000 V, 5,400 L
	Total	**283,800**	**47,800**	**75,500**	**124,400**	
QATAR	National Oil Distribution Co., Umm Said	6,800	.....	1,300	2,200 HDT 700 HDS	.....
	Total	**6,800**		**1,300**	**2,900**	
RHODESIA	Central African Petroleum Refineries (Pvt.) Ltd., Umtali	20,000	(Not in operation; not included in total)			
RUMANIA	Brazi	76,000	.....	.....	2,025 DHT	.....
	Pitesti	57,000	.....	.....	86,400 DHT	15,570 L
	Sulpacu Barcau (Crisana oil field)	5,700	.....	.....	.....	.....
	Total crude capacity for all refineries: 320,000 b/cd. Other refineries at Borzetsi, Brazov, Cimpina, Darmanesti, G. Gheorghiu Dej—Onesti, Ploiesti, Telaejen.					
SAUDI ARABIA	Arabian American Oil Co., Ras Tanura	565,000	.....	12,500	22,800 HDS	100,000 V, 4,300 A
	Jeddah Oil Refinery Co., Jeddah	31,120	8,210 FCC	2,640	9,900 HDS	12,590 V, 250 A
	Riyadh Oil Refinery, Riyadh	14,180	.....	5,350	5,970 DHC 2,280 HDT	5,670 V, 550 A
	Total	**610,300**	**8,210**	**20,490**	**40,950**	
SENEGAL	Societe Africaine de Raffinage, Dakar	15,000	.....	1,320	.....	.....
SIERRA LEONE	Sierra Leone Petroleum Refining Co. Ltd., Freetown	10,000	.....	.....	.....	
SINGAPORE	BP Refinery Singapore Pte. Ltd., Pasir Panjang	25,650	.....	.....	.....	.....
	Esso Singapore Private Ltd., Pulau Ayer Chawan	230,000	.....	6,000	41,500 HDT	47,000 V, 5,000 L, 3,300 A
	Mobil Oil Malaya Sendirian Berhad, Jurong	175,000	.....	4,000	4,000 HDT 32,000 HDS	.....
	Shell Eastern Petroleum Ltd., Pulau Bukom	350,000	.....	10,000	90,000 HDT 20,000 HDS	.....
	Singapore Petroleum Co. Private Ltd., Pulau Merlimau	65,000	.....	.....	41,010 HDS	29,790 V, 1,000 A
	Total	**845,650**		**20,000**	**228,510**	
SOUTH AFRICA	Caltex Oil SA (Pty) Ltd., Cape Town	46,000	10,400 FCC	.....	30,500 HDT	21,000 V, 950 A
	Mobil Oil Refining Co. Southern Africa Pty. Ltd., Durban	100,000	14,500 FCC	16,000	18,500 HDT 22,000 HDS	28,000 V, 300 P, 2,000 A

WORLDWIDE REFINING	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
	Durban*	.....	.....	.....	.....	3,000 L
	National Petroleum Refiners of South Africa (Pty) Ltd., Sasolburg	63,000	15,500 FCC	10,700	9,800 DHC 8,100 RHC 14,500 HDT	22,400 V, 4,400 Alky, 2,900 A
	Satmar Ltd., Boksburg North	3,100	.....	.....	.....	1,200 V, 600 A
	Shell & BP South African Petroleum Refineries Pty. Ltd., Durban	185,000	17,000 FCC	30,000	36,000 HDT 55,000 HDS	.....
	Total	**397,100**	**57,400**	**56,700**	**194,400**	
*South African Oil Refining Co. is owner; Mobil is operator.						
SOUTH YEMEN	BP Refinery (Aden) Ltd., Little Aden	169,100	.....	9,000	2,700 HDS	.....
SPAIN	Asfaltos Españoles SA (Asesa), Tarragona	18,000	.....	.....	.....	15,000 V, 11,700 A
	Cia. Española de Petróleos (Cepsa), San Roque, Cádiz	160,000	.....	27,000	27,000 HDT 9,000 DHC 8,000 HDS	.....
	Santa Cruz de Tenerife, Canary Islands	175,000	.....	16,500	10,800 HDS	10,620 V
	Cia. Ibérica Refinadora de Petróleos SA (Petroliber), La Coruña	120,000	.....	16,500	16,500 HDT 15,000 HDS	.....
	Empresa Nacional Calvo Sotelo, Puertollano	152,000	.....	16,000	1,900 HDT 30,000 HDS	12,000 V, 3,800 L
	Esso Petróleos Españoles SA, Castellón de la Plana	80,000	.....	7,600	14,000 HDT 28,000 HDS	.....
	Refinería de Petróleos de Escombreras SA, Cartagena, Murcia	220,000	.....	18,000	20,000 HDT 53,000 HDS	20,400 V, 3,000 L
	Refinería de Petróleos del Norte SA (Petronor), Somorrostro, Bilbao	160,000	.....	21,000	48,000 HDS	.....
	Union Explosivos Rio Tinto SA Huelva	80,000	.....	14,100	24,900 HDT	23,200 V, 1,900 L, 6,900 A
	Total	**1,165,000**	.....	**136,700**	**306,100**	
SRI LANKA	Ceylon Petroleum Corp., Sapugaskanda	34,400	.....	3,400	13,800 HDT	1,700 V, 850 A 1,900 HDS
	Total	**34,400**	.....	**3,400**	**15,700**	
SUDAN	Shell & BP Sudan Ltd., Port Sudan	22,000	.....	2,000	9,000 HDT	.....
SWEDEN	AB Nynas-Petroleum, Gothenburg	5,700	.....	.....	.....	4,500 V, 900 A
	Malmo	3,800	.....	.....	.....	.....
	Nynasham	28,500	.....	6,300	.....	4,500 V
	BP Raffinaderi (Goteborg) AB, Gothenburg	110,000	.....	24,000	44,000 HDT	.....
	Koppartrans Olje AB (Shell), Gothenburg	100,000	.....	17,000	27,000 HDT 16,000 HDS	.....
	Total	**248,000**	.....	**47,300**	**87,000**	
SWITZERLAND	Raffinerie de Cressier SA, Cressier	65,000	.....	13,000	22,000 HDT 8,000 HDS	.....
	Raffinerie du Sud-Ouest SA, Collombey	73,000	.....	10,600	17,300 HDT	.....
	Total	**138,000**	.....	**23,600**	**47,300**	
SYRIA	Homs Petroleum Refining Co., Homs	49,690	.....	2,620	.....	3,110 V, 1,920 A
TANZANIA	Tanzanian and Italian Petroleum Refining (Tiper) Co. Ltd., Dar es Salaam	16,100	.....	4,200	5,000 HDS	.....


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	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
THAILAND	Defense Energy Department, Bangkok	65,000	.....	10,000	18,000 HDS	400 A
	Fang refinery, Chieng Mai	1,200	.....	.....	.....	1,000 V 200 L
	Esso Standard Thailand Ltd., Sriracha	35,000	.....	4,900	17,000 HDT	5,700 V, 2,600 A
	Thai Oil Refinery Co. Ltd., Sriracha, Cholburi	65,000	7,000 FCC	9,000	32,000 HDT 10,000 HDS	14,500 V, 1,400 A
	Total	**166,200**	**7,000**	**23,900**	**77,000**	
TRINIDAD	Texaco Trinidad Inc., Pointe-a-Pierre	361,000	26,500 FCC	20,000	45,000 HDT 80,000 HDS	187,000 V, 2,200 Alky, 350 P, 4,000 L
	Trinidad and Tobago Oil Co. Ltd., Point Fortin	100,000	.....	7,000	22,000 HDT	7,000 V
	Total	**461,000**	**26,500**	**27,000**	**147,000**	
TUNISIA	Societe Tuniso Italienne de Raffinage (Stir), Zarzouna, Bizerte	25,000	.....	3,300	.....	.....
TURKEY	Anadolu Tasfiyehanesi AS, Mersin	90,000	.....	10,500	22,000 HDT 11,500 HDS	.....
	Istanbul Petrol Rafinerisi AS, Izmit	140,000	25,000 FCC	11,500	14,800 HDT 28,500 HDS	22,000 A
	Turkish Petroleum Co., Aliaga-Izmir	62,700	.....	6,490	7,500 HDT	36,700 V, 3,050 L
	Batman	22,800	3,600 TCC	1,170	.....	3,120 A
	Total	**315,500**	**28,600**	**29,660**	**84,300**	
UNITED KINGDOM	Berry Wiggins & Co. Ltd., Kingsnorth-on-the-Medway, Hoo, Kent	2,000	.....	.....	.....	5,000 V
	BP Refinery (Kent), Isle of Grain	229,900	16,200 FCC 18,000	40,050	14,750 HDS	61,650 V, 2,790 Alky, 3,600 L
	Burmah-Castrol Co., Ellesmere Port	25,280	.....	5,060	6,430 HDT 6,430 HDS	14,370 V,, 6,150 L,
	Conoco Ltd., South Killingholme, South Humberside	87,500	.....	30,000	106,000 HDS	1,110 C
	Esso Petroleum Co. Ltd., Fawley, Hampshire	391,000	81,000 FCC	50,500	33,300 HDT 66,500 HDS	62,000 V, 7,900 P, 7,100 L, 8,300 A
	Lindsey Oil Refinery Ltd., Killingholme, Grimsby	189,000	.....	27,400	39,600 HDT 30,500 HDS	14,200 V, 7,000 A
	Mobil Oil Co. Ltd., Coryton, Essex	175,000	9,500 TCC	33,000	42,000 HDT 33,000 HDS	43,000 V, 5,500 L, 1,700 A
	Phillips Imperial Petroleum Ltd., North Tees	100,000	.....	.....	.....	.....
	Philmac Oils Ltd., Eastham, Cheshire	13,000	.....	.....	.....	9,300 V, 7,300 A
	Shell U.K. Ltd., Heysham	39,000	.....	.....	.....	.....
	Shell Haven	200,000	.....	32,000	63,000 HDT 16,000 HDS	.....
	Stanlow	215,000	50,000	53,000	40,000 HDT 12,000 HDS	.....
	Teesport	125,000	.....	15,000	31,000 HDT 14,000 HDS	.....
	Total England	**1,791,680**	**174,700**	**286,010**	**554,510**	
	North Ireland					
	BP Refinery (Northern Ireland) Ltd., Belfast	32,300	.....	5,850	10,150 HDT 3,350 HDS	.....
	Total Ireland	**32,300**	.....	**5,850**	**13,500**	
	Scotland					
	BP Refinery (Grangemouth), Ltd., Grangemouth	186,200	16,200 FCC	21,600	27,000 RHC 54,000 HDT	76,500 V
	Shell U.K. Ltd., Ardrossan	6,000	.....	.....	.....	.....
	Total Scotland	**192,200**	**16,200**	**21,600**	**81,000**	
	Wales					
	BP Refinery Ltd., Llandarcy, Neath	174,800	14,400 FCC	13,050	6,300 HDT 13,950 HDS	51,100 V, 5,400 L, 800 A
	Esso Petroleum Co. Ltd., Milford Haven, Pembrokeshire	309,000	.....	43,000	32,000 HDT 56,000 HDS	.....
	Gulf Oil Refining Ltd., Milford Haven	103,000	.....	23,000	46,500 HDS	.....
	Texaco Ltd., Pembroke	180,000	.....	17,500	51,000 HDT	10,000 V
	Total Wales	**766,800**	**14,400**	**96,550**	**205,750**	
	TOTAL UNITED KINGDOM	**2,782,980**	**205,300**	**410,010**	**854,760**	

	Company and refinery location	Crude	Catalytic cracking	Catalytic reforming	Hydro-processing	Other processing
URUGUAY	Administración Nacional de Combustibles, Alcohol y Portland, La Teja, Montevideo	43,000	4,000 FCC	3,000	8,000 HDS	12,000 V, 400 C, 3,100 A
VENEZUELA	Chevron Oil Co. of Venezuela, Bajo Grande	61,500	.....	.....	.....	15,300 V, 7,000 A
	Cia. Shell de Venezuela, Cardón	348,000	32,000 FCC	.....	44,000 HDT 32,000 HDS	.....
	San Lorenzo	32,000	.....	.....	.....	.....
	Corporación Venezolana del Petróleo, Morón	30,000	.....	1,600	.....	.....
	Creole Petroleum Corp., Amuay	630,000	.....	13,000	17,000 HDT 230,000 HDS	345,000 V, 2,500 L, 35,000 A
	Quiriquire	110,000	.....	.....	.....	.....
	Mobil Oil de Venezuela, El Palito	102,000	.....	6,000	6,000 HDT	.....
	Phillips Petroleum Co., San Roque	5,100	.....	.....	.....	.....
	Sinclair-Venezuelan Oil Co., El Chaure	40,000	.....	.....	.....	.....
	El Toreño	5,400	.....	.....	.....	.....
	Texas Petroleum Co., Tucupita	10,000	.....	.....	.....	.....
	Venezuela Gulf Refining Co., Puerto la Cruz	157,715	14,589 FCC	.....	.....	2,268 Alky
	Total	**1,531,715**	**48,589**	**20,600**	**329,000**	
VIRGIN ISLANDS	Hess Oil Virgin Islands Corp., St. Croix	590,000	.....	.....	93,600 HDS	105,000 V
YUGOSLAVIA	Bosanski Brod	53,982	.....	5,861	945 HC	1,200 V, 666 A
	Lendava	10,447	.....	.....	.....	.....
	Novi Sad	12,500	.....	.....	.....	.....
	Pancevo	29,878	.....	3,996	8,793 HDS	.....
	Rijeka	96,135	.....	13,720	4,662 HDS	4,000 L, 866 A
	Sisak	76,627	2,997	2,664	2,464 HDS	1,000 A
ZAIRE	Sozir—Société Zairo-Italienne de Raffinage, Muanda	16,150	.....	2,700	4,500 HDS	.....
ZAMBIA	Indeni Petroleum Refinery Co. Ltd., Ndola	24,620	.....	5,600	9,000 HDS	2,400 V, 800 A

Worldwide production

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
ABU DHABI	Asab, 1965		17				450,000	83,400,000	40.0
	Abu al Bu Khoosh, 1973		(Started production at 20,000 b/d in Aug., 1974 from 2 wells)						
	Bab (Murban), 1960	8,500	22				110,000	1,428,300,000	38.0-40
	Bu Hasa, 1962	8,500	41				679,820		
	El Bunduq, 1965*	8,500				15			
	Mubarras, 1971*	11,000	20			12	22,000	5,200,000	38.1
	Umm Shaif, 1958*	9,150	27			10	206,446	451,262,526	37.7
	Zakum, 1964*	9,100	33			8	284,531	531,691,675	40.1
	Total		**160**			**35**	**1,752,797**	**2,499,854,201**	
*Offshore. †To go on production in April, 1975.									
AFGHANISTAN*	Angot, 1950	2,100							51
	Hodja-Gugerdeg, 1961	4,170-4,700							51
	Khulaja-Borhan, 1964								28
	Sar-i-pul, 1959	5,000	13	2	...	...	150†	138,900†	51
	Yatim Tagh, 1950	1,290-4,019							
	Total		**13**	**2**	...	...	**150**	**138,900**	
*Data estimated. + Condensate. Note: Gas production estimated 250 MMcfd.									
ALGERIA	**Alrep**								
	Haoud Berkaoui, 1965	10,300	9	...	...	2	32,235	85,432,775	46.0
	Hassi Messaoud North, 1956	11,000	108	...	...	15	222,000	790,867,000	49.0
	C.P.A.								
	Gassi Touil and E., 1966	6,930	58	...	...	18	69,780	29,912,000	44.0
	Creps								
	Acheb, 1963	7,382	7	...	...	2	5,484	12,367,660	43.0
	Edjeleh, 1956	1,900- 3,000	40	...	90	62	19,775	154,352,000	35.0

Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
El Adeb Larache, 1958	4,100	21	...	...	16	9,800	36,027,000	44.5
Hassi Mazoula, 1962	4,231- 4,400	1	9	...	7	8,844	15,002,000	41.0
Ohanet, S. (& N.), 1960	7,920	21	...	...	16	1,795	72,445,175	44.0
Tiguentourine, 1956	3,526	43	...	...	36	7,030	41,067,950	45.0
Tin Fouye, 1961	1,300- 2,040	35	9	...	5	7,562	139,359,000	39.0-41.0
Zarzaitaine, 1958	4,600	25	...	45	31	80,600	488,463,000	42.0
Petral								
Askarene, 1962	8,250	...	9	...	...	574	15,620,500	44.0
Guelta, 1962	7,810	4	...	...	3	555	16,199,575	44.0
Repal								
Hassi Messaoud, S., 1956	11,000	145	...	...	16	338,077	1,071,398,000	49.0
Nezla, 1965	8,500	2	...	...	3	2,359	18,861,000	48.0
Sepal								
El Gassi El Agreb, 1959	9,300	22	...	...	21	38,516	160,938,340	47.0
Sonatrach								
Djebel Onk, 1960	3,900	...	4	...	8	750	1,970,750	37.0
Djoua W., 1966	4,000	1	...	...	5	166	4,938,600	40.0
El Borma, 1967	2,495	8	...	...	...	3,341	3,807,487	45.0
Rhourde El Baguel, 1962	3,182	17	...	...	1	10,000	242,640,000	40.0
Timedratine, 1965	8,250	13	...	...	2	1,466	4,149,100	41.0
Tin Fouye Tabankort, 1966	4,500- 6,700	49	...	...	6	5,082	45,829,900	41.0
Rhourde Nouss, 1963	2,820	8	...	...	3	865	11,501,725	50.0
Others		25	...	...	16	22,149	20,741,385	
Total		**660**	**31**	**135**	**294**	**888,805**	**3,483,891 922**	

*Some data estimated.

ANGOLA

ANGOLA PROPER:								
Bento, 1972	7,500	2	...	...	...	2,440	1,109,874	26.1
Cabeca da Cobra, 1970	4,200	7	...	...	3	894	956,711	41.1
Mulenvos, 1966	6,500	1	6	...	3	721	3,556,771	22.6
N'Zombo, 1973	6,100-6,300	4	...	...		5,495	1,230,719	30.4
Quenguela Norte, 1968	4,900-6,200	22	4	...	24	5,457	22,424,773	31.0
Quinguila, 1972	4,100	11	...	...	...	5,227	2,114,647	35.9
Others	2,100-9,900	6	2	...	18	752	32,988,358	29.7
Subtotal		**53**	**12**	**...**	**48**	**20,986**	**64,381,8[illegible]**	
CABINDA:*								
Malongo, N., 1966	1,500-8,500	10	...	43	2	42,460	96,562,400	21.1-38.0
Malongo, 1., 1966	1,300-1,600	...	...	27	...	11,767	28,720,722	23.0-27.0
Malongo, W., 1969	1,800-8,750	20	...	16	12	86,210	84,227,042	18.0-34.0
Subtotal		**30**	**...**	**86**	**14**	**140,437**	**209,510,164**	
Total		**83**	**12**	**86**	**62**	**161,423**	**273,892,017**	

*All offshore

ARGENTINA

Chubut, 1907	2,500-6,000	...	5	...	1	75,981	572,500,524	22.8-24.5
Jujuy, 1969	11,000-15,000	25	...	...	...	24,824	22,012,654	23.0
La Pampa, 1968	5,000-5,500	17	...	...	...	12,894	15,899,134	...
Mendoza, 1932	7,500-8,000	?	800	...	31	112,289	523,212,915	...
Neuquen, 1918	3,000-6,000	50	300	...	50	48,153	184,154,078	30.0
Rio Negro, 1959	2,800-6,000	200	250	...	110	64,383	171,574,477	...
Salta, 1928	1,100-15,000	60	15	...	140	3,871	83,676,499	22.5-54.0
Santa Cruz, 1944	4,000-6,000	200	2,140	...	365	68,159	506,971,408	41.8
Tierra del Fuego, 1952	6,000-7,000	5	25	...	10	8,636	43,357,803	41.0
Others		...	...	...	...	2,845	240,976,417	
Total		**560**	**3,535**	**...**	**707**	**421,945**	**2,364,335,909**	

Note: Production data are as of 1-1-74 (source: AAPG), well data estimated.

AUSTRALIA

Alton, 1964	6,000	...	4	...	2	131	1,651,927	52.0
Barracouta, 1965*	4,700	...	...	...	2	3,600	8,656,000	62.8
Barrow Island, 1964*	2,200- 6,700	16	180	109	28	39,214	99,005,933	38.0
Halibut, 1967*	7,600	7	...	...	12	112,300	227,240,000	43.3
Moonie, 1961	5,800	1	2	17	2	1,358	17,503,000	44.0
Kingfish, 1967*	7,500	40	...	...	2	214,000	194,472,000	46.9
Total		**64**	**186**	**126**	**48**	**370,603**	**548,528,860**	

*Offshore.

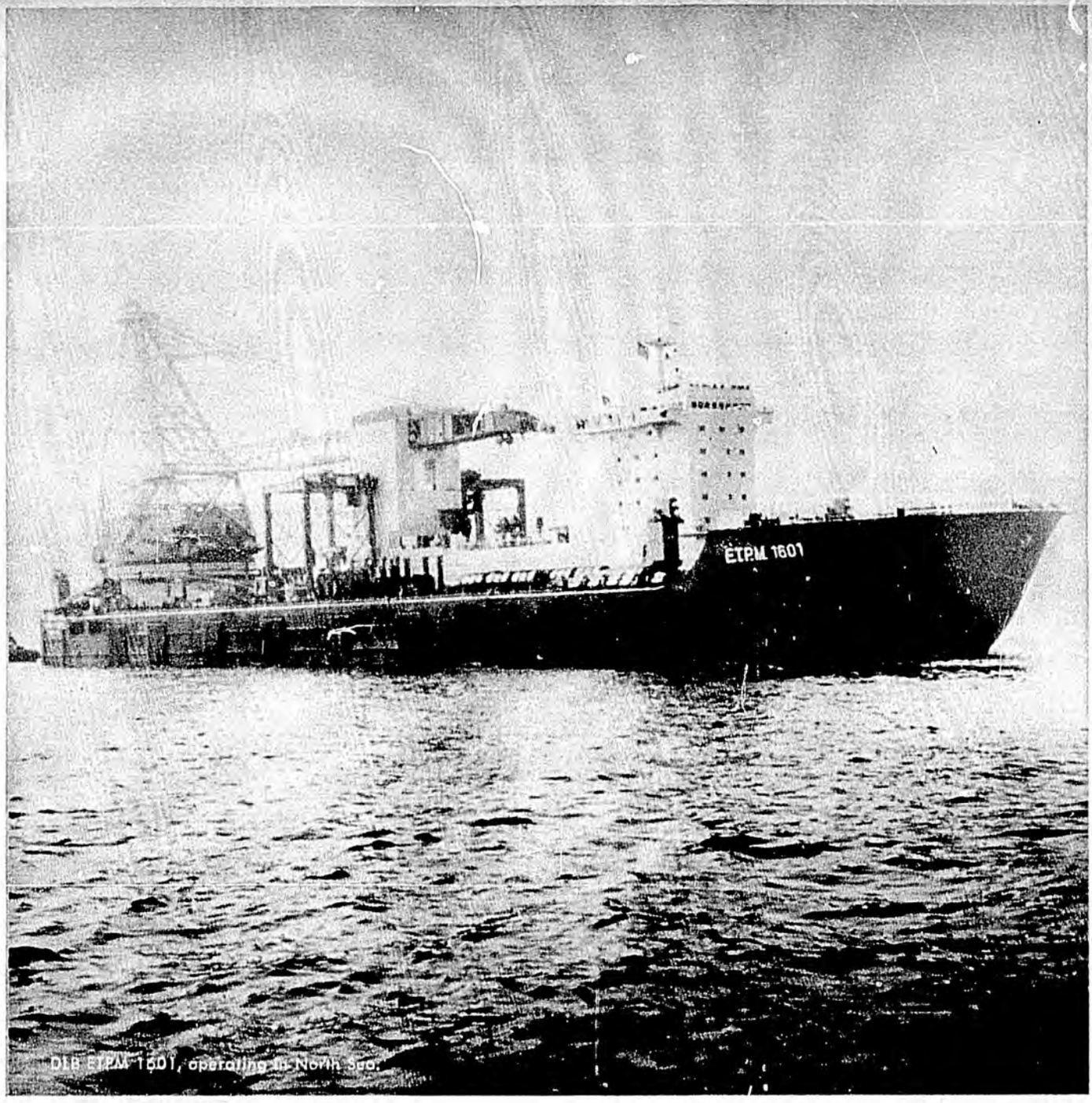
AUSTRIA

Vienna Basin								
Matzen, 1949	4,200- 7,200	64	514	243	116	22,971	305,458,762	25.7
Muehlberg, 1942	3,900- 5,500	...	43	14	6	692	36,077,300	35.0
Pirawarth, 1957	1,600- 6,500	4	...	53	4	2,033	5,762,043	28.4
St. Ulrich, 1938	1,600- 4,300	2	124	...	133	1,504	36,674,736	33.0
Schoenkirchen & Prottes Tief, 1962	7,800-10,100	16	2	2	5	10,635	42,949,452	31.1
Gaiselberg, 1938	3,400- 6,500	...	34	...	25	1,050	28,007,056	24.8
Others		3	80	...	46	1,172	48,965,798	30.8
Molasse Zone								
Piberbach, 1968	3,500	6	...	...	1	780	1,728,108	39.0
Sattledt, 1971	5,580	...	8	...	3	1,330	62,020	37.0

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
AUSTRIA—Continued	Voitsdorf, 1962	6,900	3	18	...	6	3,045	14,695,345	35.8
	Others		2	36	...	8	1,847	8,266,282	34.0
	Total		100	859	312	353	47,059	529,346,902	
BAHRAIN	Awali, 1932	1,850-4,600	162	30	19	33	67,975	555,959,500	33.0
BARBADOS	Fisher Pond, 1966		...	3	...	...	215	85,629	....
	Woodbourne, 1966		...	2	...	...	95	43,952	....
	Others		...	3	...	...	31	11,205	....
	Total		...	8	...	...	341	140,786	
BOLIVIA	Camiri, 1927	3,936	18	1	55	...	1,665	43,344,808	52.0-55.0
	Caranda, 1960	3,936	41	...	5	...	6,169	43,984,299	49.5
	Caigua, 1973	3,936	2	...	...	...	4,072	275,435	47.0
	Colpa, 1961	9,184	26	...	...	...	4,753	10,228,431	46.0
	La Pena, 1965	8,856	19	...	...	...	7,501	4,998,057	43.0
	Monteagudo, 1966	4,592	29	...	1	...	8,395	13,961,698	48.0
	Rio Grande, 1961	9,184	30	...	...	...	13,543	14,907,796	62.0
	Tatarenda, 1962	2,296	5	13	...	...	888	5,472,335	
	Others		...	36	...	...	536	8,592,307	
	Total		170	50	61	...	47,522	145,765,166	
BRAZIL	Agua Grande, 1951	3,281- 6,562	40	44	...	80	18,800	221,808,000	38.0-42.0
	Aracas, 1965	3,281- 6,562	6	67	...	25	28,800	53,112,000	41.0
	Buracica, 1959	2,395-2,559	...	84	...	13	19,410	100,966,000	35.0
	Candeias, 1941	3,281- 6,562	10	24	...	100	5,682	63,804,979	30.0-31.0
	Carmopolis, 1963	2,460	...	190	...	7	19,240	53,735,000	24.0
	Cassarongongo, 1959	4,757	...	19	...	6	3,235	7,338,000	32.0
	Dom Joao, 1947	918	...	370	...	125	10,000	59,597,500	38.0
	Faz. Boa Esperanca, 1966	7,874- 8,530	3	4	...	...	2,700	5,869,500	38.0-40.0
	Imbe, 1964	2,132- 8,202	4	16	...	6	3,100	7,074,000	38.0-42.0
	Guaricema, 1968*	3,543	12	...	...	5	4,800	1,682,448	43.0
	Malombe, 1966	3,281	...	14	...	1	1,700	2,861,000	31.0
	Miranga, 1965	3,281- 6,542	34	77	...	33	32,000	104,373,599	39.0-41.0
	Riachuelo, 1961	1,476	...	50	...	8	2,000	4,481,000	28.0
	Siririzinho, 1967	1,640	...	80	...	4	5,500	11,574,000	30.0
	Taquipe, 1959	3,117- 3,937	8	55	...	15	8,500	56,460,500	40.0
	Others		...	40	...	75	6,722	24,934,000	
	Total		117	1,134	...	503	172,189	779,671,526	
	*Offshore								
BRUNEI-MALAYSIA	Ampa, SW, 1963*	7,068-8,155	81	...	...	34	111,399	246,442,177	41.0
	Bakau, 1971*	11,000	1	...	...	...	1,865	1,820,655	39.0
	Baram, 1967*	9,500	29	...	...	2	53,440	50,739,639	40.5
	Baronia, 1970*	11,000	1	...	...	...	2,500	1,570,333	42.0
	Champion, 1970*	4,300	30	...	...	3	35,853	24,315,492	23.0
	Fairley, 1969*	10,740	11	...	...	1	28,599	21,777,859	40.0
	Seria, 1928		345	...	...	170	39,051	823,663,692	34.0
	West Lutong, 1965*		21	...	...	3	53,440	63,031,656	39.5
	Others (Miri, Jerudong)							80,200,000	
	Total		519	...	...	213	326,147	1,313,561,503	
	*Offshore								
BURMA*	Chauk-Lanywa, 1902		2	290	...	...	2,000		
	Mann, 1970	3,955-6,934	30	5	...	...	10,000		
	Myanaung, 1965		...	80	...	...	6,000		
	Prome, ?		...	20	...	...	1,000	157,617,000	
	Yenangyaung, 1902	5,000	...	200	...	...	4,000		
	Total		32	595	...	..	23,000		
	*Data estimated.								

	Name of field and discovery date	Depth (ft)	No. of wells capable of production	Daily avg. 1st 6 mos. 1974	Cumulative 7/1/74	Gravity °API
CANADA	ALBERTA					
	Acheson, 1950	4,600- 5,100	98	12,626	60,617,582	38.0
	Bantry, 1948	3,250	104	5,388	18,000,100	25.0
	Bellshill Lake, 1956	3,000	142	5,500	18,442,414	27.0
	Bonnie Glen, 1952	3,950- 7,100	173	51,127	202,768,853	38.0-42.0
	Carson Creek, North, 1958	8,650- 8,750	60	18,577	46,301,440	44.0
	Cessford, 1952	3,000- 3,350	75	2,925	12,871,143	24.0-26.0
	Chauvin, 1952	2,050	37	3,055	4,746,712	22.0
	Clive, 1951	6,150- 6,250	130	6,444	18,113,655	40.0-41.0

	Name of field and discovery date	Depth (ft)	No. of wells capable of production	Daily avg. 1st 6 mos. 1974	Cumulative 7/1/74	Gravity °API
CANADA—Continued	Crossfield, 1956	6,650	88	1,520	14,757,875	38.0
	Erskine, 1953	5,400	90	1,959	17,856,384	28.0
	Excelsoir, 1949	3,900	33	2,253	16,789,370	36.0
	Fenn-Big Valley, 1950	5,300- 5,400	314	27,080	143,335,501	26.0-32.0
	Garrington, 1954	6,600	95	1,550	12,815,104	39.0
	Gilby, 1953	5,850- 7,050	79	5,823	28,102,735	27.0-38.0
	Glen Park, 1951	6,300	10	2,487	9,953,847	38.0
	Golden Spike, 1949	5,050- 5,650	26	36,027	162,387,347	37.0
	Goose River, 1963	9,200	23	6,390	14 209,163	41.0
	Harmattan, East, 1957	8,600	107	8,210	33,700,531	38.0
	Harmattan Elkton, 1955	8,796- 9,000	67	5,224	31,228,165	38.0
	Hassar, 1957	4,800	35	2,898	11,728,501	36.0
	Innisfail, 1957	8,600	83	8,050	37,218,502	44.0
	Joarcam, 1949	3,250	281	7,680	72,669,447	38.0
	Joffre, 1953	5,000- 7,000	132	8,656	66,324,791	41.0-42.0
	Judy Creek, 1959	8,650- 8,850	214	61,853	172,505,676	41.0-42.0
	Kaybob, 1957	9,800	86	14,189	50,939,059	43.0
	Kaybob, South, 1962	6,900	95	8,592	21,910,984	42.0
	Leduc, 1947	4,200- 5,450	788	20,400	322,736,744	40.0
	Lloydminster, 1939	2,000	253	2,322	19,685,264	16.0
	Medicine River, 1956	7,050- 7,250	53	6,943	7,103,752	26.0-27.0
	Mitsue, 1964	5,650	236	42,413	91,138,488	43.0
	Nipisi, 1965	5,600	187	40,472	77,776,926	41.0
	Pembina, 1953	3,200- 5,100	3,059	138,817	788,717,635	37.0-38.0
	Provost, 1952	2,760- 2,868	291	6,535	14,466,742	38.0-42.0
	Rainbow, 1965	5,950- 6,400	23	80,149	159,779,420	38.0-42.0
	Red Earth, 1956	4,700	33	4,922	11,809,690	40.0
	Redwater, 1948	3,200	785	85,914	498,029,776	36.0
	Simonette, 1958	11,600	22	5,669	17,390,096	47.0
	Snipe Lake, 1962	8,550	93	8,625	27,997,923	37.0
	Stettler, 1949	5,200- 5,350	125	4,406	32,787,681	28.0-30.0
	Sturgeon Lake, 1952	8,850	18	2,689	11,287,562	37.0-38.0
	Sturgeon Lake, South, 1953	4,900- 8,500	143	15,676	66,544,960	36.0-38.0
	Sundre, 1955	9,050	47	3,490	20,194,299	32.0
	Swan Hills, 1957	7,450- 8,300	692	105,209	309,877,498	41.0-42.0
	Swan Hills, South, 1959	8,400	193	48,403	135,208,354	41.0
	Sylvan Lake, 1962	7,300- 7,450	33	3,170	9,388,540	28.0
	Taber, South, 1963	3,250	24	3,149	10,006,116	19.0
	Turner Valley, 1914	2,500- 9,000	170	2,763	123,261,023	40.0
	Virginia Hills, 1957	9,300	104	21,098	64,765,304	38.0
	Virgo, 1967	4,900- 4,950	96	8,669	21,205,254	29.0-43.0
	Wainwright, 1926	2,100	294	6,649	27,543,520	22.0
	Westrose, 1952	7,250	19	15,311	48,894,556	41.0
	Willesden Green, 1954	6,200	412	15,096	53,428,398	41.0
	Wizard Lake, 1951	6,450	35	41,443	127,563,345	38.0
	Zama, 1967	4,900	179	14,053	37,545,970	25.0-43.0
	Others	....	1,344	328,978	77,047,283	...
	Total		12,428	*1,398,516	*4,513,477,000	
	*All fields					
	BRITISH COLUMBIA					
	Aitken Creek, 1959	4,400	10	980	3,767,060	38.0
	Beatton River, 1958	3,800	16	934	5,603,475	
	Blueberry, 1953	6,950	33	1,519	9,572,747	40.0
	Boundary Lake, 1955	4,300- 4,600	331	20,994	98,792,611	...
	Inga, 1966	5,300	79	7,076	19,349,203	40.0
	Milligan Creek, 1950	3,750	29	4,385	33,440,736	41.0
	Peejay, 1959	3,900	105	7,756	44,301,107	30.0
	Weasel, 1965	3,800	23	3,392	9,365,619	40.0
	Others	....	974	4,966	15,685,443	...
	Total		1,600	52,002	239,878,001	
	MANITODA					
	Daly, 1951	2,550	148	1,354	16,470,140	32.0
	Virden-Roselea, 1953	2,030	243	3,671	27,769,636	30.0
	N. Virden-Scallion, 1953	2,010	244	6,509	46,144,893	35.0
	Routledge, 1955	2,130	106	1,200	11,914,892	35.0
	Others	....	80	247	2,038,185	...
	Total		821	12,981	104,337,746	
	SASKATCHEWAN					
	Alameda, 1956	4,420	87	1,492	12,723,136	40.0
	Battrum, 1955	2,900	155	6,539	33,938,885	19.0
	Coleville, 1951	2,700	196	4,384	25,226,109	13.0
	Dollard, 1953	4,600	57	8,219	61,580,255	23.0
	Fosterton, 1952	3,200	43	4,888	46,138,217	21.0
	Instow, 1954	4,500	48	5,096	33,212,924	23.0
	Midale, 1953	4,600	384	8,788	74,858,082	27.0
	North Premier, 1953	3,300- 3,500	67	5,197	16,010,837	23.0-24.0
	Steelman, 1954	4,590- 4,620	616	17,988	167,345,500	38.0
	Weyburn, 1955	4,600	575	23,066	182,071,094	28.0
	Others	....	4,084	130,343	648,870,821	...
	Total		6,312	216,000	1,301,975,860	



DLB ETPM 1601, operating in North Sea.

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	Name of field and discovery date	Depth (ft)	No. of wells capable of production	Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
CANADA—Continued	ONTARIO					
	All fields	....	....	2,000	53,100,080	...
	NEW BRUNSWICK					
	Stoney Creek	....	....	24	763,399	...
	NORTHWEST TERRITORIES					
	Norman Wells	....	41	1,000	16,372,517	...
	Total Canada		21,202	*1,682,523	*6,229,904,603	

*All

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
CHILE	MAINLAND								
	Cañadón, 1962	6,560	15	...	8	18	1,696	10,249,312	38.4
	Daniel, 1960	5,975	37	...	18	40	4,779	28,210,426	25.4
	Daniel Este, 1961	5,740	21	...	5	14	4,321	19,445,725	25.0
	Posesión, 1960	6,100	34	...	...	7	2,506	14,125,390	63.6
	Dúngenes, 1962	6,050	7	...	1	3	747	2,363,315	28.6
	TIERRA DEL FUEGO								
	Calafate, 1955	6,200	16	...	5	33	3,353	18,155,964	49.3
	Catalina Sur, 1961	5,890	3	...	5	31	358	5,444,898	44.0
	Cullen, 1954	5,840	26	...	14	50	2,399	34,999,991	41.8
	Tres Lagos, 1957	5,640	20	...	2	37	2,097	11,014,649	40.1
	Victor Sur, 1950	7,200	..	...	6	14	452	7,223,645	39.3
	Otros		40	...	33	121	5,940	50,338,645	
	Total		219	...	97	368	28,648	201,571,960	
CHINA (TAIWAN)	Tiehchenshan, 1962	8,500-18,000	26	...	...	2	2,652	4,639,533	53.0
	Others		34	...	...	16	619	1,094,524	
	Total		60	...	...	18	3,271	5,734,057	
COLOMBIA	Acae, 1964	10,600	4	3	3	4	4,436	12,178,267	30.5
	Bonanza, 1964	4,000	4	8	1	3	2,128	7,062,835	32.3
	Boquete, 1961	8,000	12	...	...	6	3,152	10,677,912	27.2
	Caribe, 1969	7,750	2	1	...	1	1,042	1,785,958	31.9
	Casabe, 1941	3,880	...	270	...	40	6,144	197,283,929	20.8
	Chucurí-BajoRio, 1958	10,100	...	1	...	1	843	71,694	28.1
	Cicuco, 1961	8,000	10	...	...	13	426	41,902,747	40.3
	Colorado, 1930	3,600	4	32	...	13	694	6,350,559	39.4
	Cocorna, 1963	2,000	..	14	...	4	1,021	3,320,170	12.5
	Cristalina, 1959	10,700	...	3	...	...	738	3,782,244	30.2
	Dina, 1962	2,900	4	5	...	7	3,318	5,974,218	21.5
	Galán, 1945	3,800	...	64	...	9	1,179	14,833,647	19.0
	Infantas, 1918	3,200	1	298	...	16	4,064	208,510,209	25.8
	La Cira, 1925	3,250	...	619	...	48	17,146	406,466,926	24.0
	Lisama, 1957	9,500	8	9	...	5	2,018	4,740,318	31.0
	Llanito, 1960	7,350	2	20	...	10	1,172	9,083,613	21.0
	Orito, 1963	6,600	20	4	23	25	37,513	97,247,798	33.6
	Ortega, 1953	4,300	...	7	...	1	486	9,618,429	26.0
	Palagua-Velasquez, 1946	4,925	...	222	34	102	18,144	190,190,233	19.0
	Payoa, 1962	8,000	20	...	11	18	5,970	59,762,445	33.6
	Peñas Blancas, 1958	8,200	...	6	...	...	529	6,388,189	29.6
	Provincia, 1962	8,000	20	...	13	14	17,442	96,202,409	33.0
	Ric Zulia, 1962	5,600	4	12	...	1	16,865	101,510,219	41.2
	San Antonio, 1971	9,500	...	4	...	...	909	1,435,498	30.7
	Tello, 1972	9,200	3	...	...	...	1,147	504,518	20.9
	Tibú, 1940	4,200	30	146	22	70	10,826	249,537,540	36.5
	Tisquirama-Totumal, 1955	9,500	...	9	...	...	443	3,161,482	22.0
	Yarigui, 1943	6,850	...	39	...	3	8,995	85,922,950	20.8
	Others	....	1	26	...	27	942	5,954,526	
	Total		149	1,822	107	441	169,732	1,841,461,482	
CONGO REPUBLIC (Brazzaville)	Emeraude Marine, 1969*	1,00[illegible]	...	49	...	5	51,000	25,537,000	23.0
	Pointe Indienne, 1957	5,00	3	...	...	6	220	5,912,600	36.9
	Total		3	49	...	11	51,220	28,735,250	
DENMARK	Dan, 1971*	6,[illegible]00	6	...	...	2	(1)	1,641,000	30.4
	Fateh, 1966*	7,600 - 9,000	24	...	9	...	132,892	199,104,476	31.8
	Fateh SW, 1970*	7,50[illegible] - 9,000	12	...	...	1	98,482	59,696,127	32.0
	Total		36	...	9	1	231,374	258,800,603	

*Offshore. 1Shut down temporarily—resumed production July 1, 197[illegible]

*Offshore.

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
ECUADOR	COASTAL:								
	Ancon, 1921	4,000	7	540	...	1,671	2,391	99,107,336	36.5-37.0
	Others	1,000- 3,000	18	156	...	308	408	9,124,979	30.5-37.0
	ORIENTE:								
	Aguarico, 1969	9,400	9	...	...	...	7,962	1,441,133	29.5
	Lago Agrio, 1967	10,120	20	...	...	6	47,301	29,716,724	28.6
	Sacha, 1969	9,900	58	...	...	16	79,132	62,129,165	29.7
	Shushufindi, 1969	9,400	11	...	24	15	94,668	50,806,826	31.7
	Total		**123**	**696**	**24**	**2,016**	**231,862**	**252,326,163**	
EGYPT	Abu Gharadig, 1972	9,500	2	...	...	11	1,475	4,290,295	36.0
	Abu Rudeis, 1957†	8,500	...	...	...	...	...	13,204,947	23.0
	Al Yusr, 1966	4,264	15	...	...	...	7,167	12,222,447	...
	Asl, 1948†	3,000	...	...	...	...	...	34,269,304	23.0
	Belayim (Land and Offshore), 1954†*	7,000- 8,500	...	...	...	...	...	224,777,435	28.0
	El Alamein, 1966	8,700	...	8	...	12	997‡	8,508,275	19.0
	El Morgan, 1965*								
	Kare .n	5,500- 6,400	16	...	24	2	39,594	420,492,068	32.0
	Belayim	5,100- 5,700	5	...	4	...	8,594	6,974,854	27.0
	July, 1973*	9,000	3	...	...	...	13,056	2,450,589	34.0
	Kareem, 1968	2,200	...	8	...	12	997‡	8,508,275	19.0
	Ras Amer, 1965	4,264	1	3	...	...	866‡	2,860,411	20.0
	Ras Bakr, 1958	3,280	15	35	...	...	7,789‡	47,454,752	20.0
	Ras Gharib, 1938	2,100	...	90	..	12	7,298‡	217,179,819	25.0
	Razzak, 1972	7,700	11	...	...	2	17,302	11,742,447	36.0
	Sidri, 1959†	8,100	...	...	...	...	...	4,308,786	23.0
	Sudr, 1946†	....	...	...	...	...	...	39,198,071	23.0
	Uyun, 1968	....	...	90	...	...	1,653	1,237,389	...
	Yidma, 1971	9,000	...	5	...	...	5,300	7,065,576	43.5
	Others		10	2	...	1	444	325,104	....
	Total Egypt		**78**	**241**	**28**	**46**	**118,335**	**1,103,923,932**	
FRANCE	**ALSACE** (All fields shut in)		...	...	...	...	....	26,368,290	
	AQUITAINE BASIN								
	Esso Rep fields:								
	Cazaux, 1959	8,200	3	25	...	2	4,045	43,339,866	34.1-37.5
	Lavergne, 1962	10,650	2	1	...	...	322	8,768,979	40.4
	Lugos, 1956	4,900	6	...	...	1	405	3,193,516	20.8
	Parentis, 1954	7,710	5	17	...	4	7,804	160,516,393	33.0
	Others	....	1	12	...	2	790	13,683,401	
	Erap fields:								
	Bonrepos, 1973	9,300	...	1	...	...	33	181,091	42.8
	Montastruc, 1973	9,810	1	...	...	...	755	21,652	42.0
	SNPA fields:								
	Lacq, 1949	2,165	11	21	...	15	1,161	22,309,479	20.6
	PARIS BASIN								
	Copesep fields	1,530-4,525	...	13	...	1	441	6,370,994	19.9-32.8
	Erap fields:								
	Chailly-en-Biere, 1958	5,575	...	20	...	12	474	7,518,015	35.3
	Chuelles, 1961	2,000	...	28	...	12	395	4,334,908	27.1
	Saint-Firmin, 1960	2,000	...	33	...	11	789	6,170,383	27.8
	Villemer, 1958	4,985	...	6	...	7	417	3,473,238	31.4
	Others		2	52	...	16	1,402	15,322,783	
	Petrorep fields:								
	Coulommes, 1958	6,070	4	27	...	11	937	10,390,097	32.6
	Total France		**35**	**256**	...	**94**	**20,170**	**331,963,085**	
GABON	Anguille Marine, 1962*	8,300	16	...	...	3	28,200	57,036,000	31.8
	Anguille, Northeast, 1968*	7,480	10	...	...	...	13,000	20,327,000	31.4
	Anguille, Northwest, 1968*	7,700	2	...	...	...	2,000	2,010,385	31.4
	Cap Lopez, N., 1962	6,700	4	...	...	5	5,900	16,401,500	23.9
	Gamba, 1963	3,000	31	...	...	12	29,584	98,604,344	32.4
	GBM, 1969	6,500- 7,500	...	...	...	2	(not yet producing)		33.0-33.8
	Ivinga, 1967	3,100	25	...	...	4	21,846	40,598,928	32.5
	Lucina Marine, 1971* Not yet on stream. Three oil wells finished at about 6,100 ft.								
	Pointe Clairette, 1956	4,000- 5,000	17	...	...	12	2,750	25,330,750	29.9
	Port Gentil Ocean, 1964*	8,100	3	...	...	2	3,750	10,233,750	33.6
	Tchengue, 1959	3,500	9	...	...	14	3,500	22,277,500	30.6
	Tchengue Ocean, 1962*	6,200	5	...	...	1	1,500	5,547,500	33.1
	Torpille Marine, 1968*	9,487	10	...	...	...	11,000	9,886,000	33.9
	Others		5	...	...	5	...	.....	
	Total		**137**	...	...	**60**	**123,030**	**308,253,657**	

*Offshore. †These fields on Sinai Peninsula being produced by Israel, who refuses figures. Daily output is estimated at 120,000 bbl. Cumulative figures for the captured fields are carried forward for the record (data as of June 5, 1967). ‡Data are estimated.

*Offshore
Note: Elf data estimated.

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
GERMANY, WEST	**BAVARIA**								
	Arlesried, 1964	4,900	...	12	...	5	2,469	6,822,519	47.0
	Darching, 1967	14,400	1	...	...	...	1,679	2,392,277	
	Moenchsrot, 1958	4,800	...	18	...	...	1,204	6,979,224	36.0
	Others		9	26	...	...	1,846	17,532,091	
	Total		**10**	**56**	...	**5**	**7,198**	**33,726,111**	
	EMSLAND								
	Emlichheim, 1944	2,600	...	99	...	...	3,385	28,192,364	25.0
	Georgsdorf, 1944	1,800- 2,600	45	163	...	4	8,610	65,802,957	24.0-29.0
	Meppen-Schwefingen, 1960	4,000	10	12	...	...	1,391	6,180,959	28.0-30.0
	Ruhlermoor, 1949	2,000- 4,700	10	246	...	10	12,520	88,402,752	25.0-34.0
	Ruhlertwist, 1949	2,350- 2,900	6	103	...	...	1,990	22,392,447	25.0
	Scheerhorn, 1949	3,550- 3,750	...	123	...	5	4,831	31,026,663	30.0
	Others		...	156	...	...	1,692	23,297,702	
	Total		**71**	**902**	...	**19**	**34,419**	**265,295,844**	
	SCHLESWIG-HOLSTEIN								
	Plon-Ost, 1959	6,400	2	55	...	1	7,311	32,835,310	36.0
	Preetz, 1962	8,350- 8,550	1	24	...	...	1,041	7,906,367	29.0
	Reitbrook, 1937	1,450- 2,100	6	38	...	9	2,021	31,561,860	29.0
	Others		1	81	...	4	1,472	41,921,770	
	Total		**10**	**198**	...	**14**	**11,845**	**114,225,307**	
	HANNOVER								
	Eldingen, 1949	4,750	...	27	...	...	1,622	13,961,896	35.0
	Hankensbuttel, 1954	4,450- 5,100	10	37	...	...	9,380	63,302,557	33.0
	Hardesse, 1958	6,050	9	11	...	...	849	3,316,343	34.0
	Hohne, 1951	4,300- 5,900	...	34	...	3	3,063	32,902,948	33.0-34.0
	Kuesebeck, 1958	5,100- 5,200	...	24	...	...	2,143	10,505,290	36.0
	Leiferde, 1956	2,600	2	34	...	...	2,458	15,162,434	34.0
	Luben, 1955	3,950	1	14	...	...	1,247	7,333,149	35.0-38.0
	Meckelfeld, 1938	1,000- 1,300	1	24	...	1	1,253	11,131,507	24.0-32.0
	Nienhagen-Haenigsen, 1899	800- 4,100	...	68	...	5	944	55,521,775	22.0-32.0
	Oelheim-Sud, 1968	1,650	9	4	...	...	1,190	2,921,707	33.0
	Oerrel-Wesendorf-Nord, 1954	4,450	...	38	...	...	1,077	7,560,590	
	Ruehme, 1954	1,950	...	39	...	1	1,019	5,534,848	
	Sinstorf, 1960	6,750- 7,150	...	20	...	...	2,356	12,880,869	
	Suderbruch, 1949	3,750- 7,550	...	60	...	...	1,138	19,137,035	19.0-38.0
	Vothop, 1952	2,950- 6,900	2	24	...	4	1,413	10,986,830	36.0
	Others		...	262	...	...	4,792	134,833,303	
	Total		**34**	**720**	...	**14**	**35,944**	**406,993,081**	
	UPPER RHINE VALLEY								
	Landau, 1955	3,950- 4,800	...	76	...	2	2,950	16,781,250	36.0
	Others		...	21	...	1	312	10,051,359	
	Total		...	**97**	...	**3**	**3,262**	**26,832,609**	
	WESER-EMS								
	Barenburg, 1953	2,300- 3,300	9	32	...	1	2,641	24,603,940	29.0
	Rockstedt, 1954	3,750	...	25	...	3	2,249	12,706,859	
	Bramberge, 1958	2,560- 3,300	56	6	...	...	2,992	50,431,806	29.0
	Dueste, 1954	2,600- 4,250	...	156	...	...	2,928	31,516,104	
	Gross Lessen, 1969	3,300	4	...	...	...	6,798	7,774,865	
	Sued-Oldenburg, 1950	1,700- 6,500	4	93	...	13	2,198	31,637,738	
	Voigtei, 1953	1,150- 1,500	2	68	...	12	1,545	19,147,778	31.0-34.0
	Wehrbleck, 1957	3,400	...	63	...	...	1,295	10,731,388	33.0
	Others		...	83	...	...	2,281	19,201,325	
	Total		**75**	**526**	...	**29**	**24,927**	**207,751,803**	
	Total Germany, West		**200**	**2,499**	...	**84**	**117,595**	**1,054,824,755**	
GUATEMALA	Rubel Santo, 1974	5,300	...	...	...	1	...	...	30.0
	Tortugas, 1974	2,400	...	...	...	2	...	...	35.0
	Total		...	...	...	**3**	...	...	
	Note: These two new fields, first for Guatemala, are not yet on production.								
ISRAEL	Heletz-Brur, 1955	5,200	...	18	...	1	660	11,005,015	29.0
	Kochav, 1963	5,500	...	7	...	2	169	3,682,581	26.5
	Total Israel			**25**		**3**	**829**	**14,687,596**	
ITALY	Gela, 1956*	10,720-10,870	35	27	...	19	10,227	76,588,397	6.5-15.1
	Pisticci-S. Cataldo, 1960	6,820- 6,880	7	...	...	3	842	3,704,005	11.4
	Torrente Tona, 1963	4,370- 4,430	1	3	...	1	232	780,278	25.7
	Malossa, 1973	18,080-18,190	1	...	...	...	630	6,123	52.0
	Ragusa, 1954	5,400- 5,440	5	...	...	18	142	7,669,100	31.1-55.2
	Others	5,690- 5,860	...	32	...	17	6,255	103,955,134	19.5
	Total		**49**	**62**	...	**58**	**18,328**	**192,703,037**	
	*Partly offshore.								

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
INDIA*	**GUJARAT STATE**								
	Ankleshwar, 1960	2,953- 3,937		186					
	Bakrol, 1968	4,593- 4,921		2					
	Kadi, N., 1968	2,953- 3,909		9					
	Kadi, S., 1968	5,906- 6,552		6					
	Kalol, 1961	4,265- 5,[illegible]		106					
	Kathana, 1965	5,250- 5,[illegible]		6					
	Kholka, 1966	4,265- 5,577		5			78,000		
	Kosamba, 1963	1,968- 2,625		6					
	Nawagam, 1963	4,429- 6,562		63					
	Sanand, 1963	4,265- 4,593		13					
	Sobhasen, 1968	4,429- 5,906		9					
	Wovel, 1963	4,265- 4,593		1				512,512,000	22.0-48.0
	ASSAM STATE								
	Digboi, 1890	300- 7,500		733					
	Geleki, 1968	12,632-12,795		1					
	Lakwa, 1965	8,038-12,795		64					
	Moran, 1958	11,000		45			78,000		
	Nahorkatiya, 1953	9,500		251					
	Rudrasagar, 1961	10,171-10,500		39					
	Total			**1,545**			**156,000**		
	*Data estimated.								
INDONESIA	**Pertamina Unit I:**								
	Rantau, 1929	950- 4,540	110	2	115	227	28,732	190,020,630	48.0
	Paluh Tabuhan, 1937	3,727- 4,009	21	...	...	38	1,754	8,222,753	49.0
	Serang Jaya, 1926	4,600- 4,636	17	...	1	57	873	6,964,411	46.0
	Others		8	2	...	454	682	55,887,527	N.A.
	Total		**156**	**4**	**116**	**776**	**32,041**	**261,095,321**	
	Pertamina Unit II:								
	Bajubang, 1922	3,300	...	15	...	106	530	38,469,762	42.3
	Kenali Asam, 1931	3,800	6	45	6	187	1,520	85,835,617	24.2
	Tempino, 1931	2,700	2	55	...	118	1,655	80,388,225	42.3
	Tanjung Tiga, 1948	4,600	...	33	...	42	3,241	46,275,441	27.8
	Talang Akar, 1937	4,200	3	73	...	126	4,960	154,800,533	27.8
	Prabumulih Barat, 1953	4,740- 5,640	1	...	3	9	550	9,596,922	27.8
	Limau, 1928	4,500- 5,400	22	...	79	145	9,593	190,409,838	27.8
	Gunung Kemala, 1938	6,340	10	...	1	41	1,400	22,501,594	27.8
	Belimbing, 1964	5,280	3	...	8	10	3,057	14,795,963	27.8
	Kuang, 1967	4,800	1	...	6	9	1,153	3,700,848	27.8
	East Benakat, 1974		8	...	...	4	1,873	339,033	27.8
	Others		2	6	2	45	655	71,022,633	
	Total		**58**	**227**	**105**	**842**	**30,187**	**718,136,409**	
	Pertamina Unit III:								
	Jatibarang, 1970	3,500- 7,000	18	...	...	62	34,357	13,529,410	30.0
	Others		1	16	...	28	146	11,381,095	
	Total		**19**	**16**	...	**90**	**34,503**	**24,910,505**	
	Pertamina Unit IV:								
	Samboja, 1916	1,600	1	23	...	290	506	61,748,831	32.4
	Bunyu, 1923	2,020- 7,800	11	...	17	52	7,374	55,383,231	24.5-32.6
	Tanjung, 1938	2,500- 7,300	4	55	...	609	7,609	92,625,694	32.8
	Total		**16**	**78**	**17**	**951**	**15,489**	**209,757,756**	
	Pertamina Unit V:								
	Klamono, 1936	500	...	35	...	6	1,460	87,999,686	18 [illegible]
	Lemigas:								
	Kawengan, 1929	1,750- 2,700	...	21	...	116	516	83,978,364	39.0
	Others		2	32	...	332	466	26,649,194	
	Total Lemigas		**2**	**53**	...	**448**	**982**	**110,627,558**	
	P.T. Caltex:								
	Minas, 1944	2,400	...	193	...	80	420,356	1,744,146,961	33.3
	Petani, 1964	4,700	...	20	...	3	72,276	146,814,815	30.9
	Duri, 1941	600	...	349	...	93	29,451	242,557,885	21.6
	Pematang, 1959	2,800	...	20	...	3	53,562	122,864,047	31.3
	Bekasap, 1955	2,500	...	24	...	5	72,937	259,306,092	33.1
	Pungut, 1959	2,800	...	5	...	4	10,766	15,445,702	36.5
	No. Menggala, 1968	3,600	...	13	...	1	21,252	10,026,628	15.2
	Rangau, 1968	6,000	...	5	...	1	2,397	3,324,297	40.1
	So Bekasap, 1968	3,500	...	5	...	3	6,559	13,000,556	33.7
	Pematang Bow, 1969	5,000	...	3	...	1	1,532	1,552,949	35.8
	Kotabatak, 1952	4,700	...	30	...	11	22,713	34,957,610	29.7
	Tandun, 1970	3,000	...	4	...	1	2,852	4,726,130	32.7
	Mindal, 1971	3,200	...	3	...	1	627	1,543,369	24.0
	Pudu, 1972	5,500	...	5	...	1	9,634	4,909,493	35.5
	Bangko, 1970	1,500	...	34	...	2	111,889	102,103,311	31.1

Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
So Balam, 1969	1,500	...	21	...	1	22,147	20,471,758	33.3
Petapahan, 1971	4,300	...	12	...	6	42,967	22,476,395	27.9
Suram, 1973	1,700	...	4	...	3	4,107	968,502	27.4
Sintong, 1971	2,400	1	13	...	1	19,079	14,792,112	28.3
Pinggir, 1973	3,200	...	3	...	2	3,369	853,806	34.9
So Menggala, 1968	4,000	...	3	...	...	10,361	4,223,803	33.7
So Pinggir, 1974	3,255	...	2	...	1	1,482	268,228	38.2
S.E. Balam, 1973	4,370	...	2	...	...	447	81,528	14.3
Kulin, 1973	1,400	...	16	...	1	3,131	1,406,999	18.6
Benar, 1973	2,200	3	...	...	1	8,771	3,124,739	21.8
N. Sintong, 1973	3,750	2	...	...	2	5,791	1,105,347	16.4
Aman, 1974	3,280	...	2	...	...	677	122,582	35.1
Others		...	...	...	4	...	2,369	N.A.
Total P.T. Caltex		**6**	**791**	**...**	**232**	**961,132**	**2,777,188,014**	
P.T. Calasiatic & Tipco:								
So Menggala, 1968	4,000	...	1	...	...	4,568	1,862,368	33.7
Lindai, 1974	1,100	...	3	...	1	658	118,949	28.3
Total C. & T.		**...**	**4**	**...**	**1**	**5,226**	**1,981,317**	
P.T. Stanvac Indonesia:								
Sago, 1940	1,800	...	86	...	31	7,568	104,315,945	35.0
Lirik, 1939	1,600	...	27	...	6	5,338	25,499,527	35.0
Andan, 1941	1,700	...	5	...	4	457	4,498,782	35.0
N. Pulai, 1951	1,800	...	23	...	17	3,507	29,002,008	35.0
Molek, 1956	2,600	...	14	...	4	1,378	5,026,572	35.0
Binio, 1972	1,514- 1,720	...	19	...	4	4,655	3,493,112	34.0
Talang Akar, 1922	2,800	9	20	4	512	618	240,611,496	35.0
Benakat, 1932	1,600	3	62	...	207	4,167	121,727,489	35.0
Selo, 1938	2,998	...	...	...	11	...	492,482	38.0
Jirak, 1930	900	7	29	...	175	3,614	50,167,839	36.8
Abab, 1951	6,000	9	4	12	55	8,451	31,151,631	33.9
Dewa, 1971	7,675	5	...	...	13	2,346	2,971,065	35.0
Ibul, 1970	5,600	7	...	4	18	4,768	12,879,796	38.0
Others		10	8	...	216	1,443	133,863,867	
Total P. T. Stanvac		**50**	**297**	**20**	**1,273**	**48,310**	**765,701,611**	
Asamera:								
Ice Tabue, 1971	2,112- 3,564	22	...	...	55	5,178	8,879,423	51.0
Julo Rayeo, 1929	2,520- 2,590	23	...	...	45	2,485	7,474,101	47.0
Tualang, 1973	2,648- 3,626	21	...	...	12	11,890	4,420,906	53.0
Alur Simon, 1972	3,212- 3,960	4	...	...	2	484	303,293	55.4
Others		2	1	...	29	165	4,848,906	
Total Asamera		**72**	**1**	**...**	**143**	**20,202**	**25,926,629**	
Pt. Si. (Corr. Block):								
Kluang, 1913	2,515	...	10	...	32	961	1,535,289	45.0
Others		1	10	...	95	254	21,857,963	
Total PT. SI. (C. Block)		**1**	**20**	**...**	**127**	**1,215**	**23,393,252**	
Hapco:								
Cinta, 1971	4,500	2	12	...	1	53,018	38,138,786	31.8
Kitty, 1973	4,000	...	6	...	...	3,692	1,579,405	17.3-22.8
Total HAPCO		**2**	**18**	**...**	**1**	**56,710**	**39,718,191**	
ARCO:								
Ardjuna, 1971	2,418- 6,205	48	...	2	2	90,541	51,988,762	36.9
Total ARCO		**48**	**...**	**2**	**2**	**90,541**	**51,988,762**	
Union Oil:								
Attaka, 1972	4,200- 8,000	52	...	...	3	102,241	46,063,225	41.1
Total Union Oil		**52**	**...**	**...**	**3**	**102,241**	**46,063,225**	
Tesoro:								
Tarakan, 1906	200- 2,400	23	172	102	1,107	5,189	197,833,349	20.0-21.0
Sanga-Sanga, 1893	1,200	23	68	...	765	1,688	237,972,662	17.0-35.0
Total Tesoro		**46**	**240**	**102**	**1,872**	**6,877**	**435,806,011**	
A. A. R.								
Bula, 1971	500-600	...	23	...	16	1,581	1,822,722	23.6
Total A. A. R.		**...**	**23**	**...**	**16**	**1,581**	**1,822,722**	
Petromer Trend:								
Jaya, 1973	3,400	3	...	...	1	11,921	4,499,080	40 -42.1
Kasim, 1972	4,050	5	...	...	2	13,209	3,474,639	31.3-40.2
N. Kasim, 1973	5,400	1	1	...	2	13,090	2,369,334	27.4
Total Petromer Trend		**9**	**1**	**...**	**5**	**38,220**	**10,343,053**	
TOTAL INDONESIA		**537**	**1,808**	**362**	**6,788**	**1,446,917**	**5,592,460,022**	

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
IRAN	**Consortium-NIOC Fields**								
	Agha Jari, 1933	6,500	50	...	...	...	1,009,693	5,723,172,000	33.9
	Ahwaz-Bangestan, 1971	14,000	6	...	...	...	83,027	28,369,000	24.3
	Ahwaz-Asmari, 1958	9,000	40	...	...	...	872,900	1,229,566,000	32.1
	Bibi Hakimeh, 1961	6,800	18	...	...	...	361,866	1,050,000,000	29.8
	Binak, 1959	11,600	1	...	...	...	56,103	101,579,000	30.0
	Gach Saran, 1928	7,000	30	...	...	...	911,562	3,294,836,000	31.2
	Haft Kel, 1927	3,500	11	...	...	...	35,238	1,665,240,000	36.6
	Karanj, 1963	7,800	8	...	...	...	316,481	478,075,000	33.8
	Kharg Island, 1962	11,800	6	...	...	...	65,763	101,387,000	32.7
	Kupal, 1965	14,000	2	...	...	...	20,796	13,965,000	32.1
	Lab-e Safid, 1969	8,600	2	...	...	...	22,072	7,620,000	34.6
	Mansuri, 1963	8,600	1	...	...	...	4,771	864,000	28.0
	Marun, 1964	11,000	35	...	...	...	1,053,503	1,999,717,000	32.8
	Masjid-e Suleiman, 1908	2,500	21	...	...	...	10,823	1,969,000	37.1
	Naft Safid, 1935	6,000	12	...	...	...	33,469	259,465,000	35.7
	Paris, 1964	5,700	12	...	...	...	422,916	555,901,000	33.9
	Par-e Siah, 1967	6,000	1	...	...	...	7,411	13 106,000	37.4
	Pazanan, 1961	9,000	6	...	...	...	34,293	133,379,000	35.5
	Rag-e Safid, 1964	8,300	18	...	...	...	313,210	205,753,000	28.1
	Ramshir, 1963	9,100	2	...	...	...	18,740	22,916,000	27.2
	Total Consortium		**282**	...	...	...	**5,654,637**	**17,972,879,000**	
	Sirip Fields:								
	Bahregansar, 1960*	9,000-12,300	7	...	...	...	21,000	93,152,000	31.5
	Hendijan, 1968*	9,950-11,000	5	...	...	...	22,000	28,605,000	31.5
	Nowrouz, 1966*	8,587-10,850	10	...	...	...	32,000	40,267,000	20.9
	Total Sirip *Offshore		**22**	...	...	...	**75,000**	**162,224,000**	
	IPAC Fields:								
	Cyrus, 1962*	1,000	7	...	...	6	24,448	42,896,898	18.9
	Darius, 1961*	11,000	12	...	...	1	97,247	308,311,837	34.0
	Total IPAC *Offshore		**19**	...	...	**7**	**121,695**	**351,208,735**	
	Iminoco Fields:								
	Rakhsh, 1969*	7,500-9,750	9	1	...	2	34,500	43,155,379	36.7
	Rostam, 1966*	7,200-9,800	8	16	...	3	29,000	70,397,702	38.7
	Total Iminoco *Offshore		**17**	**17**	...	**5**	**63,500**	**113,553,081**	
	Lapco Fields:								
	Sassan, 1966* *Offshore	7,500-8,100	14	...	...	...	195,000	102,556,000	34.1
	NIOC Fields:								
	Nafte Shah, 1923	2,000-3,000	7	...	...	...	18,000	58,512,000	43.0
	Total Iran		**361**	**17**	...	**12**	**6,127,832**	**18,760,932,816**	
IRAQ	Ain Zalah, 1939	5,200-6,500	3	...	...	22	10,885	155,880,296	31.0
	Bai Hassan, 1953	4,800-5,400	3	...	...	29	29,778	225,292,600	35.0
	Jambur, 1954	5,500-11,500	2	...	...	16	3,036	63,399,017	35.0
	Kirkuk, 1927	2,800-4,200	50	...	...	140	930,257	6,260,137,562	36.0
	Naft Kaneh, 1909	3,500	2	...	...	17	11,500	108,367,500	42.5
	Rumaila, 1953	10,800	30	...	...	...	620,6[illegible]	1,912,343,000	35.0
	Rumaila, North, 1958	10,500	30	...	...	...	121,800	80,6[illegible],740	34.0
	Zubair, 1949	11,000	33	...	...	...	101,400	666,076,000	34.2
	Others		...	3	...	10	nil	33,168,740	
	Total		**153**	**3**	...	**234**	**1,829,256**	**9,505,327,455**	
JAPAN	Kubiki, 1954*	1,099- 6,370	122	...	...	7	830	10,560,910	31.0
	Minami-Aga, 1964	7,278- 9,574	15	...	...	3	1,566	10,680,420	38.5
	Sarukawa, 1958	1,914- 5,280	52	2	...	10	1,465	10,598,650	32.8
	Others		246	607	...	39	10,108	94,255,650	
	Total *Offshore.		**435**	**609**	...	**59**	**13,959**	**126,085,630**	
KUWAIT	Ahmadi, 1953	4,800	78						
	Bahrah, 1956	8,500	2						
	Burgan, 1938	4,800	374						
	Magwa, 1951	4,800	99						
	Minagish, 1959	10,000	14				2,578,534	15,351,826,280	
	Raudhatain, 1955	8,500	49						
	Sabriyah, 1957	8,000	45						
	Umm Gudair, 1962	9,300	31						
	Total		**692**						

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
LIBYA	Amal, 1959	9,900	...	...	100	19	104,248	470,117,625	36.0
	Arshad, 1966	10,100	1	...	...	6	551	6,450,538	48.0
	Bahi, 1968	3,600- 3,750	...	40	...	1	84,299	162,979,114	43.4
	Beda, 1959	4,000	29	...	...	3	4,737	75,083,714	36.0
	Belhaden, 1962	7,200	4	...	...	3	2,120	27,798,631	33.7
	Bu-Alawn, 1972	6,000	2	...	...	...	8,992	5,245,790	40.0
	Bu-Attifel, 1968	14,300	20	...	...	5	126,205	86,112,611	41.2
	Dahra, 1959	3,100- 3,700	6	39	...	91	30,704	362,269,654	37.0-41.0
	Defa, 1969	5,400- 5,900	73	...	...	27	156,760	321,621,945	35.6
	Dor-Mansour Unit, 1967	5,800- 6,400	1	4	...	2	4,066	17,826,828	32.2
	Ed Dib, 1970	3,500	...	3	...	1	281	2,896,921	38.0
	Elgiza, 1967	5,100	1	...	...	...	233	331,777	39.0
	Farigh, 1969	12,000	3	...	...	1	143	4,123,007	39.0
	Farrud, 1965	3,200	...	...	6	3	2,073	16,524,144	42.0
	Gialo, 1961	2,200- 6,300	4	157	...	41	203,072	1,089,858,569	35.7
	Intisar A, 1967	9,750	14	...	...	5	73,642	478,010,371	45.0
	Intisar B, 1974*	9,600	...	...	...	2	.....	.....	51.0
	Intisar C, 1967	9,650	4	...	...	3	36,725	57,536,476	37.0
	Intisar D, 1967	9,400	15	...	...	1	203,697	496,105,819	39.5
	Intisar E, 1968**	5,300- 7,100	...	...	...	2	.....	.....	24.0-39.0
	Intisar L, 1969**	7,800- 8,900	...	...	...	1	.....	.....	24.0-35.0
	*On production 1974. **On production 1975.								
	Jebel, 1962	8,100	18	...	...	16	23,394	103,716,669	37.0
	Kotla, 1963	5,500	6	...	...	2	6,742	36,802,175	34.0
	Lehib, 1966	9,100	...	...	...	14	10	29,589,370	49.0
	Majid, 1968	9,600- 9,800	6	...	...	1	9,657	23,738,262	40.5
	Nafoora, 1965†	2,200-10,000	82	...	...	6	114,289	529,228,044	36.0
	Ora, 1962	4,700- 7,500	...	1	...	1	3,547	61,922,484	37.0
	Ora AA, 1973	4,700- 7,500	3	16	...	13	438	76,946	36.0
	Ora BB, 1974	8,082	1	...	...	...	1,133	205,048	37.0
	Nasser (Zelten), 1959**	5,500- 7,600	44	...	83	65	163,884	1,674,885,524	40.0
	Raguba, 1961	5,400	45	...	...	27	70,423	402,113,159	43.0
	Rakb, 1962	2,600- 9,000	3	7	...	1	7,049	23,067,023	34.0
	Ralah, 1964	7,650	2	...	...	2	1,729	6,248,304	37.0
	Sahabi, 1968	10,300	2	5	...	2	4,263	14,514,527	39.0
	Sarir, 1961	9,000	68	...	...	25	162,609	783,109,159	37.2
	Samah, 1961	9,000	11	...	...	9	203,072	231,474,052	33.4
	Umm Farud, 1965	3,200	...	5	...	3	1,805	15,944,591	46.5
	Waha, 1960	6,600	...	50	...	16	118,199	516,833,784	36.1
	Zaggut, 1962	6,000	4	...	...	4	2,489	16,681,342	36.4
	Zelten (see Nasser)								
	Others		1	1	...	83	.....	97,847,123	...
	Total Libya		**462**	**328**	**189**	**507**	**1,937,280**	**8,250,894,116**	
	*Unitized with Augila. **Name change in 1974.								
MEXICO	**Poza Rica, Central Zone**								
	Atún, 1966†	9,040	8	...	...	...	4,938	27,852,560	37.0
	Bagre, 1973	10,919	5	...	...	...	5,307	1,259,361	...
	A. Camacho, 1952	5,340	2	...	8	...	390	2,445,526	35.0
	Cerro Carbón, 1960	9,396	1	...	14	...	721	2,857,055	...
	Hallazgo, 1955	10,170	...	...	52	...	5,342	56,683,646	25.0
	Jiliapa, 1958	7,390	2	...	32	...	2,102	22,858,897	34.0
	Miquetla, 1959	6,480	5	...	29	...	1,929	16,817,266	35.0
	Morsa, 1971	10,434	3	...	...	...	4,367	8,334,585	37.0
	Nvo. Progreso, 1955	7,185	1	...	9	...	625	6,575,349	31.0
	Poza Rica, 1930	7,090	22	...	116	...	55,874	1,062,515,052	35.0
	Remolino, 1962	10,745	...	...	32	...	2,254	15,285,703	...
	Riachuelo, 1972	10,798	3	...	...	...	1,847	988,595	...
	Sn. Andrés, 1956	10,410	5	...	137	...	30,634	241,954,825	29.0
	Others	...	68	18	180	...	2,949	35,080,306	...
	Nueva Faja de Oro, Central Zone								
	Acuatempa, 1955	4,085	14	...	...	...	1,676	22,357,159	21.0
	Alamo-Jardín P. Real	...	26	...	...	...	531	21,857,462	...
	Copal, 1957	4,610	13	...	...	...	775	1,153,343	15.0
	El Muro, 1966	3,966	9	...	...	...	4,189	9,247,024	17.0
	E. Ordóñez, 1952	5,220	10	...	...	...	2,704	51,301,534	21.0
	Mesa Cerrada, 1956	4,085	6	...	...	...	455	10,362,915	22.0
	Ocotepec, 1953	3,737	11	...	...	...	809	17,500,602	20.0
	Sta. Agueda, 1953	4,789	29	...	...	...	6,549	90,473,621	16.0
	Others	...	35	...	...	...	846	17,051,875	...
	Veracruz District, Central Zone								
	Angostura, 1953	4,405	8	...	...	...	463	21,545,836	15.0
	Matapionche, 1974	11,129	1	...	...	...	420	76,106	37.0
	Others	...	2	...	...	...	203	276,839	...
	Isthmus of Tehuantepec, Southern Zone								
	Agata, 1956	3,830	2	...	11	...	653	9,459,411	34.0
	Cuichapa, 1935	2,200	106	5	39	...	30,090	66,638,325	30.0
	El Burro, 1931	2,200	...	15	6	...	1,256	17,317,962	26.0
	El Plan, 1931	1,700	...	27	49	...	4,142	140,398,906	30.0
	Ixhuatl" Ote., 1965	3,952	11	4	...	...	1,366	4,134,584	22.0
	Los Soldados, 1953	4,492	12	...	10	...	2,541	18,378,141	32.0

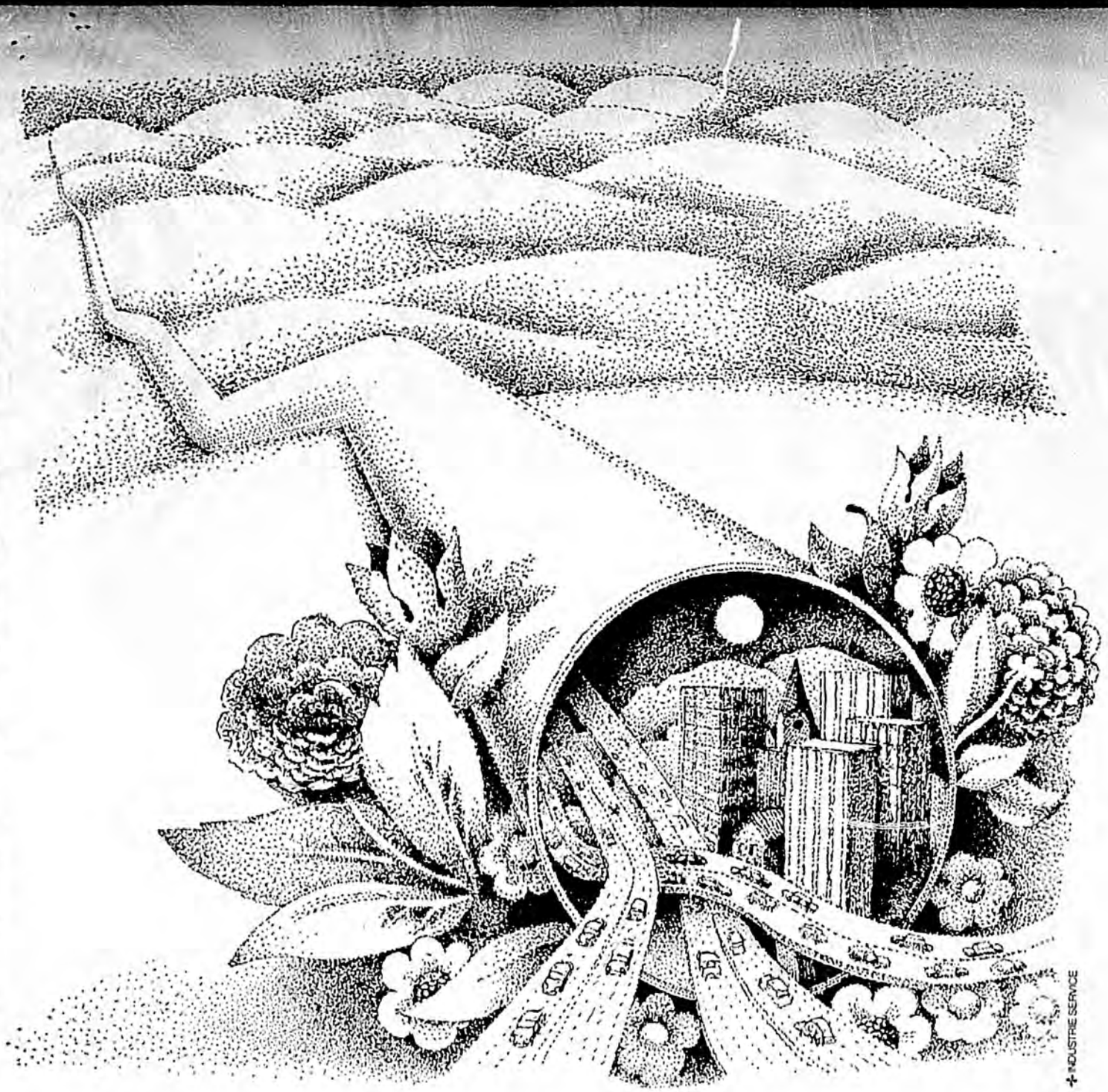
WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
MEXICO—Continued	Moloacán, 1948	1,397	3	118	20	...	3,412	6,513,130	26.0
	Tonalá, 1928	1,770	3	19	13	...	1,387	71,920,815	28.0
	Others	....	14	19	1	...	978	51,484,229	....
	Tabasco, Southern Zone								
	Ayapa, 1973	8,200	5	...	...	...	2,165	63,673	...
	Blasillo, 1967	7,216	2	...	7	...	574	2,166,136	40.0
	Cactus, 1972	12,333	17	...	...	...	30,474	10,709,900	41.0
	Caracolillo, 1969	11,480	5	...	...	...	1,073	2,124,979	...
	Carrizo, 1962	4,820	3	...	10	...	1,760	6,758,641	25.0
	Castarrical, 1967	10,086	9	...	38	...	10,773	21,964,406	34.0
	Cinco Pdtes., 1960	6,862	39	...	92	...	27,444	187,537,807	35.0
	El Golpe, 1963	8,836	23	...	58	...	14,753	44,354,764	35.0
	La Venta, 1954	4,730	1	2	40	...	3,375	44,833,686	41.0
	Northeastern District, Northern Zone								
	Fco. Cano, 1949	5,780	4	...	1	...	321	4,456,456	48.0
	Monterrey, 1950	6,950	4	...	15	...	2,106	9,772,370	47.0
	Tigrillo, 1971	9,844	6	...	6	...	738	648,930	55.0
	Others	....	5	...	1	...	174	14,361,000	....
	Northern District, Northern Zone								
	Arenque, 1970†	11,362	11	...	...	...	22,286	14,476,930	26.0
	Barcodón, 1959	4,370	7	1	...	...	233	8,489,636	17.0
	Constituciones, 1956	6,300	45	...	43	...	6,521	42,777,280	17.0
	Ebano-Pánuco, 1901	1,450	174	124	169	...	7,124	928,232,465	12.0
	Tamaulipas, 1956	4,200	68	...	44	...	8,914	39,838,517	18.0
	Others	....	...	...	...	...	.....	24,481,837	....
	Southern District, Northern Zone								
	Cabo Nuevo, 1967*	5,753	2	...	...	...	1,111	10,292,296	16.0
	Isla de Lobos, 1963†	6,875	3	...	...	...	3,790	17,171,381	40.0
	Moralillo, 1948	5,270	18	...	...	...	586	12,731,752	21.0
	Naranjos-C-A, 1909	1,800	32	...	...	...	7,322	1,151,913,697	20.0
	Pontón, 1971	4,248	2	...	...	...	165	116,163	30.0
	Rancho Nuevo, 1960	6,435	4	...	...	...	228	1,976,135	28.0
	Soledad, 1973	5,222	16	...	...	...	292	54,485	...
	Solís, 1952	2,445	28	...	...	...	324	7,648,658	22.0
	Tiburón, 1965†	7,314	5	...	...	...	1,100	5,226,176	20.0
	Tres. Hnos., 1959	5,960	43	...	...	...	9,466	87,520,585	21.0
	Others	...	109	...	...	...	46	5,982,717	...
	Southern District, Southern Zone								
	Magallanes, 1957	4,240	11	1	151	...	14,640	97,894,473	27.0
	Mecoacán, 1958	7,110	16	...	15	...	3,763	28,320,250	23.0
	Ogarrio, 1957	5,790	56	...	50	...	17,763	82,871,715	38.0
	Otates, 1965	7,469	13	...	6	...	4,993	15,712,718	39.0
	Pajonal, 1967	9,840	2	...	9	...	2,141	2,689,284	27.0
	Rodador 1971	11,398	1	...	1	...	539	179,705	26.0
	Sabancuy, 1973	12,169	1	...	...	...	1,498	440,162	21.0
	Samaria (Cret), 1973	14,209	5	...	...	...	12,160	3,506,364	31.0
	Samaria (Terciario), 1960	2,624	2	...	13	...	1,470	4,434,585	23.0
	San Ramón, 1967	9,883	9	...	48	...	18,020	25,548,239	30.0
	Sta. Ana, 1959*	9,517	1	...	10	...	1,400	29,188,629	29.0
	Santuario, 1966	9,617	21	...	...	...	7,234	8,807,672	37.0
	Sitio Grande, 1972	13,766	15	...	...	...	65,979	16,303,422	35.0
	Tintal, 1968	5,904	6	...	...	...	815	2,049,666	22.0
	Tucán, 1968	10,824	1	...	10	...	1,637	4,831,151	36.0
	Tupilco, 1958	9,685	18	...	26	...	8,729	26,821,406	27.0
	Others	....	10	...	2	...	805	8,321,981	....
	Total Mexico	....	**1,318**	**353**	**1,623**	...	**513,548**	**5,218,204,025**	
*Partly offshore. †Offshore.									
MOROCCO	Haricha, 1957	3,000	1	...	...	...	12	2,754,380	40.0
	Sidi Fili, 1947	3,000	18	2	...	...	80	7,549,200	40.0
	Sidi Rhalem, 1961	5,600	...	1	...	...	800	5,435,000	40.0
	Total		**19**	**3**			**892**	**15,738,580**	
NETHERLANDS	De Lier-Monster, 1955	5,200	...	27	...	4	912	12,731,073	33.2
	Ijsselmonde/Ridderkerk, 1956	3,100- 5,000	...	46	...	11	6,254	63,119,533	18.0-24.2
	Schoonebeek, 1943	2,500	...	213	...	87	14,899	161,982,701	24.8
	Wassenaar-Meyendel, 1956	4,200	...	29	...	3	4,062	32,686,737	18.6
	Zoetermeer, 1957	3,200	...	14	...	4	750	6,781,252	16.4
	Others	....	...	18	...	23	514	8,561,606	....
	Total			**347**		**132**	**27,391**	**265,862,902**	
NEUTRAL ZONE	Hout, 1969*	4,500- 9,500	26	...	...	...	41,285	109,117,322	34.0
	Khafji, 1961*	4,500- 9,500	101	...	...	...	292,611	1,172,039,432	28.4
	So. Fuwaris, 1962	6,300	...	3	...	5	2,345	11,334,034	24.5
	So. Umm Gudair, 1966	9,100	9	7	...	1	52,343	105,576,540	24.3
	Wafra								
	Burgan, 1953	3,600	9	38	...	8	21,030	187,850,367	24.0
	Eocene, 1954	1,100- 2,200	5	215	...	95	18,917	350,320,592	18.5
	Ratawi, 1955	7,000	3	33	...	3	56,842	290,773,449	24.3
	Total		**153**	**296**	...	**112**	**485,313**	**2,227,011,736**	
*Offshore.									

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
NEW ZEALAND	Kapuni, 1959	11,300-12,500	4	...	...	...	†3,780	4,357,500	49.0
	Others	....	...	...	...	...	.....	217,000	....
	Total		4	...	...	...	3,780	4,574,500	
*Condensate. Note: Offshore Maui field not yet on production.									
NIGERIA	**Gulf Oil**								
	Abiteye, 1970	5,750- 9,400	8	...	...	2	9,248	6,934,793	38.2
	Delta, 1965*	5,600- 9,400	17	...	...	2	37,634	44,435,338	27.9
	Delta South, 1965*	7,100- 9,200	16	...	...	3	54,084	103,501,132	38.1
	Isan, 1970*	5,800- 9,000	11	...	...	...	15,948	15,213,726	39.3
	Malu, 1969*	4,800- 6,300	15	...	...	...	18,838	28,199,249	39.2
	Meji, 1965*	5,200-10,900	16	...	...	...	22,667	38,584,255	32.6
	Meren, 1965*	5,000- 7,500	47	...	...	2	126,044	175,341,136	32.3
	Okan, 1964*	5,500- 8,900	42	...	...	4	72,395	205,723,519	34.9
	Parabe/Eko, 1968*	4,500- 8,200	23	...	...	2	32,518	42,547,183	37.0
	Mobil Oil								
	Asabo, 1966*	5,412	11	...	...	2	42,300	54,807,484	34.0
	Ekpe, 1966*	7,503	7	...	...	1	69,300	58,791,081	39.0
	Etim, 1968*	6,147	7	...	...	...	33,300	16,267,771	38.0
	Enang, 1968*	5,250	9	...	...	2	1,751	315,175	34.0
	Idoho, 1966*	8,536	3	...	...	1	5,480	18,211,373	40.0
	Inim, 1966*	5,914	7	...	...	...	44,100	29,769,407	37.0
	Ubit, 1968*	4,842	17	...	...	4	23,100	39,620,998	36.0
	Unam, 1968*	5,000	4	...	...	...	13,900	530,267	36.0
	Utue, 1966*	5,914	5	...	...	1	22,200	15,141,197	38.0
	Agip-Phillips (estimated)								
	Akri, 1973	8,000-10,000	8	...	...	...	16,569	n.a.	44.4
	Ebocha, 1965	9,200-10,100	21	...	...	...	39,173	48,728,741	42.3
	Idu, 1973	8,000-10,000	7	...	...	...	9,097	5,143,478	30.9
	Mbede, 1966	9,850-10,800	24	...	...	...	49,909	48,545,639	43.2
	Ofiafu/Obrikom, 1973	8,000-10,000	16	...	...	...	29,912	10,918,026	44.5
	Obigbo, 1969	.....	1	...	...	...	926	338,000	38.1
	Obigbo N., 1969		14	...	...	...	19,580	7,146,646	23.4
	Odugri, 1972	12,500	2	...	...	...	832	303,500	44.8
	Elf-Nigeria (ex Safrap)								
	Aghigho, 1972	6,000- 8,500	5	...	...	1	3,120	597,283	26.0
	Erema, 1972	9,800	1	...	...	1	416	24,946	35.0
	Obagi, 1964	1,000-10,000	26	...	...	4	63,835	74,961,418	24.0
	Odobo-Jatumi, 1966	6,000-11,000	5	...	...	2	7,333	1,770,871	35.0
	Okpoko, 1967	6,000- 7,500	3	...	...	...	5,892	1,355,367	22.0
	Upomami, 1965	6,000- 7,000	6	...	...	3	4,357	1,086,152	20.0
	Texaco-Chevron								
	Pennington, 1964*†	5,000-12,000	3	...	...	...	4,110	12,182,279	37.9
†Field shut in May 8, 1974, by government order. Production to resume in 1975.									
	Shell-British Petroleum (Midwest)								
	Ugh-Ogini, 1964	5,860	7	...	...	2	4,873	6,291,890	17.5
	Ugh-Uzere East, 1960	8,500	13	...	...	...	18,467	41,887,333	22.6
	Ugh-Uzere West, 1960	8,500	10	...	...	1	17,378	58,836,870	27.7
	Ugh-Olomoro, 1963	7,000-10,000	21	...	...	10	42,279	160,063,745	22.3
	Ugh-Oweh, 1964	12,300	11	...	...	...	13,221	58,798,402	26.8
	Ugh-Kokori, 1961	8,000- 9,800	20	...	...	2	73,217	160,741,361	44.9
	Ugh-Afiesere, 1966	8,000- 9,000	20	...	...	1	18,706	32,192,357	23.8
	Ugh-Eriemu, 1961	12,550	9	...	...	2	7,007	11,507,010	29.9
	Ugh-Ughelli E., 1959	11,800	7	...	...	1	21,373	52,220,488	33.6
	Ugh-Ughelli W., 1959	7,400-10,200	6	...	...	...	6,622	14,125,498	20.0
	Ugh-Utorogu, 1964	9,000	18	...	...	1	39,861	70,337,190	25.0
	Ugh-Oroni, 1964	12,000	6	...	...	1	6,878	10,716,902	19.0
	Ugh-Warri R., 1961	12,264	3	...	...	...	4,232	4,834,250	30.8
	Ugh-Evwreni, 1967	10,900	6	...	...	3	8,053	18,830,552	25.0
	Ugh-Rapele, 1965	12,934	3	...	...	...	9,408	8,753,470	25.0
	Ugh-Osioka, 1967	12,885	2	...	...	...	1,985	2,601,353	30.0
	Forc-Jones Cr., 1967	7,000- 9,000	28	...	...	1	126,933	160,616,935	25.0
	Forc-Odidi, 1967	10,980	19	...	...	1	58,437	38,488,800	30.0
	Forc-Egwa, 1967	9,350	15	...	...	...	28,246	32,367,979	37.0
	Forc-Yokri, 1971	10,859	2	...	...	...	2,496	523,3[illegible]7	24.3
	Forc-Estuary, 1969	7,000	51	...	...	1	132,500	134,037,504	25.0
	Forc-Batan, 1968	11,000	7	...	...	...	16,948	13,847,735	21.0
	Forc-Escravos Beach, 1969	9,391	8	...	...	...	13,128	9,396,840	36.0
	Forc-Ajuju, 1970	13,324	1	...	...	...	3,545	2,769,310	30.0
	Forc-Otumara, 1970	8,176	15	...	...	1	41,283	20,810,236	30.0
	Forc-Saghara, 1970	8,950	3	...	...	...	7,107	4,027,044	30.0
	Node-Sapele, 1970	12,788	10	...	...	1	45,165	20,854,110	41.0
	Node-Amukpe, 1970	12,378	2	...	...	...	6,863	4,682,011	41.0
	Node-Oben N., 1973	10,016	1	...	...	...	71	12,893	30.0
	Node-Oben, 1972	12,036	2	...	...	...	1,274	230,684	30.0
	Others	....	...	...	...	...	57	261,514	...
	Shell-British Petroleum (Eastern)								
	Phl-Bomu, 1968	6,700- 7,500	27	...	...	4	34,964	241,018,633	33.2
	Phl-Isimiri, 1964	5,900-11,000	5	...	...	...	6,533	17,073,605	28.8
	Phl-Imo R., 1959	5,800-10,100	37	...	...	3	72,437	244,172,825	32.0
	Phl-Ebubu, 1958	8,200	6	...	...	2	2,359	13,303,428	26.0
	Phl-Onne, 1965	10,384	2	...	...	...	1,830	2,281,468	30.0
	Phl-Nkali, 1963	12,000	5	...	...	1	3,647	13,355,420	41.0

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
NIGERIA—Continued	Phl-Obigbo N., 1963	6,500-10,000	16	...	...	3	20,780	80,982,506	24.2
	Phl-Obigbo, 1963	....	1	...	...	1	951	210,086	30.0
	Phl-Elelenwa, 1959	11,000	6	...	...	...	8,368	8,937,748	38.0
	Phl-Agbada, 1960	8,000-12,000	26	...	...	2	28,942	65,425,100	32.1
	Phl-Umuechem, 1959	5,500-10,700	15	...	...	...	16,624	97,494,795	37.6
	Phl-Apara, 1960	9,000	5	...	...	1	1,965	5,415,138	34.0
	Phl-Obele, 1964	10,000	3	...	...	7	767	1,826,971	22.0
	Phl-Bodo W., 1962	9,700	9	...	...	1	18,615	40,833,020	22.5
	Phl-Afam, 1956	6,000	11	...	...	2	11,337	22,999,177	45.0
	Phl-Korokoro, 1969	8,000- 9,800	7	...	...	1	13,325	56,898,741	35.2
	Phl-Yoria, 1970	11,917	13	...	...	...	32,144	16,986,040	30.0
	Phs-Alakiri, 1962	10,000	10	...	...	5	17,250	38,029,467	32.5
	Phs-Bonny, 1959	12,254	10	...	...	1	19,199	6,237,242	30.4
	Phs-Buguma Cr., 1960	12,195	6	...	...	...	10,871	6,679,915	35.0
	Phs-Cawth. Channel, 1963	11,000	10	...	...	2	46,894	97,632,450	39.0
	Phs-Ekulama, 1958	10,483	11	...	...	...	24,838	12,425,479	20.2
	Phs-Krakama, 1958	11,530	5	...	...	...	6,075	4,251,037	38.0
	Phs-Soku, 1958	11,500	22	...	...	...	41,004	32,365,903	35.0
	Phs-Oloibiri, 1956	8,000- 9,800	6	...	...	5	3,006	17,445,343	22.0
	Egb-Oguta, 1965	10,300	16	...	...	...	30,377	35,389,412	30.0
	Egb-Assa, 1961	11,300	2	...	...	...	970	1,033,503	17.5
	Egb-Egbema, 1960	10,470	6	...	...	...	11,978	22,618,410	28.0
	Egb-Ahia, 1965	11,500	12	...	...	1	20,611	44,614,750	35.5
	Cesw-Nun R., 1974	....	5	...	...	...	9,435	2,106,429	37.0
	Cesw-Diebu Cr., 1974	....	8	...	...	...	21,630	1,190,956	30.0
	Cesw-Adibawa, 1966	11,950	8	...	...	...	14,368	56,878	30.0
	Cesw-Ubie, 1970	14,380	4	...	...	...	7,516	2,625,824	3.00
	Cesw-Etelebou, 1971	12,000	6	...	...	...	23,232	6,700,680	30.0
	Cesw-Kolo Cr., 1974	12,000	14	...	...	...	33,710	9,532,919	30.0
	Others	....	...	...	...	...	.....	181,470	....
	Total Nigeria		**1,088**	...	...	**103**	**2,296,035**	**3,544,936,991**	
NORWAY	Ekofisk, 1970*	10,200-10,900	6	...	...	...	25,000	28,717,062	36.5
	*Offshore								
OMAN	Fahud-Natih, 1964	2,000- 6,080	56	...	...	21	112,566	396,109,520	32.5
	Huwaisa-Shuaiba, 1970	5,550	20	...	...	...	42,500	44,284,651	33.0
	Natih-Natih, 1962	7,500	23	...	...	7	48,841	185,267,598	31.3
	Yibal,Shuaiba, 1962	8,465	61	...	...	2	92,998	97,460,164	39.7
	Total		**160**	...	...	**30**	**296,905**	**723,121,933**	
PAKISTAN	Balkassar, 1946	8,200	...	3	1	...	1,761	19,980,993	24.3
	Dhulian, 1937	8,500	5	1	1	...	1,917	36,783,716	43.0
	Joya Mair, 1944	6,890	1	...	...	...	328	3,874,614	16.0
	Meyal, 1968	12,500	2	...	...	...	2,467	4,229,191	44.0
	Toot, 1968	13,600	2	...	...	...	590	1,240,207	35.2-37.5
	Total		**10**	**4**	**2**		**7,063**	**66,108,721**	
PERU	**COASTAL**								
	Talara Area, 1869-1943†	2,000- 9,000	90	1,104	...	4,200	11,100	534,269,000	25.0-40.0
	Lima Concessions, 1905	2,000- 9,000	54	900	...	1,138	23,000	160,527,000	32.0-35.0
	Others	500- 1,500	...	...	...	21	...	110,901,902	
	ORIENTE								
	Agua Caliente, 1939	1,000- 1,500	...	22	...	8	600	13,090,303	34.0
	Maquia, 1957	1,000- 1,500	6	6	...	2	1,050	6,608,585	37.0
	CONTINENTAL SHELF								
	Humboldt, 1960*	3,000- 7,500	45	68	...	17	29,750	38,161,750	38.0
	Litoral & Mirador, 1955*	1,500- 6,000	...	98	...	12	3,200	25,506,063	37.0-40.0
	Providencia, 1967	3,000- 6,000	...	18	...	22	950	9,451,253	38.0-40.0
	Others		1	...	...	2	50	549,000	
	SIERRA								
	Pirin, 1906		...	...	...	...	...	287,000	
	Total		**196**	**2,216**	...	**5,422**	**69,700**	**899,351,856**	
	*Offshore								
	†Includes La Brea y Parinas, Los Organos, and PDP-Belco.								
QATAR	Bul Hanine, 1970*	6,000	5	...	...	...	138,463	94,609,357	35.0
	Dukhan, 1940	6,550	56	...	...	4	251,000	1,460,050,000	41.1
	Idd El Shargi, 1960*	4,500- 8,250	10	...	...	4	24,088	140,572,915	35.5
	Mayden-Mahzan, 1963*	7,000- 7,600	10	...	...	1	132,518	376,634,216	38.0
	Total		**81**	...	...	**9**	**546,069**	**2,071,866,488**	
	*Offshore.								
SAUDI ARABIA	Abqaiq, 1940	6,670	64	...	...	2	870,659	4,629,594,964	38
	Abu Hadriyah, 1940*	9,930	9	...	...	3	102,105	280,909,047	35
	Abu Sa'fah, 1963*	6,650	10	...	...	6	121,479	255,863,778	30
	Berri, 1964†	7,450	42	...	...	6	639,517	609,627,402	33-38
	Dammam, 1938	4,620	18	...	...	...	17,793	534,855,162	34
	Fadhili, 1949	8,110	4	...	...	2	49,281	148,204,174	40
	Ghawar, 1948	6,700	378	...	...	70	4,653,452	9,958,791,384	35
	Harmaliyah, 1971	8,400	6	...	...	...	129,877	38,979,403	36

WORLDWIDE PRODUCTION	discovery date Name of field and	(ft) Depth	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
SAUDI ARABIA—Continued	Khurais, 1957	5,100	8	...	...	1	23,594	45,736,418	33
	Khursaniyah, 1956	6,750	11	...	...	...	115,372	451,365,249	31
	Maharah, 1973*	7,000	...	...	...	1	.....	.....	34
	Manifa, 1957*	7,950	6	...	...	2	34,861	117,816,263	28
	Marjan, 1966*	5,200	1	...	...	6	1,894	632,396	32
	Mazalij, 1971	6,200	...	...	...	3	.....	.....	31
	Qatif, 1945†	7,050	19	...	...	4	93,656	432,287,561	31
	Qirdi, 1973	5,300	...	...	...	1	.....	.....	38
	Safaniyah, 1951†	5,100	83	...	...	13	1,019,123	2,841,434,660	27
	Shaybah, 1968	5,000	...	...	...	7	.....	9,870	42
	Zuluf, 1965*	5,800	11	...	...	1	193,446	87,645,208	32
	Karan, 1967*	5,500	...	...	...	1	.....	.....	22
	Jana, 1967*	7,400	...	...	...	2	.....	.....	35
	Juraybiat, 1968	7,600	...	...	...	1	.....	.....	29
	Rimthan, 1974	10,000	..	...	...	1	.....	.....	28-38
	Ramlah, 1974	9,500	...	...	...	1	.....	.....	33
	Total		**670**	...	...	**134**	**8,066,109**	**20,433,743,938**	
	*Offshore. †Partly offshore.								
SHARJAH	Mubarek, 1972	12,650-12,870	3	...	...	...	(*)	(*)	39.5-40.3
	*Note: field went on production in July, 1974 at 50,000-60,000 b/d.								
SPAIN	Ayoluengo, 1964	4,000	...	21	...	5	1,805	7,394,800	37.0
	Amposta Marina, 1971*	10,000	3	...	...	1	35,625	10,763,466	37.0
	Total		**3**	**21**	...	**6**	**37,430**	**18,158,266**	
	†Offshore.								
SYRIA†	Hamsch, 1956	6,000	...	...	...	1	.....	.....	21.0
	Jibissa, 1968	6,000	..	...	...	1	.....	.....	23.0
	Karatchouk, 1956	6,500	13	3	...	1	20,000		23.0
	Rumalan, 1956	6,500	4	...	...	1	10,000	216,300,000	25.0
	Souedie, 1959	6,500	80	23	...	31	125,000		25.0
	Total		**97**	**26**		**35**	**155,000**	**216,300,000**	
	†Data estimated.								
THAILAND	Boh Ton Kham (Chai Prakarn), 1953	700	...	12	...	12	14	202,000	16.0-17.0
	Mae Soon Luang, 1963	2,000- 2,500	1	12	...	5	184	454,100	32.0
	Total		**1**	**24**	...	**17**	**198**	**656,300**	
TRINIDAD & TOBAGO	Area 1								
	North Marine, 1959*	3,000-15,000	1	...	...	7	99	1,221	23.2
	Soldado, 1955*	2,150-11,000	131	21	88	83	51,323	262,819	24.8
	Area 2								
	Area IV + Guapo, 1913-1922	1,000-10,626	1	35	...	110	474	32,767	16.9-25.5
	Parrylands, 1913-1918		14	42	...	150	886	33,828	10.7-30.2
	Pt. Fortin Central & West, 1907-1916		18	33	...	136	773	29,846	20.4-45.1
	Area 3								
	Brighton, 1908†	700- 7,500	41	31	71	286	2,783	66,524	32.8
	Area 4	240-12,718							
	Palo Seco, 1926-1929		...	6	...	63	23	1,583	22.1
	Palo Seco Erin, 1915-1926		65	277	105	417	9,746	76,953	21.2
	Area 5	500-11,000							
	Forest Reserve, 1913		34	268	270	1,097	11,506	231,581	23.0
	Fyzabad, 1918-1920		15	213	14	325	3,954	151,196	20.8-32.7
	Pt. Fortin East, 1929		4	39	12	47	1,680	21,365	34.4
	Area 6	288-14,000							
	Coora-Quarry, 1936		9	99	66	352	3,109	78,940	20.4-24.1
	Area 7								
	Oropouche, 1944		13	17	6	33	2,007	3,920	19.8-38.6
	Area 8	1,300-11,067							
	Barrackpore, 1911		12	13	23	143	1,653	23,324	26.9-41.2
	Penal, 1936		29	47	9	87	1,954	55,864	37.5-55.7
	Wilson, 1936		4	25	4	37	364	18,719	26.4
	Area 9								
	Catshill, 1950		2	46	...	28	831	20,251	38.3-46.3
	Moruga North, West, 1956		1	30	..	73	335	9,216	25.0-31.4
	Trinity, 1956		1	13	17	40	491	12,992	32.2
	Area 10								
	Guayaguayare, 1903	500-10,750	10	155	59	321	5,943	72,996	33.7
	Area 11								
	Galeota, 1972*	1,100- 6,304	..	15	...	3	1,333	1,231	31.6
	Teak, 1972*	6,960-15,191	28	...	...	11	49,923	33,084	29.3
	Samaan, 1973*	8,719-11,780	14	...	...	1	23,841	10,131	36.8
	Others	3,000- 7,560	70	236	38	1,020	6,219	188,891	14.1-40.7
	Trinidad & Tobago Total		**517**	**1,661**	**782**	**4,870**	**181,250**	**1,439,242**	
	*Offshore. †Partly offshore.								

WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of Wells: Flowing	Pumping	Gas Lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
TUNISIA†	**AQUITAINE**								
	Ashtart, 1971*	9,450- 9,700	6	...	...	...	12,442	1,231,721	29.0
	Douleb, 1966	3,300	...	11	...	2	5,071	9,568,527	40.2
	Tamesmida, 1968	4,950	...	2	...	1	364	818,708	35.4
	ENI (Sitep)								
	El Borma, 1964	8,250- 8,900	35	...	...	15	52,300	198,080,058	42.5
	CFP								
	Sidi el Itayem, 1971	9,232	4	...	...	...	3,870	4,278,000	40.0
	TOTAL		45	13	...	18	74,047	213,997,014	
†Some data estimated. *Offshore; production began Dec., 1973.									
TURKEY	Ersan:								
	Kahta, 1958	3,500	...	5	...	1	721	3,446,651	11.5
	Mobil:								
	Bulgurdag, 1960	6,500	...	1	...	2	102	2,203,000	39.0
	Selmo, 1964	5,800	2	10	2	2	8,542	36,286,785	34.4
	Shell:								
	Barbes, 1972	7,200	6	...	...	1	4,897	3,310,512	29.6
	Beykan, 1964	5,200	13	...	...	4	11,039	36,323,667	33.2
	Katin, 1971	6,800	2	...	...	1	1,767	1,497,369	29.5
	Kayakoy, 1961	6,000	5	...	...	2	1,934	8,285,208	38.2
	Kayakoy West, 1964	5,300	4	...	...	3	3,341	11,959,801	34.0
	Kurkan, 1963	4,500	8	...	...	1	9,435	28,201,015	31.4
	Malatepe, 1970	5,000	4	...	...	1	867	2,251,492	32.7
	Malatepe W., ?	....	...	...	...	...	859	.....	31.3
	Piyanko, 1968	6,300	1	...	...	...	279	938,726	35.5
	Sahaban-Kurkan So., 1967	5,500	6	...	...	...	2,153	10,752,171	34.7
	Others	....	2	...	...	...	176	43,357	....
	TPAO:†								
	Adiyaman, 1971	5,600	...	12	...	2	2,745	2,585,590	26.6
	Garzan-Germik, 1951	5,100	...	38	...	32	2,974	26,346,869	25.0
	Magrip, 1961	6,400	...	13	...	12	1,161	11,212,275	19.3
	Raman, 1940	4,500	...	24	...	23	3,005	21,460,854	18.5
	Raman West, 1961	4,300	...	126	...	12	4,689	18,960,191	13.4
	Saricak, 1973	....	4	...	...	...	2,100	765,000	31.5
	Silivanka, 1962	7,500	...	14	...	1	1,547	3,244,058	19.6
	Yenikoy, 1973	....	8	...	...	...	551	200,000	31.0
	Others	....	...	6	...	...	412	2,784,625	....
	Total Turkey		65	249	2	100	65,296	233,059,216	
†Data estimated.									
UNITED KINGDOM	Beckingham, 1964	3,200- 6,600	...	8	...	...	442	415,327	...
	Bothamsall, 1958	3,300	...	6	...	7	224	2,024,707	....
	Egmanton, 1955	3,250	...	8	...	35	148	2,996,303	....
	Gainsborough, 1959	3,200- 4,600	...	25	...	17	502	2,431,270	....
	Kimmeridge, 1959	1,800	...	9	...	5	184	9,959,536	....
	Total		...	56	...	64	1,500	17,827,143	
VENEZUELA*	**STATE OF ANZOAETEGUI**								
	Araibel, 1954	8,970-10,516	6	...	...	30	1,319	26,189,621	38.7
	Boca, 1951	9,500	10	10	...	60	3,238	69,270,383	35.4
	Caico Seco, 1946	6,500- 7,300	13	6	...	61	4,890	44,814,504	35.5
	Chimire, 1948-52	7,000- 7,200	35	34	...	135	11,373	339,788,339	34.9
	Dacion, 1957	6,700	12	79	...	30	10,724	170,413,260	34.2
	Elias, 1954	5,000- 6,470	43	16	...	64	24,368	68,141,820	41.1
	El Roble, 1939	3,500-11,500	13	1	...	31	920	36,523,800	49.5
	Guara, 1946	5,000-10,000	24	158	...	200	22,465	490,605,725	27.3
	Guaria, 1940	5,000-10,000	3	...	...	27	2,326	43,614,990	50.2
	Guico, 1944	4,500- 7,000	2	29	...	48	2,075	82,607,375	26.9
	Inca, 1948	7,250	2	3	...	21	984	12,899,160	36.8
	Junta, 1954	6,720	...	7	...	16	609	22,433,285	20.4
	La Ceiba, 1946	9,480	18	6	...	10	7,250	27,528,250	43.1
	La Ceibita, 1963	9,870- 9,878	26	...	...	19	12,777	59,763,605	43.8
	Leona, 1938	2,200-12,800	11	73	...	128	11,040	130,298,600	22.4
	Mapiri Este, 1952	9,500	2	6	...	32	1,268	23,185,820	37.0
	Mata, 1954	9,000-12,500	75	77	...	325	34,006	439,336,190	33.3
	Merey, 1937	5,400- 5,700	9	255	...	120	22,400	173,304,000	11.1
	Nipa, 1945	6,000- 8,500	66	99	...	270	24,713	430,667,245	28.0
	Oficina, 1937	5,900	54	115	...	380	38,386	646,641,890	20.5
	Oscurote, 1952	9,513	9	28	...	45	8,374	109,956,510	20.3
	Rosa, 1958	1,250-11,412	2	...	...	1	961	7,079,297	51.7
	San Joaquin, 1939	6,560	20	2	...	52	2,804	77,666,460	46.4
	Santa Ana, 1936	8,500	28	3	...	54	6,290	86,656,850	37.9
	Santa Rosa, 1941	8,500	117	3	...	58	29,093	299,026,945	44.9
	Soto, 1950	9,500	29	13	...	151	7,093	160,473,945	36.8
	Tapuco, 1953	10,000	4	2	...	21	1,382	24,985,340	34.0
	Yopales, 1937	4,600	8	52	...	71	9,250	90,354,250	21.2



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WORLDWIDE PRODUCTION	Name of field and discovery date	Depth (ft)	No. of wells: Flowing	Pumping	Gas lift	Shut in	Production in bbl: Daily avg. 1st 6 mo. 1974	Cumulative 7/1/74	Gravity °API
VENEZUELA*—Continued	Zanjas, 1958	13,270	7	...	...	6	4,353	20,509,845	34.1
	Zapatos, 1955	11,500	15	...	...	47	9,831	111,995,315	37.0
	Zorro, 1953	11,100	10	4	...	12	5,019	57,754,935	25.0
	Zulus, 1957	12,710	7	...	...	11	2,012	14,827,380	33.4
	Zumo, 1954	9,200	5	25	...	17	4,791	68,747,715	16.8
	Others		75	31	...	273	21,071	186,607,915	
	Total		**760**	**1,137**	**...**	**2,626**	**349,455**	**4,654,670,564**	
	FEDERAL TERRITORY OF AMACURO								
	Tucupita, 1945	5,600	15	15	...	35	2,996	46,278,413	16.8
	Others		...	...	...	25	....	57,415,540	
	Total		**15**	**15**	**...**	**60**	**2,996**	**103,693,953**	
	STATE OF MONAGAS								
	Acema, 1960	12,520-13,750	35	14	...	34	23,084	56,140,600	26.4
	Aguasay, 1955	8,100-13,400	25	7	...	45	8,788	76,317,387	38.5
	Jobo, 1956	3,600- 4,000	7	99	...	37	37,560	59,580,400	11.9
	Morichal, 1958	3,312	...	106	...	62	28,610	111,442,650	10.4
	Oritupano, 1950	7,657	20	55	...	35	20,135	102,932,275	19.3
	Orocual, 1933	2,954	9	4	...	24	2,514	16,562,610	20.6
	Pirital, 1958	450- 1,100	...	58	...	8	2,594	18,276,810	17.2
	Quiriquire, 1928	7,000-7,200	...	350	...	110	15,420	723,929,300	16.3
	Santa Barbara, 1941	5,020- 6,500	15	105	...	215	3,500	157,605,325	27.8
	Tacat, 1953	1,830- 3,668	...	53	...	69	2,561	36,222,265	17.2
	Temblador, 1936	3,500- 4,500	4	40	...	6	5,282	98,149,430	20.0
	Others		15	68	...	205	5,661	399,066,265	
	Total		**130**	**959**	**...**	**850**	**157,709**	**1,855,225,377**	
	STATE OF GUARICO								
	Las Mercedes, 1942	1,200- 4,500	2	52	...	100	1,447	126,996,155	27.6
	Ruiz, 1949	4,450	4	23	...	11	1,000	30,775,650	33.1
	Budare, 1958	4,523	22	...	...	10	24,408	38,685,920	31.8
	Others		10	87	...	135	2,551	68,585,115	
	Total		**38**	**162**	**...**	**256**	**29,403**	**265,042,840**	
	STATE OF BARINAS								
	Tato Viejo, 1961	9,543	2	8	...	2	3,822	29,189,030	27.1
	Maporal, 1957	10,944	...	3	...	2	2,116	7,478,340	28.1
	Silvan, 1949	10,862	1	6	...	1	2,641	36,235,965	28.5
	Silvestre, 1948	8,850	1	26	...	12	9,552	105,944,980	24.8
	Sinco, 1953	8,500- 9,100	6	34	...	29	18,798	200,562,270	25.7
	Others		14	10	...	3	10,718	14,263,770	
	Total		**24**	**87**	**...**	**49**	**47,647**	**393,674,355**	
	STATE OF FALCON								
	Tiguaje, 1953	3,300	...	13	...	9	735	8,544,275	26.3
	Others		...	40	...	78	331	97,167,815	
	Total		**...**	**53**	**...**	**87**	**1,066**	**105,712,090**	
	STATE OF ZULIA								
	Bachaquero, 1930†	3,444	190	1,980	...	943	533,605	4,684,433,425	22.4
	Barua, 1958	10,500	4	1	...	1	3,667	12,585,955	19.8
	Boscan, 1946	6,500- 7,500	...	259	...	109	44,634	479,171,910	10.4
	Cabimas, 1917†	2,200	113	467	...	229	79,072	1,055,303,280	23.7
	Centro, 1957	12,568	67	6	...	54	113,000	349,199,000	33.6
	Cruces Manueles, 1916	300- 8,000	9	62	...	26	3,357	162,549,700	30.5
	Ceuta, 1956	9,600-11,000	27	34	...	34	63,700	232,117,500	29.5
	La Concepcion, 1953	3,148- 8,000	3	77	...	40	5,459	114,657,835	35.0
	Lago, 1958	11,450	26	...	...	17	38,346	121,610,290	31.5
	Lagunillas, 1926†	3,000	710	2,410	...	850	803,328	8,469,651,370	24.2
	Lama, 1957	8,320	158	70	...	88	259,774	1,819,755,610	32.8
	Lamar, 1958	13,003	62	11	...	37	131,569	669,111,285	34.1
	La Paz, 1925	4,268- 8,000	13	63	...	30	16,800	770,915,100	32.0
	Los Claros, 1960	9,328	...	7	...	7	4,352	29,169,980	10.4
	Mara, 1945	5,248	7	45	...	40	9,009	375,227,758	27.7
	Mena Grande, 1914	4,132	1	291	...	177	11,007	578,854,384	18.8
	Sibucara, 1948	13,451	...	1	...	3	1,203	39,289,095	35.3
	Tarra W., 1947	4,250- 5,500	6	14	...	14	3,113	63,340,750	38.3
	Tia Juana, 1928	3,000	124	1,656	...	326	296,566	2,734,086,916	18.8
	Others		19	6	...	23	11,306	28,525,378	
	Total		**1,539**	**7,460**	**...**	**3,048**	**2,432,867**	**22,998,556,521**	
	Venezuela total		**2,506**	**9,873**	**...**	**7,176**	**3,021,146**	**30,377,575,700**	
	†Partly offshore								
	*Data estimated								
ZAIRE	GCO, 1970*	11,825	...	...	...	5	.....	.....	30.0
	Mibale, 1973*	5,000- 6,000	...	...	...	3	.....	.....	31.0

*These offshore fields may go on stream at 25,000 b/d in 1976.

Total wells drilled in the United States*—October 1974†

Data compiled by API

State-district	Total completions: Oil‡	Gas§	Dry holes	Total wells	Total footage	Total wells all types‖	Total footage‖	Total exploratory wells¶: Oil‡	Gas§	Dry holes	Total wildcats	Footage
Alabama	1	1	1	3	48,359	3	48,359	1	...	1	2	32,659
Alaska	1	1	....	2	10,895	2	10,895	...	1	....	1	695
Arkansas	7	....	15	22	124,451	23	132,432	1	...	9	10	71,752
California	86	9	29	124	402,371	142	416,195	3	3	13	19	111,410
North	....	8	19	27	163,926	27	163,926	...	3	9	12	77,107
Central Coastal	20	....	3	23	79,244	24	80,524	1	...	3	4	21,240
East Central	60	1	7	68	137,842	71	140,184	2	...	1	3	13,063
South	3	....	....	3	8,435	17	18,637	...	...	....	....	.....
Offshore	3	....	....	3	12,924	3	12,924	...	...	....	....	.....
Colorado	26	22	51	99	595,296	105	634,881	4	3	30	37	213,893
Florida	1	....	....	1	11,896	2	14,051	...	...	....	....	.....
Idaho	....	....	1	1	120	1	120	...	...	1	1	120
Illinois	31	2	30	63	138,896	63	138,896	...	...	8	8	20,977
Indiana	19	2	31	52	91,865	56	97,207	2	1	19	22	37,363
Iowa	....	....	2	2	3,385	2	3,385	...	...	2	2	3,385
Kansas	107	27	107	241	584,820	254	599,132	6	1	51	58	188,695
Kentucky	11	7	29	47	65,906	52	73,190	2	...	12	14	23,987
Louisiana	76	64	109	249	1,631,031	257	1,688,765	2	3	67	72	592,391
North	38	45	47	130	539,676	133	540,998	1	2	35	38	254,034
South	24	11	31	66	604,384	67	611,943	1	....	14	15	178,124
Offshore	14	8	31	53	486,971	57	535,824	...	1	18	19	160,233
Michigan	16	2	28	46	225,461	46	225,461	6	2	22	30	143,804
Mississippi	8	5	28	41	285,400	46	305,100	1	....	13	14	128,525
Missouri	....	....	3	3	7,572	13	9,353	...	....	3	3	7,572
Montana	5	23	62	90	281,696	90	281,696	...	5	39	44	158,158
Nebraska	5	1	28	34	174,708	34	174,708	1	...	24	25	127,385
New Mexico	27	31	21	79	429,687	79	429,687	...	4	11	15	93,922
East	25	19	20	64	375,869	64	375,869	...	4	11	15	93,922
West	2	12	1	15	53,818	15	53,818	...	...	....	....	.....
New York	13	....	....	13	18,270	18	24,805					
North Dakota	8	....	15	23	164,821	23	164,821	2	...	9	11	77,449
Ohio	47	61	16	124	517,865	125	522,167	1	8	1	10	44,680
Oklahoma	98	74	104	276	1,364,869	291	1,398,505	..	9	28	37	264,204
Pennsylvania	43	33	7	83	180,419	94	197,635	2	4	6	12	44,680
Tennessee	5	....	6	11	19,127	11	19,127	2	...	6	8	14,937
Texas	375	150	413	938	5,113,271	961	5,181,870	21	43	211	275	1,700,706
Dist. 1	9	1	6	16	53,533	17	58,653	...	...	5	5	19,172
Dist. 2	9	28	29	66	372,392	67	377,502	1	15	18	34	204,449
Dist. 3	41	13	55	109	634,903	109	634,903	1	9	33	43	312,769
Dist. 4	33	27	29	89	519,433	89	519,433	3	5	17	25	181,200
Dist. 5	....	....	10	10	70,149	10	70,149	...	....	8	8	67,729
Dist. 6	11	8	14	33	221,367	35	222,603	...	2	11	13	100,021
Dist. 7B	51	14	74	139	450,349	144	466,107	7	4	53	64	242,180
Dist. 7C	39	24	87	150	968,923	155	973,950	3	....	8	11	48,370
Dist. 8	57	9	32	98	691,065	100	696,690	2	3	7	12	110,396
Dist. 8A	63	3	24	90	502,714	95	530,081	4	...	16	20	149,995
Dist. 9	47	5	30	82	227,543	84	230,899	...	2	18	20	99,257
Dist. 10	15	17	12	44	305,971	44	305,971	...	3	7	10	91,822
Offshore	....	1	11	12	94,929	12	94,929	...	...	10	10	73,346
Utah	23	....	13	36	324,716	37	330,585	...	...	11	11	67,364
Virginia	....	4	1	5	26,862	5	26,862	...	...	1	1	6,972
West Virginia	1	26	7	34	95,059	34	95,059	..	3	3	6	21,255
Wyoming	91	6	75	172	1,064,417	176	1,070,788	10	3	51	64	503,401
Gulf of Mexico—												
Northern	....	....	9	9	77,023	9	77,023	...	...	9	9	77,023
Total—Oct. 1974	**1,131**	**551**	**1,241**	**2,923**	**14,080,534**	**3,054**	**14,392,760**	**67**	**93**	**661**	**821**	**4,779,364**
Total—Sept. 1974	**1,200**	**600**	**1,091**	**2,891**	**12,676,090**	**2,961**	**12,864,725**	**86**	**90**	**624**	**800**	**4,490,377**
Cum. 1974	**10,291**	**5,783**	**9,603**	**25,677**	**124,149,486**	**26,535**	**126,214,822**	**664**	**932**	**5,472**	**7,068**	**41,661,268**
Cum. 1973	**7,983**	**4,929**	**8,269**	**21,181**	**106,362,217**	**22,066**	**108,352,869**	**506**	**648**	**4,762**	**5,916**	.....

*Does not include miscellaneous drilling not related to oil and gas exploration and production. †Covers reports of completed or abandoned wells received by the API during the period from Sept. 28, 1974, through Oct. 25, 1974. ‡Includes multiple completion wells which produce gas from one or more zones but oil from at least one zone. A multiple completion well is counted as one well §Includes multiple completion wells that produce gas from all zones. A multiple completion well is counted as one well. Gas wells also include so-called condensate wells. ¶Exploratory wells include: new-field wildcats, new-pool wildcats, deeper-pool tests, shallower-pool tests and outpost (extension) tests. ‖Includes 23 strat tests and 68 service wells, 12,059 and 300,167 ft., respectively.

terranean during the winter.

Special instrumentation includes a navigation computer which integrates dead reckoning, satellite and LORAN C inputs and provides continuous positioning data. The ship's map position is reported with accuracy to within 150 ft. Navigation services are being provided on a direct contract basis from Survey Systems Inc., a Houston-based firm specializing in electronic positioning and surveying.

Gravity and magnetic data are recorded on magnetic tape in duplicate. The paired tapes are returned to Houston one at a time; the second remains on board until the first is reported intact at its Houston destination.

The ship stays in touch with Houston daily via a 1,000-w radiotelephone system.

Gravity and magnetic data can be used to enhance and clarify seismic data. They are also useful in developing a broad geophysical overview of a very large area. The seven maps returned from the Mediterranean and Atlantic survey of the Karen Bech will include Bouguer gravity, total magnetic intensity, bathymetric, gravity residual, free air gravity, regional gravity, and the second vertical derivative of magnetics.

Seismic survey being done in Kamishak Bay

SEISMOGRAPH Service Corp. is conducting a shallow-water seismic survey in the Kamishak Bay area of Cook Inlet in Alaska using a specially built pontoon-type boat.

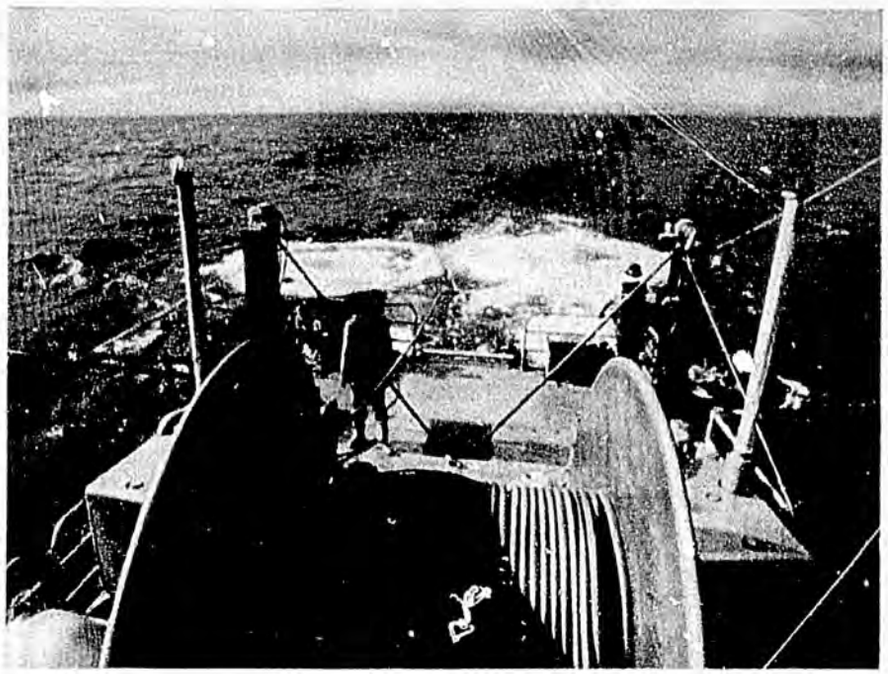
Of modular design, the boat, the Seisjet, was built by MonArk Boat Co. in Monticello, Ark., for ease of transport from prospect to prospect by Hercules aircraft. This is an especially important feature because of logistics difficulties common to exploration in the Arctic.

The craft is 60 ft long with an 18-ft beam and 30-in. draft fully loaded. The pontoons are 6 ft by 6 ft in cross section. Two GM 6B53 engines power Jacuzzi jet pumps to achieve 18 knots cruising speed. Fuel capacity is 2,500 gal.

Two twin-cylinder air guns, a mile of floating streamer-type cable with geophone drops, and 24-trace DFS III instrument comprise the seismic equipment.

Additionally, the boat is equipped with forward-scanning radar, Motorola miniranger for positioning, and Raytheon recording fathometer and digital depth finder. SSC's Anchorage Phoenix center is available to process data.

The Seisjet will begin work out of the inlet of St. Augustine Island where the crew will be housed in a relocatable camp.



IN ITS seismic exploration mode, Seisjet trails a floating cable 4,500 ft long, attached to which are 24 four-cluster hydrophone stations. At predetermined time intervals, shock waves are created by the firing of two underwater air guns, each of which builds up 6,000 lb of air pressure.

BOOKS

OFFSHORE OIL SCOUTS, January 1974 through July 1974, Status of the Offshore Oil Industry. Offshore Oil Scouts, 1609 Canal, New Orleans 70161. $15 in U.S., $30 overseas and Canada. Advance payment with order form is required.

This issue covers all data on Louisiana and Texas. Also available are computer-generated printouts of factual material pertaining to active OCS leases located Offshore Louisiana and Texas. Items which appear are: geographic area, block, OCS number, leased description, operator, etc. Price $75 printout of each sequence. Order from Offshore Oil Scouts, Box 61780, New Orleans 70161.

OIL SPILL PREVENTION AND REMOVAL HANDBOOK. Published by Noyes Data Corp., Mill Road at Grand Avenue, Park Ridge, N.J. 07656. 1974. By Marshall Sittig. 465 pp. $36.

This book attempts to organize and clarify the many ways and means made available for the removal of contaminating oil from surfaces and beaches. Special attention is called to the list of companies producing materials and equipment useful in cleaning oil spills and beaches.

WORLD SURVEY OF SULPHUR RESOURCES—SECOND EDITION. Published by The British Sulphur Corp. Lt., $17.55 (£75) surface mail, $18.72 (£80) airmail, Parnell House, 25 Wilton Rd., London SWiV 1NH, England.

Comprehensive update of 1966 first edition is arranged by major geographical regions on a country-by-country basis. It identifies sulfur resources in respect to mineral deposits, and covers recovery methods.

Worldwide crude-oil and gas production

OIL (1,000 b/d)	Oct. 1974	Sept.* 1974	10-month average Daily prod. 1973	Daily prod. 1974	Change from Vol	Change from %	GAS (billion cu ft) Oct. 1974	Sept. 1974	Cum. 1974
WESTERN HEMISPHERE									
Argentina	415.0	415.0	418.0	413.0	− 5.0	− 1.2	26.4	32.4	230.5
Bolivia	50.0	50.0	47.0	49.0	2.0	4.3	13.4	12.6	126.5
Brazil	170.0	170.0	169.0	170.0	1.0	0.6	3.7	4.2	39.1
Canada	1,597.0	1,615.0	1,790.0	1,711.0	− 79.0	− 4.4	291.7	290.9	2,728.3
Chile	30.0	30.0	32.0	30.0	− 2.0	− 6.3	20.1	21.7	173.7
Colombia	170.0	170.0	199.0	176.0	− 23.0	−11.6	9.7	9.6	85.7
Ecuador	100.0	115.0	203.0	173.0	− 30.0	−14.8	0.4	0.8	4.8
Mexico	580.0	580.0	462.0	570.0	108.0	23.4	58.9	59.0	565.8
Peru	75.0	75.0	68.0	76.0	8.0	11.8	6.6	6.4	60.8
Trinidad	180.0	180.0	164.0	176.0	12.0	7.3	5.0	9.9	57.7
United States	8,777.0	8,734.0	9,206.0	8,857.0	−349.0	− 3.8	1,911.2	1,826.7	18,394.5
Venezuela	2,810.0	2,770.0	3,367.0	3,004.0	−363.0	−10.8	45.0	146.8	1,366.2
Total	**14,954.0**	**14,904.0**	**16,125.0**	**15,405.0**	**−720.0**	**− 4.5**	**2,392.1**	**2,421.0**	**23,833.6**
WESTERN EUROPE									
Austria	45.0	45.0	49.0	46.0	− 3.0	− 6.1	4.9	5.7	77.5
Denmark	4.0	4.0	4.0	2.0	− 2.0	−50.0	0	0	0
France	25.0	25.0	26.0	24.0	− 2.0	− 7.7	18.6	24.2	236.7
West Germany	120.0	120.0	130.0	122.0	− 8.0	− 6.2	50.4	57.9	572.1
Italy	20.0	20.0	15.0	19.0	4.0	26.7	32.9	40.1	489.2
Netherlands	39.0	39.0	30.0	31.0	1.0	3.3	234.2	229.5	2,391.6
Norway	44.0	50.0	36.0	31.0	− 5.0	−13.9	0	0	0
Spain	40.0	40.0	15.0	41.0	26.0	173.3	0	0	0
United Kingdom	2.0	2.0	2.0	2.0	.....	.....	69.9	83.3	1,067.9
Yugoslavia	65.0	65.0	68.0	67.0	− 1.0	− 1.5	4.7	3.8	44.7
Total	**404.0**	**410.0**	**375.0**	**385.0**	**10.0**	**2.7**	**415.6**	**449.5**	**4,879.7**
MIDDLE EAST									
Abu Dhabi	1,169.0	1,412.0	1,342.0	1,452.0	110.0	8.2	0	0	0
Bahrain	68.0	67.0	68.0	67.0	− 1.0	− 1.5	0.1	0.2	3.1
Dubai	262.0	235.0	236.0	237.0	1.0	.....	0	0	0
Iran	5,720.0	5,836.0	5,824.0	6,038.0	214.0	3.7	74.2	75.6	754.6
Iraq	1,727.0	1,604.0	1,915.0	1,766.0	−149.0	− 7.8	11.2	9.7	107.3
Israel	100.0	100.0	101.0	100.0	− 1.0	− 1.0	0.2	0.1	3.8
Kuwait	2,060.0	2,225.0	3,115.0	2,569.0	−546.0	−17.5	0.1	0.2	1.4
Oman	280.0	285.0	291.0	292.0	1.0	0.3	0	0	0
Qatar	525.0	515.0	591.0	519.0	− 72.0	−12.2	0.1	0.1	1.5
Saudi Arabia	9,052.0	8,780.0	7,840.0	8,493.0	653.0	8.3	0	0	0
Sharjah†	60.0	60.0	.....	23.0	23.0	.....	0	0	0
Syria	150.0	150.0	114.0	126.0	12.0	10.5	0	0	0
Turkey	65.0	65.0	66.0	65.0	− 1.0	− 1.5	0	0	0
Total	**21,238.0**	**21,334.0**	**21,503.0**	**21,747.0**	**244.0**	**1.1**	**85.9**	**85.9**	**871.7**
ASIA-PACIFIC									
Afghanistan	.....	.....	.....	.....	.....	.....	7.8	7.8	77.4
Australia	465.0	471.0	368.0	373.0	5.0	1.4	15.6	14.8	132.5
Burma	20.0	20.0	20.0	20.0	.....	.....	0.6	0.4	4.9
Brunei-Malaysia	375.0	375.0	316.0	368.0	52.0	16.5	0.8	0.2	2.0
India	150.0	150.0	148.0	149.0	1.0	0.7	1.5	0.4	15.5
Indonesia	1,385.0	1,350.0	1,310.0	1,430.0	120.0	9.2	17.1	13.7	125.1
Japan	15.0	15.0	15.0	15.0	.....	.....	7.1	8.0	81.2
Pakistan	8.0	8.0	8.0	8.0	.....	.....	13.9	11.2	115.7
Taiwan	3.0	3.0	2.0	3.0	1.0	50.0	4.3	3.2	37.0
Thailand	0.2	0.2	0.2	0.2	.....	.....	0	0	0
Total	**2,421.2**	**2,392.2**	**2,187.2**	**2,366.2**	**179.0**	**8.2**	**68.7**	**59.7**	**591.3**
AFRICA									
Algeria	900.0	900.0	1,112.0	1,059.0	− 53.0	− 4.8	1.7	1.6	17.1
Angola	20.0	20.0	14.0	20.0	6.0	42.9	5.1	4.9	30.8
Cabinda	150.0	150.0	138.0	149.0	11.0	8.0	0	0	0
Congo	35.0	35.0	40.0	35.0	− 5.0	−12.5	0.6	0.6	4.8
Egypt	175.0	172.0	192.0	137.0	− 55.0	−28.6	4.7	5.0	39.9
Gabon	190.0	190.0	144.0	176.0	32.0	22.2	1.5	1.3	12.2
Libya	1,069.0	1,325.0	2,272.0	1,596.0	−676.0	−29.8	3.1	4.6	34.7
Morocco	1.0	1.0	1.0	1.0	.....	.....	1.9	2.5	24.7
Nigeria	2,325.0	2,312.0	2,015.0	2,278.0	263.0	13.1	4.7	5.8	48.9
Tunisia	95.0	95.0	83.0	80.0	− 3.0	− 3.6	3.0	3.6	11.4
Total	**4,960.0**	**5,200.0**	**6,011.0**	**5,531.0**	**−480.0**	**− 8.0**	**26.3**	**29.9**	**224.5**
COMMUNIST									
China	900.0	900.0	860.0	900.0	40.0	4.7	15.6	16.0	157.1
Rumania	290.0	290.0	283.0	290.0	7.0	2.5	77.9	97.4	777.7
U.S.S.R.‡	9,396.0	9,393.0	8,525.0	9,125.0	600.0	7.0	808.4	760.0	7,554.2
Other	110.0	110.0	100.0	110.0	10.0	10.0	38.7	42.7	415.0
Total	**10,696.0**	**10,693.0**	**9,768.0**	**10,425.0**	**657.0**	**6.7**	**940.6**	**916.1**	**8,904.0**
World Total	**54,673.2**	**54,933.2**	**55,969.2**	**55,859.2**	**−110.0**	**− 0.2**	**3,929.2**	**3,962.1**	**39,304.8**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

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● DEADLINE: Copy to reach The Oil & Gas Journal not later than 9 a.m. on Wednesday preceding date of publication. Send advertisements to: Coordinator — Classified Advertising, THE OIL & GAS JOURNAL, Box 1260, Tulsa, Oklahoma 74101.

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COMPRESSORS

Electric

1—3000 HP Clark #CLBA-6
1—2500 HP Cooper-Bessemer #JM-6
2—1100 HP Clark #CMB-4
2—1000 HP Cooper-Bessemer #FM-3
1—900 HP Worthington #BDC-3.
1—500 HP Ing.-Rand #PRE-2, air
1—300 HP Clark #CMA-2
1—300 HP C/P non-lube air comp., 2083 cfm @ 75 psi, 1970, PACKAGED!
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2—125 HP Ing.-Rand non-lube air comp.

Gas Engine

1—2000 HP Clark #BA-10
3—2000 HP Ing.-Rand #512KVS, ⅛"
1—700 HP White-Superior, PACKAGED
1—660 HP Clark #HRA-4T, 1960
2—500 HP Clark #RA-5
1—350 HP White-Superior engine
2—300 HP Ing.-Rand XVG

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1—3000 HP Clark #CLBA-6, electric w/starter & exciter, (6) throw w/ cyls., bottles, coolers, etc. . . . last handled Hydrogen & CO-Methanol, 5960 cfm, 3165 psia disch. final stage . . . Ready NOW!

Centrifugal-Rotary

9400 cfm @ 98 psi Cooper-Bessemer centrif. air comp., 1800 HP, PACKAGED!
4820 cfm @ 62 psi Carrier, 1965, 1000 HP
4175 cfm @ 30.7 psi, Fair.-Morse, 300 HP
3350 cfm @ 115 psi Fairbanks-Morse, 2-stage rotary, 800 HP motor, pkgd.
1035 cfm @ 120 psi Fuller #C-200 200H rotary, 250 HP.

CYLINDERS . . . (100) cylinders in stock . . . Clark, Cooper, I-R, Worth., etc. . . . WP up to 6000 psi . . . call for list!

Houston Office (713) 467-7484

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FOR SALE: 8", 7", 5½", 4½" Casing. 2", 2½" Tubing. Assorted sizes of structural pipe and tubing. Also Lufkin, Bethlehem and Emsco pumping units, all skid mounted. Call evenings only: 316/583-5398.

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5 — DRILLING RIGS — 1 — 2500 Failing Rotary, 1—Mayhew Rotary, 1—22-W Bucyrus Cable. 1—Triple Drum Clark Cable. 1—Twin Screw Ford Diesel Tractor with Tulsa Winch & 32' Tandem Float. 2—Winch Trucks, etc. All Rigs equipped with Drilling Tools, etc. Other Misc. Drilling Equipment. Ken-Tex Oil Corporation, G. F. Pile, P.O. Box 33053, 317-784-1898, Indianapolis, Indiana 46203.

COMPRESSORS

1 — 120 HP ING. RAND. #JVG-4
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2 — 330 HP ING. RAND. #SVG-6 PACKAGED
3 — 400 HP CLARK #RA-4
1 — 500 HP CLARK #CMA-6
1 — 1000 HP COOPER-BESSEMER #FM-6
1 — 1000 HP COOPER-BESSEMER #JM-4
1 — 1250 HP COOPER-BESSEMER #JM-4
2 — 1250 HP WORTHINGTON #BDC-6
2 — 1500 HP CLARK #CRA-6

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Vessels atm. at 150° to 550 PSI at 500° F. various sizes.

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4. 350 HP Chi. Pneu. sngl. stage, driven by Waukesha F3521 (new).
5. 750 HP Chi. Pneu. 2 stage driven by Waukesha L7042 (new).
6. 250 HP G-D HLE 2 stage, driven by Roiline L-3000.
7. 300 HP G-D RXE sngl. stage, driven by Climax V-125.
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Dimensions	PSI	Construction	Gallons
9'6" x 20'	1050	CS/304 clad	Vert. 14,000
13' x 22'	100	304 SS	Vert. 25,000
6' x 34'	500	Steel	Horiz. 8,000
6'10" x 9'1"	432	CS/304-clad	Vert. 3,000 (Unused)
6' x 34'	400	Steel	Horiz. 8,000
6' x 34'	300	Steel	Horiz. 8,000
7' x 34'	300	Steel	Horiz. 10,000
7' x 34'	200	Steel	Horiz. 10,000
7' x 34'	150	Steel	Horiz. 10,000
7' x 34'	100	Steel	Horiz. 10,000
6' x 47'	147	Steel	Horiz. 10,000
4' x 20'	300	Steel	Horiz. 2,000
4' x 20'	125	Steel	Horiz. 2,000

HEAT EXCHANGERS STAINLESS STEEL

425 sq. ft.	CS/316 SS	150#/75#
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PAT KELLY EQUIPMENT CO.
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(713) 433-2415

PLEASE NOTE: THE PRECEDING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

OGJ's 1973 scoreboard

Net profits	9.67 billion	Up 53.4%	(27 companies)
Total assets	123.2 billion	Up 12.8%	(27 companies)
Return on total assets	7.9%	Up 2.1%	(27 companies)
Net liquids production	24.36 million b/d	Up 1.5%	(27 companies)
Runs to stills	22.96 million b/d	Up 6.6%	(25 companies)
Product sales	25.22 million b/d	Up 4.0%	(25 companies)
Net wells drilled	5,377	Down 3.3%	(18 companies)
Net gas production	45.6 billion cfd	Down 0.2%	(27 companies)

OGJ

Oils' high profits abroad bring trouble in the U.S.

W. A. Bachman
Senior Editor

Steven Kelley
Economics Editor

THE IRONY of oil industry profits is remarkable. Companies are earning more than ever but enjoying the rewards less.

For the first time in years, the industry as a whole is reporting earnings for 1973 and the first quarter of 1974 high enough to trigger significant expansion. Ordinarily this would be optimistic news all around.

But fuel shortages, foreign embargoes on oil exports to this country, and rising product prices have created a situation where the petroleum industry has become the whipping boy of politicians and consumer groups. This is true even though companies in other industries also are enjoying record profits.

As a result, oil executives in their annual reports, at their annual meetings, or in first-quarter 1974 announcements are going to great length to explain their earnings. The threats of punitive taxes and sweeping government regulation are forcing companies to make unprecedented analyses of their operations and revelations of just where the new funds come from and how they will be invested.

A vintage year. By now, it is well established that 1973 was a banner year for oil-industry profits. Reports now

being made also show that earnings are running high so far in 1974.

The Oil and Gas Journal's survey of annual reports for large U.S. oil companies shows an average gain in earnings of 53% for 1973 over the previous year. A survey of 97 petroleum companies by New York's First National City Bank came up with the same percentage gain. A Chase Manhattan Bank study of worldwide profits produced a gain of 71%, but the survey included several European-headquartered companies which had still higher profits (OGJ, Apr. 22, p. 66).

How oil compares. But other industries also did well last year. The profits gain of 2,136 manufacturing firms surveyed by First National City Bank was 31%. The gain of 4,640 corporations in all industries was 23%.

The 53% gain for oil companies was exceeded by several other industry groups. Lumber was up 73%, nonferrous metals 69%, paper 67%, metal mining 63%, and iron and steel 61%. Meatpacking also had a 53% gain, and substantial increases were recorded by chemicals, aerospace, office machinery, and computers.

Measured by rate of return, oil-industry profits were more moderate. The Journal survey showed a return on stockholders' equity increased from 10% to 14.2% and the return on assets went from 7.9% to 10%. The return on net worth calculated by First National City increased from 10.8% to 15.6% which was only slightly greater than the 14.8% average return for all manufacturing. Over the last 10 years, the petroleum group averaged 11.8% compared with 12.4% for all manufacturing.

How they did it. Factors behind the growth in petroleum profits are little understood by the public, because the greatest impetus came from operations abroad.

Demand for petroleum products abroad increased at a greater rate than in the United States, and so did the prices of crude oil and refined products. The Chase Manhattan group of companies reported that 75% of their increased revenues occurred outside the United States and 85% of the profits growth came from abroad.

Currency devaluation and inflation played a large role in these increases. An estimated 25% of the profits growth was attributed to devaluation of the dollar, and one-sixth was attributed to increased value of inventories.

Other factors besides devaluation

How 27 large U.S. companies fared financially last year

Rank by assets		Net profits* ($ million) 1973	1972	% change	Gross op. rev.† ($ million) 1973	% change	% net profit to gross op. rev. 1973	1972
1.	Exxon	2,443	1,532	+ 59.5	25,724	+26.7	8.7	7.5
2.	Texaco	1,292	889	+ 45.3	11,407	+31.2	11.3	10.2
3.	Mobil	849	574	+ 47.9	10,160	+24.7	8.4	7.1
4.	Gulf	800	447	+ 79.0	8,417	+34.8	9.5	7.2
5.	California Standard	844	547	+ 54.3	7,762	+33.2	10.9	9.4
6.	Indiana Standard	511	375	+ 36.3	5,416	+20.3	9.4	8.3
7.	Tenneco	230	203	+ 13.3	3,910	+19.4	5.9	6.2
8.	Shell	333	260	+ 28.1	4,884	+19.8	6.8	6.4
9.	Atlantic Richfield	270	193	+ 39.9	3,983	+19.9	6.8	5.8
10.	Continental	243	170	+ 42.9	4,224	+23.2	5.8	5.0
11.	Phillips	230	148	+ 55.4	2,990	+19.0	7.7	5.9
12.	Sun	230	155	+ 48.4	2,286	+19.2	10.1	8.1
13.	Union	180	122	+ 47.5	2,552	+21.6	7.1	5.8
14.	Cities Service	136	99	+ 37.4	2,035	+ 9.3	6.7	5.3
15.	Getty‡	135	76	+ 77.6	1,601	+14.0	8.4	5.4
16.	Pennzoil United	84	59	+ 42.4	1,059	+19.4	7.9	6.7
17.	Ohio Standard	74	60	+ 23.3	1,482	+ 8.5	5.0	4.1
18.	Amerada Hess	246	46	+434.8	1,896	+42.1	13.0	3.5
19.	Marathon	129	80	+ 61.3	1,578	+23.5	8.2	6.2
20.	Ashland§	85	68	+ 25.0	2,053	+15.3	4.1	3.8
21.	Kerr-McGee	63	51	+ 23.5	728	+ 7.1	8.7	7.4
22.	Skelly	44	38	+ 15.8	580	+10.5	7.6	7.2
23.	Murphy	48	14	+242.9	499	+32.0	9.6	3.8
24.	Superior	33	5	+560.0	152	+ 5.6	21.7	3.6
25.	Louisiana Land	70	63	+ 11.1	180	+23.3	38.9	43.1
26.	American Petrofina	37	18	+105.6	448	+57.2	8.3	6.3
27.	Clark	30	8	+275.0	397	+35.8	7.6	3.0
	Total	9,669	6,300	+ 53.4	108,403	+23.5	8.9	7.2

*Excludes nonrecurring gains and losses. †Excludes nonoperating income and excise taxes ‡Getty

. . . and a summary of their worldwide operations for the past

Rank by assets		Net liquids production, Thousand b/d 1973	1972	% change	Crude runs to stills, Thousand b/d 1973	1972	% change
1.	Exxon	5,525	5,734	- 3.6	5,761	5,146	+12.0
2.	Texaco	4,286	3,777	+13.5	3,052	2,952	+ 3.4
3.	Mobil	2,522	2,399	+ 5.1	2,365	2,194	+ 7.8
4.	Gulf	3,140	3,214	- 2.3	1,976	1,945	+ 1.6
5.	California Standard	3,170	3,159	+ .03	2,248	2,109	+ 6.6
6.	Indiana Standard	875	815	+ 7.4	1,100	1,016	+ 8.3
7.	Tenneco	81	82	- 1.2	77	90	-14.4
8.	Shell	631	638	- 1.1	1,085	1,001	+ 8.4
9.	Atlantic Richfield	656	652	+ 0.6	746	753	- 0.9
10.	Continental	556	594	- 6.3	546	509	+ 7.2
11.	Phillips	365	363	+ 0.1	460	450	+ 2.2
12.	Sun	369	369	0	580	549	+ 5.6
13.	Union	380	365	+ 4.1	472	440	+ 7.3
14.	Cities Service	227	227	0	235	269	-12.6
15.	Getty†	420	433	- 3.0	239	230	+ 3.9
16.	Pennzoil United	47	42	+11.9	36	33	+ 9.1
17.	Ohio Standard	51	50	+ 2.0	382	400	- 4.5
18.	Amerada Hess	215	231	- 6.9	492	444	+10.8
19.	Marathon	441	453	- 2.6	313	286	+ 9.4
20.	Ashland‡	51	42	+21.4	338	327	+ 3.4
21.	Kerr-McGee	38	41	- 7.3	39	37	- 5.4
22.	Skelly	86	89	- 3.4	86	80	+ 7.5
23.	Murphy	52	49	+ 6.1	94	72	+30.6
24.	Superior	64	70	- 8.6			
25.	Louisiana Land	86	79	+ 8.9			
26.	American Petrofina	21	20	+ 5.0	136	97	+40.2
27.	Clark	2	2	0	104	105	- 1.0
	Total	24,357	23,989	+ 1.5	23,962	21,574	+ 6.6

*Sales. †Getty data includes interest in Skelly. ‡Fiscal year ended Sept. 30, 1973.

*

24.43
12.92
8.49
8.00
7.44
5.11
2.30
3.33
72.02 *
3
15.32
8.89
5.74
4.47
5.47
3.75
2.03
2.60
48.27 *

*

96.69
73.02 -
23.67 *

63.00
48.27 -
14.73 *

How 15 small companies fared

Company	Net profits ($ thousands) 1973	1972	% change
Corco	34,117	3,113	+995.9
Tesoro	19,874	13,047	+ 52.3
Mapco Inc.	19,598	13,065	+ 50.0
Quaker State	19,202	15,207	+ 26.3
General Crude Oil	17,013	14,177	+ 20.0
Pioneer Natural Gas	12,397	9,852	+ 25.8
Crown Central Pet. Corp.	8,441	1,317	+540.9
Helmerich & Payne Inc.	6,368	4,449	+ 43.1
Inexco Oil Co.	5,811	4,519	+ 28.6
Apco Oil Corp.	5,717	6,186	− 7.6
Woods Corp.	5,190	3,891	+ 33.4
Barber Oil & Gas Co.	3,221	2,648	+ 21.6
Western Co. of N. America	2,372	1,744	+ 36.0
Forest Oil Corp.	(1,037)	771	−234.5
White Shield Corp.	(2,750)	981	−380.3
Total	155,534	94,967	+ 63.8

and inflated inventories also accounted for increased earnings. Tanker rates soared to record highs from subnormal levels in 1972, making transportation operations of many companies very profitable. Petrochemical operations also enjoyed a substantial recovery during the year and once again became a strong profit center for a large number of firms.

The companies surveyed by the Journal report a 23.5% gain in gross operating revenues, while the average return on revenues advanced from 7.2% to 8.9%. Working capital of the group increased by 29.8% to $15.3 billion; and the companies put this to work by spending $13.7 billion on capital projects, a 21.2% gain over expenditures the year before.

Operating statistics for the group also are impressive. The companies on a worldwide basis reported liquids production of 24,357,000 b/d, an increase of 1.5%. They stepped up refinery runs by 6.6% to 22,962,000 b/d and product sales by 4% to 25,216,000 b/d. Natural-gas sales held about the same at 45.5 billion cfd. The number of net wells drilled, however, declined 3.3% to 5,558.

What companies say. The trends revealed in the surveys were echoed in comments of company executives in their annual reports.

Almost without exception this year, the reports dwelled at length on explanations of the world energy picture, the vast need for capital funds, and the concern over the political attitude of governments both in this country and abroad.

Cities Service executives declared that prices and profits are the basic issues in the long-term energy situation. Marathon said the most serious challenge before management is communicating the basic facts of the petroleum shortage to the public and of the overwhelming need for capital.

Every company in the Journal survey reported plans for substantial increases in capital investment, particularly in exploration, production, processing, and stepped-up activity in alternate energy sources. Many noted specifically that the investment needs far exceeded internal cash sources and will require outside financing. And this will make a high level of earnings vital.

Particular attention was given to U.S. earnings. Marathon and Sohio noted that profits from domestic operations actually declined. For Marathon, profits from U.S. operations dipped from $64.9 million to $61.8, while those from abroad increased from $14.9 to $67.6 million. For Sohio, the domestic decline was 4.8%, and the foreign gain 59.3%. Exxon said earnings in the U.S. were up 15.4%, about in line with the increase in product sales volume. Texaco's domestic profits were only 3.4% higher. Sun reported 80% of its added profits came from abroad, and the figure for Phillips was 81%. These joined many others in noting that their foreign earnings will help finance expansion projects in this country.

Time needed. Several companies showed a sensitivity in their annual reports to charges that industry capital spending is not showing results in greater energy reserves or rates of production.

The executives pointed out that current expansion projects require a longer lead time and require a much larger investment than formerly, thus tying up larger amounts of nonproductive capital. Lead times of 3-5 years or longer are needed in bringing new fields on production or putting refineries on stream.

Continental illustrated this trend by a special report in its annual on the North Sea. Capital investment to develop currently known North Sea oil and gas reserves, Continental said, will amount to an estimated $12-15 billion. Development costs per barrel of peak daily production capacity in the northern North Sea will average about $4,000. This is about 60% greater than the cost of developing discoveries in the Gulf of Mexico and 10 times the cost required for development of onshore discoveries in the Middle East.

California Standard's report left no doubt that much time and money will be needed to correct the U.S. energy imbalance. Socal executives suggested an energy program for the U.S. which probably represents a consensus of the industry. It includes policies to emphasize more efficient energy usage, encourage domestic exploration, expedite leasing of federal lands, speed refinery expansion, moderate environmental regulations, build deepwater terminals, research the best use of coal, shale, and tar-sands resources, and finally speed the construction of nuclear-fueled power plants.

The annual report taken as a group revealed one fact. The executives of the nation's oil companies realize they face the greatest challenge since the Drake well, and they are dedicated to meeting it.

BP, Imperial set U.K. ethylene plant

BP CHEMICALS and Imperial Chemical Industries have officially announced a joint-venture 500,000-metric-ton/year ethylene plant for Teesside, U.K. (OGJ, Oct. 1, 1973, Newsletter). Completion is scheduled for mid-1977.

A 500-mile pipeline will carry ethylene to BP's Grangemouth, Scotland, complex. Each company will provide its own feedstock, mainly naphtha. The plant, designed by Stone & Webster, will also be able to process natural-gas liquids.

Working cap. ($ million) 1973	Working cap. % change	Funds from operations ($ million) 1973	Funds from operations % change	Cap. & expl. expend. ($ million) 1973	Cap. & expl. expend. % change	% return on stockholders equity 1973	% return on stockholders equity 1972	% return on total assets 1973	% return on total assets 1972	Total assets $ million 1973	Total assets $ million 1972	Total assets % change
3,486	+ 45.7	4,079	+ 43.0	2,235	+ 12.7	17.8	12.5	9.7	7.1	25,079	21,558	+16.3
1,723	+ 80.2	1,926	+ 46.0	1,334	+ 11.8	16.2	12.4	9.5	7.3	13,595	12,032	+13.0
564	− 11.7	1,363	+ 30.9	1,334	+ 13.0	14.9	11.2	7.9	1.2	10,690	9,217	+16.0
1,514	+ 4.8	1,560	+ 43.1	979	+ 14.0	14.4	8.3	7.9	4.8	10,074	9,324	+ 8.0
1,271	+ 60.3	1,250	+ 35.3	1,017	+ 16.9	14.5	10.5	9.3	6.8	9,082	8,084	+12.3
775	+ 13.5	971	+ 22.0	1,100	+ 16.9	12.4	9.9	7.3	6.1	7,018	6.186	+13.4
333	− 8.8	499	+ 15.8	392	+ 13.6	12.0	11.1	4.3	4.1	5,427	4,838	+12.2
752	+ 12.6	785	+ 17.3	581	− 1.7	10.7	8.9	6.2	5.0	5,381	5,172	+ 4.0
718	+ 53.4	573	+ 19.6	500	+ 37.4	8.7	6.5	5.3	4.2	5,109	4,629	+10.4
483	+ 44.6	554	+ 39.2	476	− 11.7	13.4	10.4	6.6	5.2	3,693	3,250	+13.6
612	+ 17.7	469	+ 27.8	329	+ 24.2	11.7	8.2	6.4	4.5	3,607	3,270	+10.3
357	+ 77.6	463	+ 34.6	284	+ 5.2	11.9	8.8	6.8	5.2	3,382	2,980	+13.5
357	+ 6.3	479	+ 18.0	391	+ 24.5	10.5	7.6	6.2	4.5	2,909	2,696	+ 7.9
277	+ 3.4	305	+ 17.3	402	+ 53.4	8.9	6.9	5.1	4.1	2,660	2,406	+10.6
228	− 14.0	362	+ 32.6	437	+ 60.1	8.5	5.2	5.7	3.5	2,355	2,182	+ 7.9
91	− 43.5	189	+ 21.9	293	+125.4	13.3	11.7	4.2	3.2	2,001	1,837	+ 8.9
327	+ 11.6	158	+ 6.0	193	+ 55.6	6.5	5.6	3.8	3.3	1,964	1,802	+ 9.0
417	+112.8	354	+100.0	242	+ 70.4	31.8	8.3	12.8	3.4	1,922	1,378	+39.5
105	+156.1	246	+ 33.0	169	− 12.0	14,6	10.1	8.2	5.3	1,572	1,514	+ 3,8
298	+ 7.1	177	+ 14.9	176	+ 43.0	15.5	13.4	5.9	5.3	1,437	1,170	+13.1
204	+ 3.0	125	− 1.6	113	+ 48.7	11 2	10.0	7.2	6.3	867	807	+ 7.4
91	− 20.9	136	+ 18.3	175	+ 7.3	7.4	6.7	5.5	5.0	803	748	+ 7.4
99	+ 47.8	111	+ 94.7	113	− 7.8	20.2	7.6	6.9	2.5	704	568	+23.9
43	+ 59.3	53	+ 29.3	30	6.3	9.0	1.5	4.9	0.9	660	572	+15.4
93	+ 93.8	106	+ 17.8	79	− 26.9	27.5	28.4	15.4	15.5	455	406	+12.1
72	+ 38.5	57	+ 62.9	135	+440.0	13.4	12.3	8.2	6.9	451	264	+70.8
42	+ 61.5	42	+100.0	15	+ 15.4	27.9	10.1	11.6	4.1	263	206	+27.7
15,332	+ 29.8	17,392	+ 34.2	13,729	+ 21.2	14.2	10.0	7.9	5.8	123,160	109,196	+12.8

data includes interest in Skelly. §Fiscal year ended Sept. 30, 1973.

2 years

Refined product sales Thousand b/d 1973	Refined product sales Thousand b/d 1972	Refined product sales % change	Number of employees 1973	Number of employees 1972	Number of employees % change	Net wells drilled 1973	Net wells drilled 1972	Net wells drilled % change	Net natural-gas production MMcfd 1973	Net natural-gas production MMcfd 1972	Net natural-gas production % change
6,178	5,701	+ 8.4	137,000	141,000	− 2.8				*9,767	*9,323	+ 4.8
3,472	3,381	+ 2.7	74,918	76,496	− 2.1	969	1,177	−17.7	*4,516	*4,685	− 3.6
2,482	2,409	+ 3.0	73,900	75,000	− 1.5	....	....	....	3,682	3,595	+ 2.4
1,781	1,677	+ 6.2	51,600	57,500	− 10.3	...	...	...	3,360	3,572	− 5.9
2,259	2,169	+ 4.1	39,269	41,497	− 5.4	266	370	−28.1	*1,579	*1,671	− 5.5
1,234	1,226	+ 0.7	46,589	46,627	− 0.1	1,208	1,130	+ 6.9	3,935	3,911	+ 0.6
125	122	+ 2.5	83,500	78,000	+ 7.1				972	935	+ 4.0
1,136	1,068	+ 6.4	32,080	32,871	− 2.4	440	513	−14.2	2,268	2,460	− 7.8
896	884	+ 1.4	26,284	27,756	− 5.6	309	356	−13.2	2,138	2,203	− 3.0
654	657	− 0.4	39,796	38,092	+ 4.5	486	458	+ 6.1	*1,451	*1,326	+ 9.4
690	733	− 5.9	33,429	35,265	− 5.2	267	199	+34.2	1,825	1,853	− 1.5
647	634	+ 2.1	24,979	26,384	− 5.3	241	198	+21.7	*1,523	*1,510	+ 0.9
487	458	+ 6.3	15,926	16,263	− 2.1	256	252	+ 1.6	1,534	1,634	− 6.1
374	396	− 3.1	18,000	21,400	− 15.9	135	159	−15.1	1,127	1,087	+ 3.7
273	298	− 8.4	11,258	12,317	− 8.6	179	163	+ 9.8	1,261	1,261	0
35	31	+ 12.9	10,732	9,618	+ 11.6	....	....	....	675	605	+11.6
385	408	− 5.6	18,823	21,111	− 10.8				110	145	−24.1
615	575	+ 7.0	4,867	4,714	+ 3.2	60	39	+53.8	743	763	− 2.6
349	321	+ 8.7	8,238	8,048	+ 2.4	....	....	....	419	429	− 2.3
474	452	+ 4.9	26,123	23,077	+ 13.2				312	172	+81.4
112	131	− 14.5	8,966	9,217	− 2.7	85	94	− 9.6	300	304	− 1.3
135	144	− 6.3	4,367	4,835	− 9.7	57	91	−37.4	512	516	− 0.8
154	147	+ 4.8	2,989	2,992	0	78	60	+30.0	71	66	+ 7.6
....	....	....	2,690	2,420	+ 11.2	73	63	+15.9	1,033	1,083	− 4.6
...	...	...	...	...	...	238	203	+17.2	385	390	− 1.3
149	119	+ 25.2	2,904	2,276	+ 27.6	30	33	− 9.1	50	56	−10.7
120	111	+ 8.1	3,095	1,567	+ 97.5	...	...	...	6	7	−14.3
25,216	24,242	+ 4.0	802,322	816,343	− 1.7	5,377	5,558	− 3.3	45,554	45,562	− 0.2

1965 Net income	1965 %	1964 Net income	1964 %	1963 Net income	1963 %
63.4	22.2	59.4	23.0	52.4	22.7
35.8	15.5	23.7	14.0	18.1	11.7
90.1	8.1	47.1	7.3	44.0	7.0
100.6	10.2	84.5	9.1	77.5	8.6
8.7	27.8	2.1	8.9	1.5	6.8
96.2	10.2	100.1	11.1	87.4	10.5
1,021.4	11.9	1,050.6	12.6	1,019.5	12.8
57.7	6.9	43.0	5.6	43.0	6.1
427.2	11.2	395.1	11.0	371.4	10.9
25.1	14.6	20.7	14.7	18.8	15.8
60.1	11.3	60.4	11.8	49.1	10.2
320.1	9.1	294.2	8.8	271.9	8.6
6.4	6.1	4.3	4.9	4.8	5.7
127.7	9.9	115.0	9.3	108.1	8.9
234.0	13.4	198.2	12.3	179.9	12.0
34.0	8.8	25.7	7.1	24.2	7.0
391.2	11.1	345.3	10.5	322.1	10.5
219.3	8.1	194.9	7.5	183.1	7.3
49.7	12.7	43.8	12.0	38.9	11.4
85.5	10.1	68.5	8.8	61.2	8.4
636.7	14.9	577.4	14.6	547.6	15.6
112.8	10.4	92.9	14.7	55.2	9.9
4,203.7	11.2	3,846.9	10.8	3,579.7	11.0

quarterly financial statements filed with the Security

oil's top 22

revenue in taxes, exclusive of sales and excise levies in 1972. There were no comparable figures for other industries, but the year before the tax burden for oil and gas was 5.59¢, greater than the 4.58¢ for other U.S. mining and manufacturing corporations and the 4.17¢ for all other businesses.

Oil and gas companies paid lower income taxes per dollar of revenue, Pirinc said, due mainly to percentage depletion and intangible drilling cost deductions, but other types of taxes were greater than for other businesses. The main taxes in the other category paid by oil and gas companies were state and local property taxes and crude-oil and natural gas severance taxes.

Oil and gas companies paid $1.2 billion in federal income taxes in 1972 and $2.4 billion in other types of taxes. The effective federal income tax rate for the domestic oil industry rose from 19.1% in 1969 to 22% in 1970, 23.5% in 1971, and 25.6% in 1972, due largely to the effects of the Tax Reform Act of 1969, Pirinc reported.

In addition to its domestic tax payments, the U.S. oil industry also paid foreign income taxes totaling $7.2 billion in 1972, $5.8 billion in 1971, and $3.6 billion in 1970. The foreign income tax together with the domestic federal income tax liability gave the U.S. oil industry an effective worldwide income tax rate of 58% in 1972, according to Pirinc calculations.

Oxy, Libya sign exploration deal

OCCIDENTAL Petroleum Corp. has signed the first exploration agreement made by Libya since the Sept. 1, 1969, revolution and expects to be drilling in the new exploratory area this year.

Occidental, which, along with other operators in Libya, has experienced numerous problems dealing with the revolutionary government, will be operating under a production-sharing contract on 19 blocks covering 11 million acres.

Most of the blocks are in the Sirte basin, where Libya's present producing fields are located, and some cover concessions previously relinquished by others.

Terms of the contract are demanding, but Oxy believes much of the acreage has not been adequately explored. Oxy's current production in Libya was found on relinquished acreage.

Under terms of the agreement, the national oil company, Libyan National Oil Corp., will get 81% of future production and Oxy 19%. Oxy's share will be free of Libyan taxes and royalties.

Oxy will finance all exploration and pay 19% of development costs on commercial discoveries. Libya will pay 81% of development costs but will be reimbursed for this amount if production reaches a specified—but unannounced—figure. Oxy would make the reimbursement at a rate of 5%/year over 20 years without interest.

Production costs will be borne 81% by Libya and 19% by Oxy.

Subject to mutual agreement on prices, Oxy will have the option to purchase Libya's share of future production.

The agreement permits operations for 35 years if a commercial discovery is made on a block within 5 years. It does not effect Oxy's present concessions, held jointly by Oxy and Libyan National.

Oxy says it is contracting for two or three seismic crews to begin shooting operations this spring or summer and expects to have a rig in the field before the end of the year.

U.S. firms plan two more mobile rigs

U.S. drilling contractors plan to build two more mobile offshore rigs.

Sedco Inc., Dallas, will build still another of its 700-series semisubmersibles, and Storm Drilling S.A., a subsidiary of Houston-based Storm Drilling Co., has let contract for a new jack-up rig to Bethlehem Singapore Private Ltd.

Sedco's new unit, to be known as Sedco 708, will be leased to Sun Oil Co. for at least 2 years starting late in 1976. A shipyard contract has not yet been awarded, although Sedco is negotiating with Gulf Coast and West Coast yards.

Cost of the fully equipped rig will be in excess of $40 million, and Sun estimates its total cost for rig operation and related equipment and supplies will run about $75,000/day.

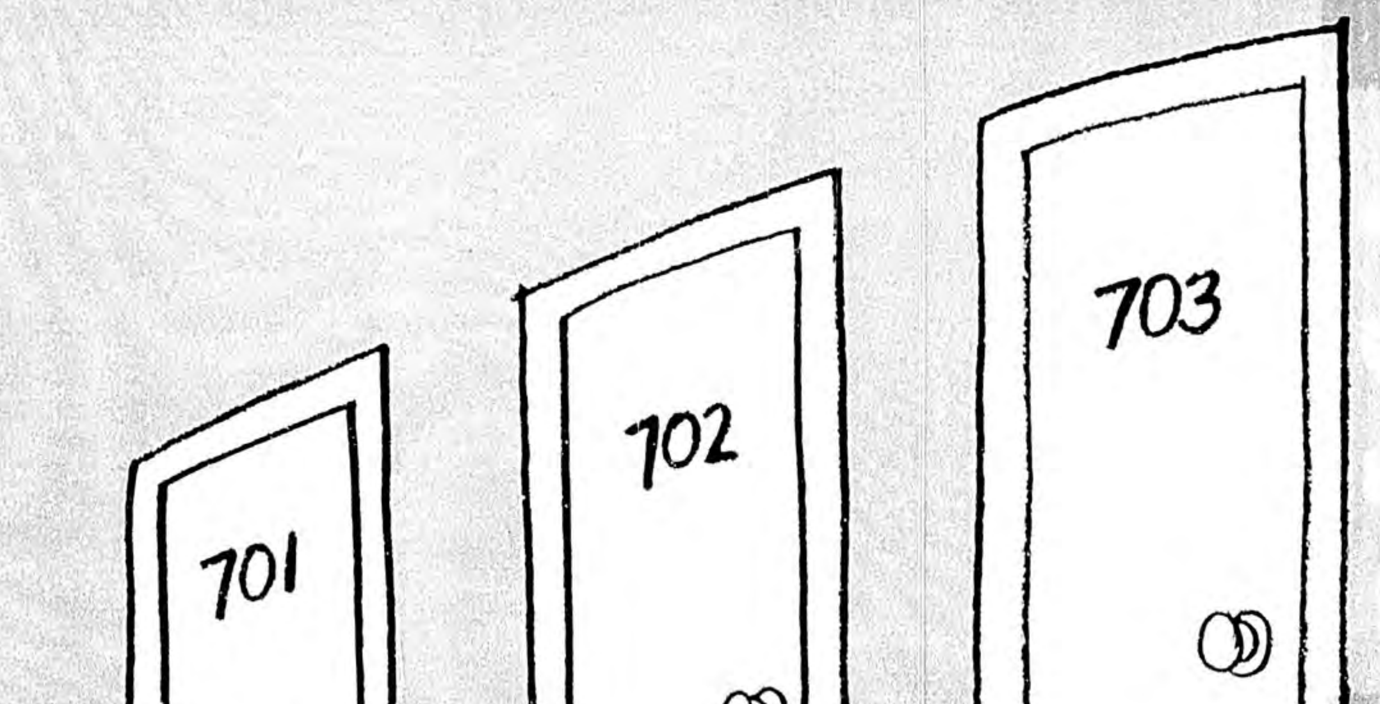
Sun said it made this long-term commitment in order to strengthen its exploration capability in deep waters off the continental U.S.

Sedco also announced it has received a 2-year drilling contract from a consortium including Shell, ARCO, and Mobil for use of the Sedco 706. The semisubmersible unit is being built at the Kaiser shipyard in California, with delivery scheduled the fall of 1975.

Delivery of Storm's new unit is scheduled in October 1975. It's to be rated to 25,000 ft in 250 ft of water.

Award of the latest contract brings to six the number of Bethlehem-designed offshore mobile units under construction or scheduled at Bethlehem's Singapore yard.

Other units under construction by Bethlehem include five semisubmersibles and four jack ups at its Beaumont, Tex., yard.



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Net income after tax and the rate of return on equity of 22 U.S. oil companies (1963-73)

$ millions

Company	1973 Net income	1973 % return*	1972 Net income	1972 %	1971 Net income	1971 %	1970 Net income	1970 %	1969 Net income	1969 %	1968 Net income	1968 %	1967 Net income	1967 %	1966 Net income	1966
Amerada Hess†	151.8	23.5	46.2	8.3	133.3	24.0	114.0	25.7	86.5	23.7	89.8	19.8	76.8	22.2	73.1	2
Ashland	98.3	17.3	68.0	13.5	40.5	8.8	52.0	11.7	56.9	13.3	53.6	14.6	48.4	15.5	45.0	1
Atlantic Richfield	270.2	8.9	192.5	6.5	210.5	7.3	209.5	7.5	230.1	8.5	105.8	7.8	130.0	10.2	113.5	
Cities Service	135.6	9.8	99.1	6.9	104.5	7.7	118.6	8.9	127.2	10.0	121.3	9.9	127.8	10.9	120.1	1
Clark	30.5	29.9	8.3	9.8	3.6	4.7	10.8	14.0	13.0	18.7	12.1	20.4	11.5	23.4	9.6	2
Continental	242.7	14.0	170.2	10.4	140.1	9.1	160.3	10.7	146.4	9.8	150.0	10.6	136.1	10.1	115.6	1
Exxon Corp.	2,440.0	18.5	1,531.8	12.5	1,516.6	13.1	1,309.5	12.0	1,242.6	12.3	1,276.7	13.0	1,155.0	12.3	1,090.1	1
Getty	135.0	8.8	76.1	5.2	120.1	8.5	103.2	7.8	105.8	8.3	98.3	8.3	118.2	10.5	92.3	
Gulf†	760.0	14.0	447.0	8.3	561.0	10.2	550.0	10.4	610.6	12.1	626.6	13.2	568.3	12.9	504.8	1
Kerr-McGee†	58.8	10.8	50.6	10.1	40.7	10.8	35.9	10.3	33.6	10.3	36.4	12.0	32.1	11.5	33.0	1
Marathon	129.4	15.2	79.8	10.2	88.7	11.7	86.5	11.8	89.4	12.1	83.3	12.7	73.9	12.3	68.8	1
Mobil	842.8	15.7	574.2	10.9	540.8	10.9	482.7	10.4	456.5	10.4	430.7	10.3	385.4	9.8	356.1	
Murphy	53.6	24.4	14.3	7.6	11.1	6.2	9.3	6.5	6.2	4.5	7.3	5.4	8.2	6.2	8.4	7
Phillips	230.4	12.1	148.4	8.1	132.3	7.6	132.3	7.8	127.8	7.7	129.9	8.0	164.0	11.0	138.4	1
Shell	332.7	10.9	260.5	8.9	244.5	8.7	237.2	8.6	291.2	10.9	312.1	12.3	284.9	13.8	255.2	1
Skelly	44.0	7.5	37.6	6.8	38.3	7.0	36.1	7.0	38.4	7.7	40.3	8.5	42.0	9.3	37.0	
Standard of Calif.	843.6	14.4	547.1	10.5	511.1	10.4	454.8	9.8	453.8	10.3	451.8	10.7	409.4	10.3	401.2	1
Standard (Ind.)	511.2	12.4	374.7	10.0	340.6	9.6	314.0	9.3	321.0	10.0	309.5	10.1	280.9	9.6	255.9	
Standard (Ohio)	74.1	6.6	59.7	5.6	58.8	5.7	64.4	6.3	51.9	5.3	70.1	13.0	67.1	14.5	56.9	1
Sun	230.0	12.3	154.7	8.8	151.6	8.9	139.1	8.4	152.3	9.4	164.4	10.9	156.2	15.2	100.6	1
Texaco	1,292.4	25.0	889.0	12.4	903.9	13.4	822.0	13.1	769.8	13.1	819.6	14.5	754.4	14.8	692.1	1
Union of Calif.	180.2	10.6	121.9	7.6	114.7	7.4	114.5	7.6	138.9	9.5	149.8	10.9	145.0	11.2	134.2	1
Totals	9,087.3	15.1	5,951.7	9.7	6,007.3	10.2	5,556.7	10.4	5,549.9	10.9	5,539.4	11.8	5,175.6	12.0	4,701.9	1

*Equity as of Sept. 30, 1973. †Full years income estimated on the basis of income reported for the first 9 months of 1973.

Source: Compiled by Office of Tax Analysis, Department of Treasury, from Standard and Poors's Industrial Survey, Moody's Industrial Manu Exchange Commission (10 Q Forms).

AGO 5,29964

Treasury cites 1968-72 U.S. profits dip for

DOMESTIC profits for 22 of the largest oil companies actually declined from $3.672 billion in 1968 to $3.563 billion in 1972, a study by the Treasury Department discloses.

During the same period, international profits for the same group of companies rose from $1.709 billion to $2.353 billion.

Also, the Treasury analysis shows, the 1973 earnings are "primarily attributable to foreign inventory profits from skyrocketing prices, increased profits from increases in foreign product prices, and efficiencies in foreign refinery and other operations unrelated to the prices paid by U. S. consumers."

Affirming a point made by the companies, Treasury says further "that the higher 1973 profits must be interpreted in the light of the lower-than-normal profits realized in 1972 and the several years immediately prior."

Profits overall for the 22 companies rose last year to $9.087 billion from $5.951.7 billion in 1972. At the same time the rate of return on equity jumped to 15.1%, after falling to 9.7%, the low point of the past decade, in 1972.

The 1973 figures are based on actual earnings for the first 9 months of the year, converted to an annual basis.

During the 1963-72 decade, rate of return peaked at 12% in 1967, then slumped each year thereafter until the shortage last year, made worse by the Arab embargo, firmed up world prices and profits.

A Federal Trade Commission report shows oil refiners' profits for the 12 months ending last September yielded a return of 10.5%, compared with a 12.4% return for all manufacturing. During the past decade, FTC figures show the oil-industry return to be at or below the average for other businesses.

The 1973 figures computed by Treasury show that some companies were much better situated than others to benefit from tight supply and rising prices. Clark Oil & Refining Corp.'s return shot up from 9.8%, as computed by Treasury, to 29.9%. Texaco's rose from 12.4% to 25%, Treasury said, although the absolute increase in profits didn't rise proportionately.

The next best performances were reported not by the international giants but by Murphy Oil Corp., which earned 24.4% on equity, and Amerada Hess Corp., which made 23.5%.

Exxon Corp. earned 18.5%, compared to 15.7% for Mobil Oil Corp., 14.4% for Standard Oil Co. of California, 14% for Gulf Oil Corp., 12.4% for Standard of Indiana, and 12.3% for Sun Oil Co.

At the lower end of the scale, Standard Oil Co. (Ohio) earned only 6.6%, Skelly Oil 7.5%, Getty Oil 8.8%, and Atlantic Richfield Co. 8.9%.

Taxes still high. Also last week, the Petroleum Industry Research Foundation Inc. released an updated report on, "The Tax Burden on the Domestic Oil and Gas Industry." It showed that domestic oil and gas companies paid an average of 5.6¢/dollar of gross

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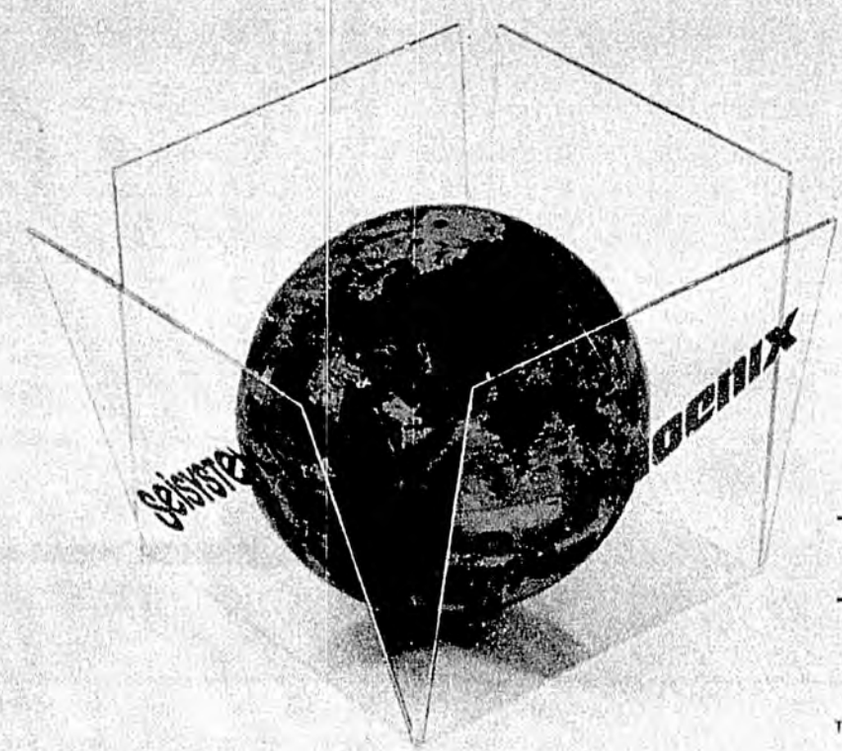

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AN OIL AND GAS JOURNAL SPECIAL REPORT

Progress painfully slow toward improved U.S. energy position

One year after the embargo, crude supplies are ample and product stocks in better shape—but the country's basic energy position has improved little. Election-year politics in Congress, coupled with widespread ignorance in Washington of the workings and needs of the petroleum industry and business in general, crippled most helpful moves on the federal level and brought still more controls.

A YEAR has passed since the Arab oil embargo accompanied by escalating prices exposed for all Americans to see the depth of their nation's costly energy insecurity. Subsequent events have confirmed the realization that the nation faces a long and expensive economic restructuring to improve its position.

At API time last year, the entire oil industry was scurrying to find crude supplies to replace volumes lost by the Arab export embargo to this country. For the first time in its modern history, spare U.S. oil-producing capability was inadequate to cover an emergency. Fears of an industrial and transportation shutdown were widespread.

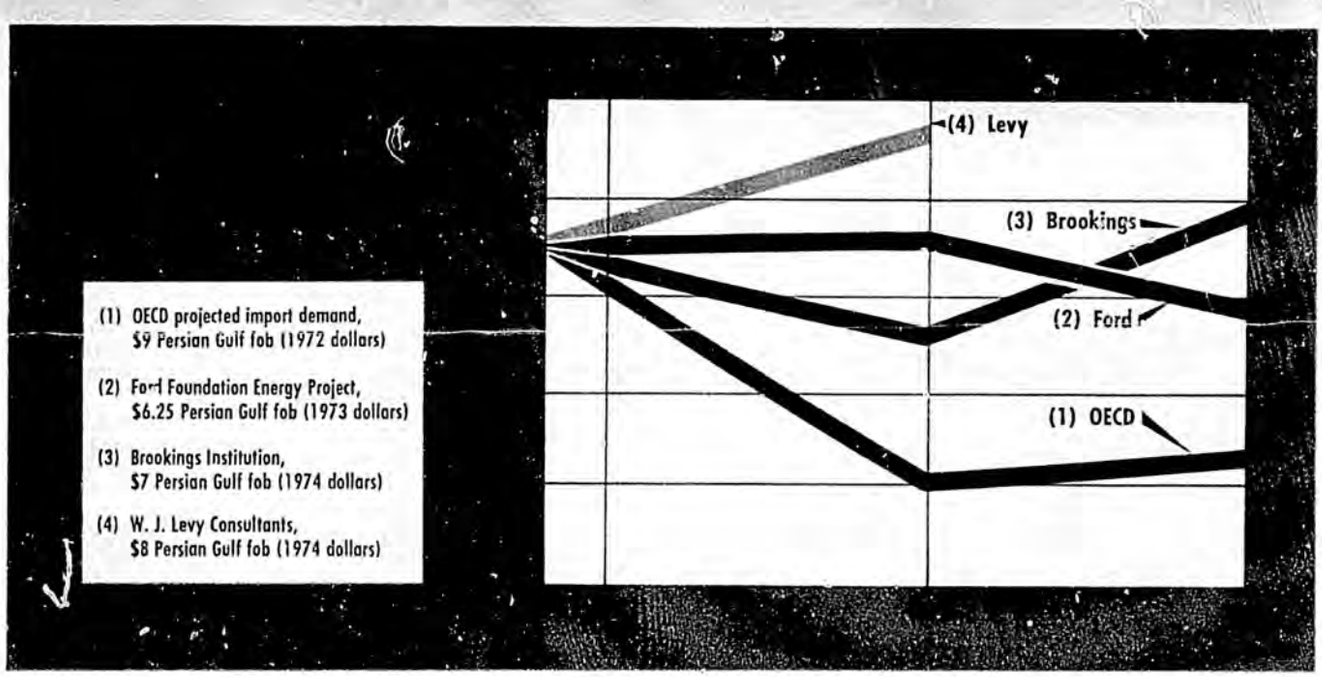
At API time this year, the embargo has long been lifted, crude supplies worldwide are ample even if quadrupled in price, and product stocks in the United States are in better shape this season than a year earlier.

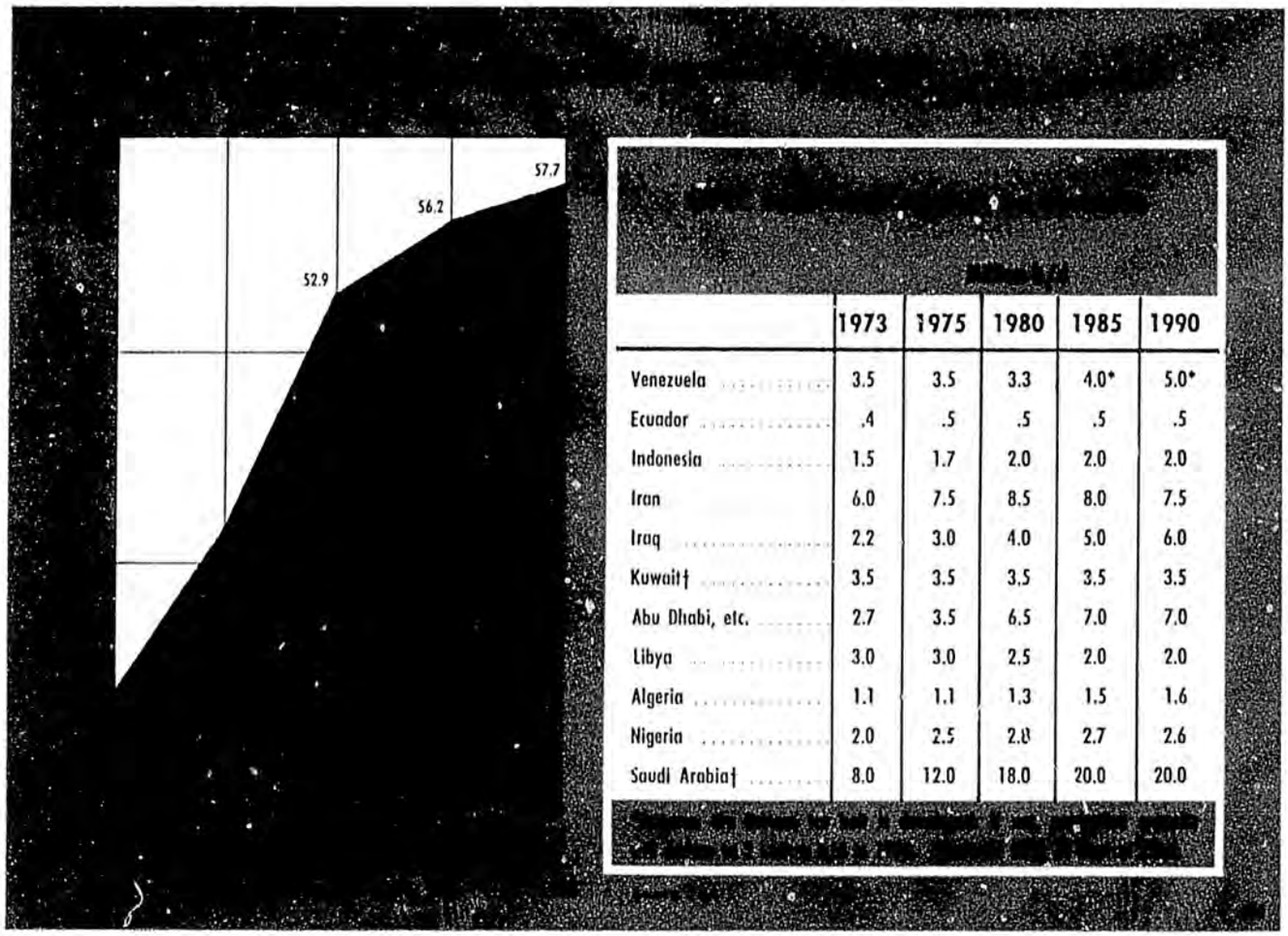
Nonetheless, the nation's basic energy position has improved very little over the year, even though the industry has taken many initial steps aimed at change. The time lag for such projects looking to energy independence inhibit spectacular early achievements.

Americans, however, can count some gains that augur well for the future. From the embargo experience, they have come closer to realizing that:

- The energy crisis is real and not contrived or arranged by the big oil companies to exploit the consumer.
- The days of cheap energy based on ample supplies of oil and gas are over for this country. New petroleum reserves and new energy sources must command higher prices to attract the vast amounts of capital needed for their development.
- Conservation through more-efficient use of fuels has become a necessary watchword for all consumers, industry and public alike.
- Importance of oil and gas in the nation's energy mix will continue for years, and continued imports of oil from abroad must be maintained until the nation can develop greater domestic sources.
- Outlines of a long-range energy mix are beginning to appear, emphasizing the necessity of bringing into play vast reserves of coal and of ultimate reliance on nuclear fuels for generating electricity.

What happened. The nation faced growing energy problems even before the Middle East





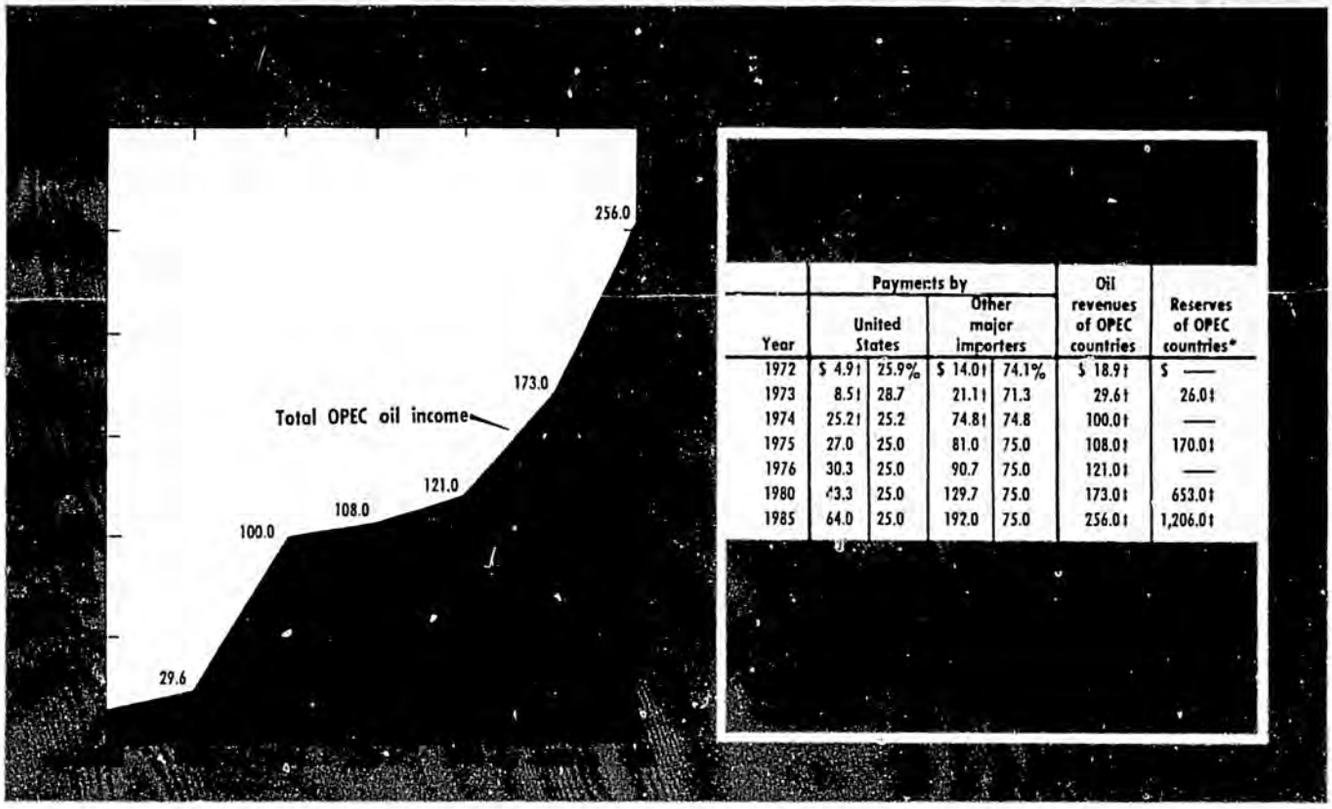
	1973	1975	1980	1985	1990
Venezuela	3.5	3.5	3.3	4.0*	5.0*
Ecuador	.4	.5	.5	.5	.5
Indonesia	1.5	1.7	2.0	2.0	2.0
Iran	6.0	7.5	8.5	8.0	7.5
Iraq	2.2	3.0	4.0	5.0	6.0
Kuwait†	3.5	3.5	3.5	3.5	3.5
Abu Dhabi, etc.	2.7	3.5	6.5	7.0	7.0
Libya	3.0	3.0	2.5	2.0	2.0
Algeria	1.1	1.1	1.3	1.5	1.6
Nigeria	2.0	2.5	2.8	2.7	2.6
Saudi Arabia†	8.0	12.0	18.0	20.0	20.0

conflict of October 1973 and the embargo that followed.

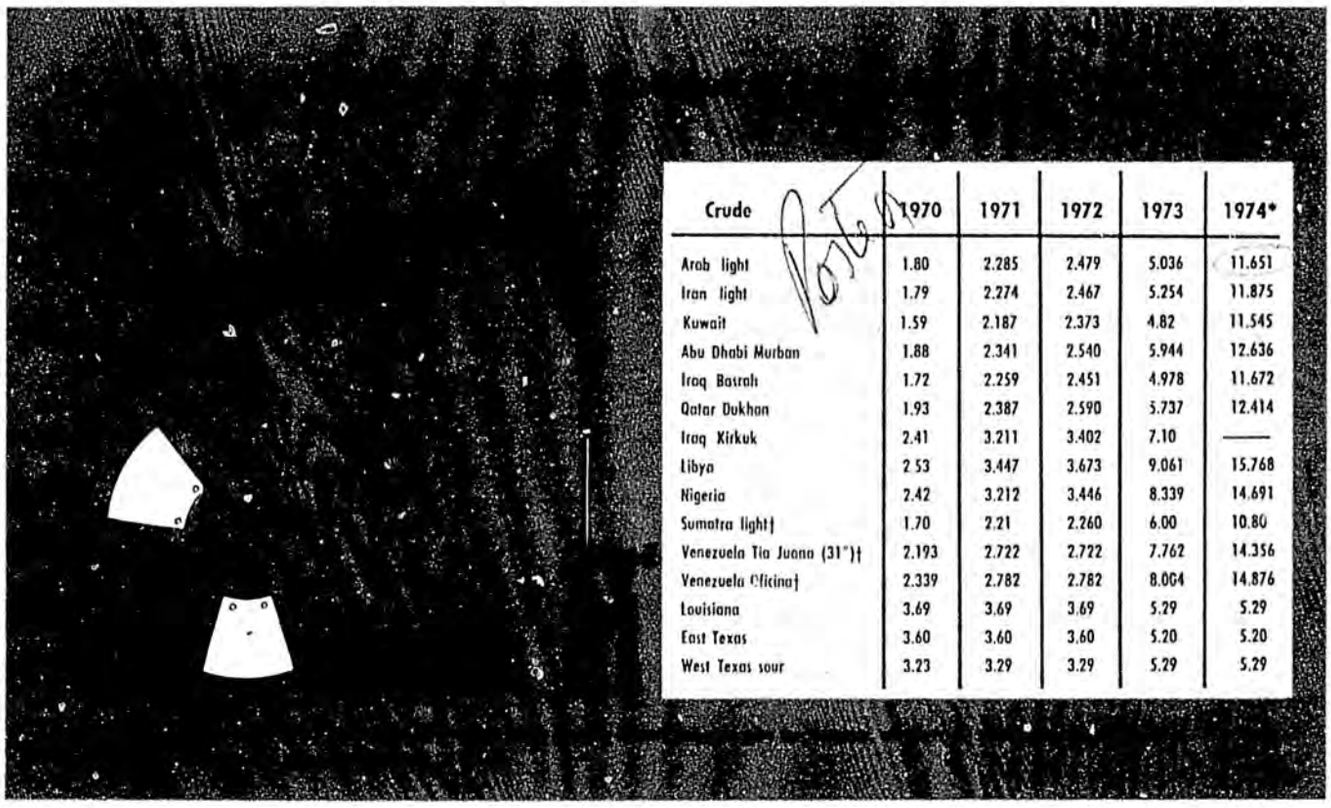
In the last 15 years, the United States has not adequately developed its domestic petroleum resources, while demand for petroleum continued to rocket upward.

In 1959, for example, 2,074 rotary rigs were active and 51,764 total wells were drilled. By comparison, in 1973 only 1,194 rigs were active and wells drilled slumped to 27,602. New crude reserves added by exploration in 1959 were estimated at nearly 3.7 billion bbl and by 1973 this had dropped to about 2.2 billion bbl.

The drain on petroleum reserves was enormous. Liquids production increased from 7,933,000 b/d in 1959 to 10,925,000 b/d in 1973;



Year	Payments by United States		Payments by Other major importers		Oil revenues of OPEC countries	Reserves of OPEC countries*
1972	$ 4.9†	25.9%	$ 14.0†	74.1%	$ 18.9†	$ —
1973	8.5†	28.7	21.1†	71.3	29.6†	26.0†
1974	25.2†	25.2	74.8†	74.8	100.0†	—
1975	27.0	25.0	81.0	75.0	108.0†	170.0†
1976	30.3	25.0	90.7	75.0	121.0†	—
1980	43.3	25.0	129.7	75.0	173.0†	653.0†
1985	64.0	25.0	192.0	75.0	256.0†	1,206.0†



Crude	1970	1971	1972	1973	1974*
Arab light	1.80	2.285	2.479	5.036	11.651
Iran light	1.79	2.274	2.467	5.254	11.875
Kuwait	1.59	2.187	2.373	4.82	11.545
Abu Dhabi Murban	1.88	2.341	2.540	5.944	12.636
Iraq Basrah	1.72	2.259	2.451	4.978	11.672
Qatar Dukhan	1.93	2.387	2.590	5.737	12.414
Iraq Kirkuk	2.41	3.211	3.402	7.10	—
Libya	2.53	3.447	3.673	9.061	15.768
Nigeria	2.42	3.212	3.446	8.339	14.691
Sumatra light†	1.70	2.21	2.260	6.00	10.80
Venezuela Tia Juana (31°)†	2.193	2.722	2.722	7.762	14.356
Venezuela Oficina†	2.339	2.782	2.782	8.064	14.876
Louisiana	3.69	3.69	3.69	5.29	5.29
East Texas	3.60	3.60	3.60	5.20	5.20
West Texas sour	3.23	3.29	3.29	5.29	5.29

but petroleum demand was still not satisfied. It jumped from 9,749,000 b/d to 17,498,000 b/d. To close the gap, the nation's imports increased from 1,780,000 b/d in 1959 to 6,201,000 b/d in 1973. At this figure, imports represented about 35% of domestic supply.

Impact of the October 1973 embargo was not felt until mid-December because of the long supply lines to this country from the Middle East. And full effect of the reduced flow came in the first quarter of 1974 when average imports fell some 2.2 million b/d below expectations. The crisis was met only because U.S. consumption at the same time was reduced by 2.7 million b/d through the first quarter.

Economists just now have been able fully to

World energy resources

	Billion (10^9) units	
	Proved and currently recoverable	Estimated remaining recoverable
United States		
Natural gas (1,000 cu ft)	279	1,447
Natural-gas liquids (bbl)	7.3	36
Crude oil (bbl)	38.1	335
Coal (short tons)	197	1,433
Shale oil (bbl)	77	1,068
Bitumens (bbl)	1	2
Uranium oxide (short tons at $15/lb)	580	1,620
Western Hemisphere (Incl. U.S.A.)		
Natural gas (1,000 cu ft)	407	3,340
Natural-gas liquids (bbl)	N.A.	70
Crude oil (bbl)	78	700
Coal (short tons)	220	2,310
Shale oil (bbl)	130	1,550
Bitumens (bbl)	80	500
Uranium oxide (short tons at $15/lb)	975	2,470
Europe (Excl. U.S.S.R.)		
Natural gas (1,000 cu ft)	171	480
Natural-gas liquids (bbl)	N.A.	13
Crude oil (bbl)	17.7	135
Coal (short tons)	78	415
Shale oil (bbl)	15	150
Bitumens (bbl)	N.A.	N.A.
Uranium oxide	450	570
Asia-Pacific (Inc. Europ. U.S.S.R.)		
Natural gas (1,000 cu ft)	964	4,300
Natural-gas liquids (bbl)	N.A.	120
Crude oil (bbl)	478	1,380
Coal (short tons)	880	3,565
Shale oil (bbl)	35	115
Bitumens (bbl)	N.A.	N.A.
Uranium oxide (short tons)	170	385
Africa		
Natural gas (1,000 cu ft)	193	1,700
Natural-gas liquids (bbl)	N.A.	48
Crude oil (bbl)	58.9	500
Coal (short tons)	10	120
Shale oil (bbl)	10	100
Uranium oxide (short tons)	425	570
Total world		
Natural gas (trillion cu ft)	1,735	9,740
Natural-gas liquids (billion bbl)	N.A.	259
Crude oil (billion bbl)	633	2,685
Syncrude from oil shale and bitumen (billion bbl)	270	2,315
Coal (billion short tons)	1,188	8,410
Uranium oxide (1,000 short tons at $15/lb)	2,020	3,995

Source: H. R. Linden & J. D. Parent, Institute Gas Technology.

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measure the embargo's impact on the economy. The National Petroleum Council, for instance, reports these effects:

- **Gross national product.** A 7% drop was experienced in GNP during the first quarter, whereas a modest increase generally had been expected. The impact especially was felt in slowed activity in autos, tourism, housing, construction and allied activities.
- **Employment.** The unemployment rate during the first quarter averaged 5.2% of the labor force, up 0.5 percentage points from the preembargo rate.
- **Prices.** The sharp, rapid increases in world oil prices during and after the embargo resulting from producer-country actions raised energy costs through the world economy. Each commodity and service became higher priced depending on its use of energy. About one-fourth of the increase in U.S. wholesale prices in 1974 has been attributed to increased energy costs. The higher price levels have revealed that, contrary to prior opinion, petroleum demand is elastic and to some degree reacts to price.
- **International trade.** The higher world oil prices became a big upsetting factor in changing the balance of payments between oil-producing and oil-consuming nations. In the case of the United States, NPC has estimated that the 1974 dollar outflow attributable to its oil imports will reach $25 billion and that total funds flowing into the producing countries will approach $100 billion. The Commerce Department reported that the soaring U.S. oil bill sent this nation's balance of payments into a $900-million deficit during the first half of this year. The department warned that continued deficits could lead to a weakened U.S. dollar compared with other currencies. This in turn could prompt more devaluations or further inflation in the United States.

A World Bank study projects the U.S. dollar outflow at $27 billion in 1975 with total OPEC revenues at $108 billion and U.S. outflow by 1980 at $43 billion and OPEC revenues at $173 billion. By 1985, the U.S. oil-import bill may reach $64 billion and OPEC revenue $256 billion.

OPEC currency reserves from this vast income will mount to $653 billion by 1980 and $1.206 trillion by 1985, according to this study.

The action taken. Americans had four options to meet the oil shortages created by the embargo and in so doing learned some valuable lessons about future approaches.

The options were: cut consumption sharply, convert to alternate fuels, increase domestic production on an emergency basis, and allocate short supplies among consumers on a priority basis.

COAL: the sleeping giant

COAL is the sleeping giant in the world energy picture.

Dr. Karlheinz Bund, chairman of Rukrkohleag A.G. of Essen, West Germany, predicted at the 9th World Energy Conference in Detroit that technological progress will enable coal to overcome its present handicaps and assume a major world energy role.

Proved and probable coal reserves, according to Dr. Bund, are estimated to be at least 8,000 billion tons.

They amount to some 90% of the world's total fossil energy reserves compared with about 10% for crude oil and natural gas together.

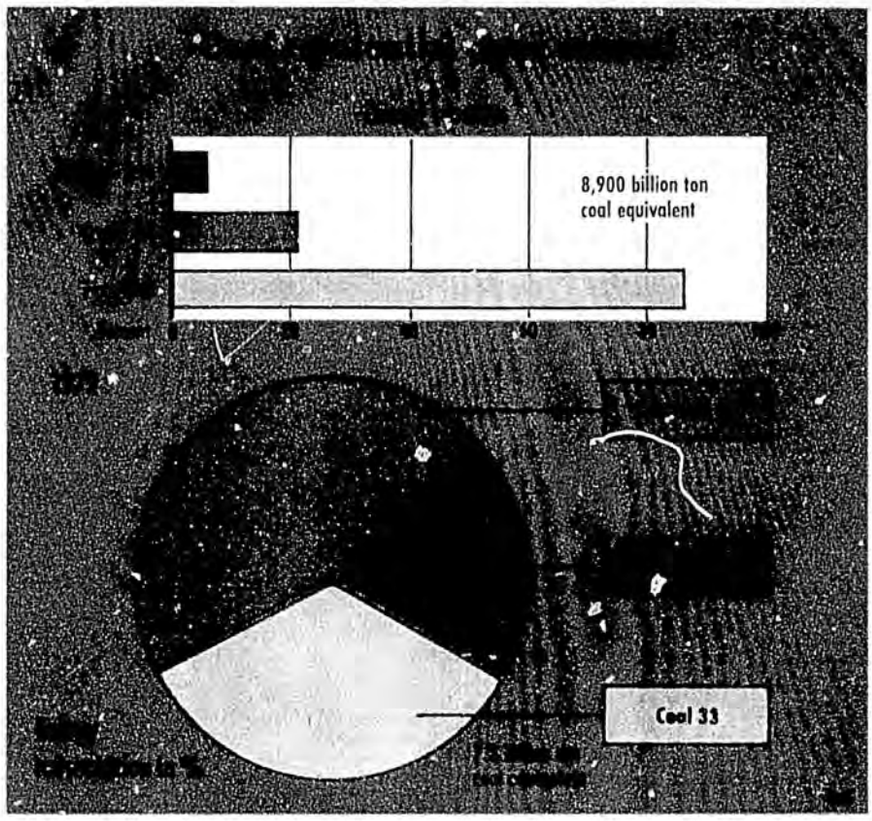
Dr. Bund declared that based on a recovery of only 50% of coal reserves, they will be sufficient for 2,000 more years at the present production level of 2.2 billion tons/year. Even if coal production should be doubled, the reserves still would last about 1,000 years.

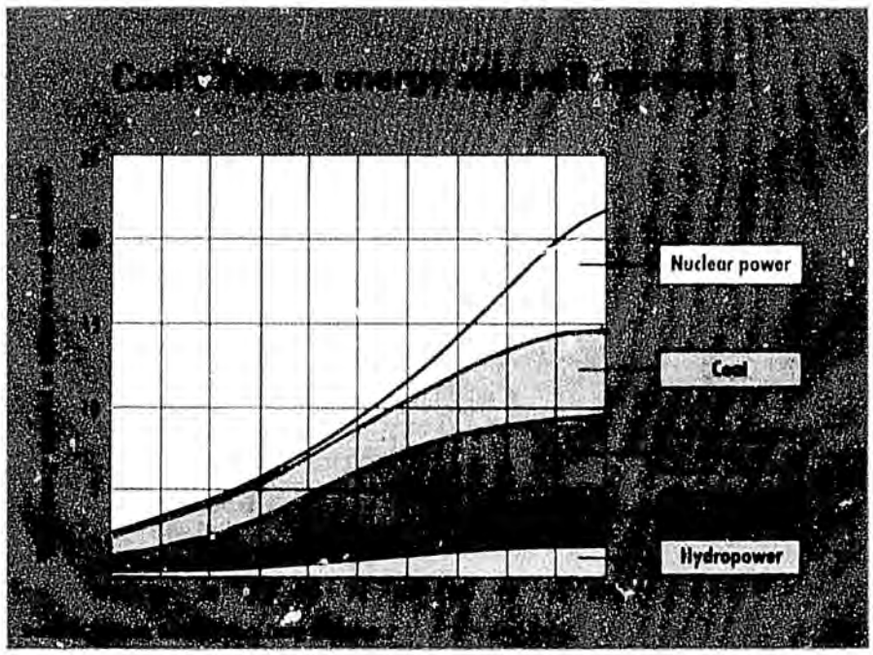
Coal reserves are not only abundant, he added, but also favorably distributed where oil and natural-gas reserves are limited and concentrated in a few areas.

However, coal has several severe handicaps regarding extraction and transport. Dr. Bund said these challenges were:

- The extraction and processing of coal is more difficult and labor intensive than the production of oil and gas. But new, and above all, labor-saving technical mining systems must therefore be expeditiously developed, tested, and introduced into the mines.
- The coal-mining industry, particularly opencast mining, is rated as hostile to the environment. New mining methods with appropriate reclamation standards can solve these problems.
- Transportation of coal over long distances is costly and requires a high level of investment. Efficient transport systems must be innovated, making possible a more-economical movement of coal over long distances.

Dr. Bund forecast that new technologies for coal gasification, liquefaction, and use in power generation will allow this fossil fuel to command a substantial energy role.





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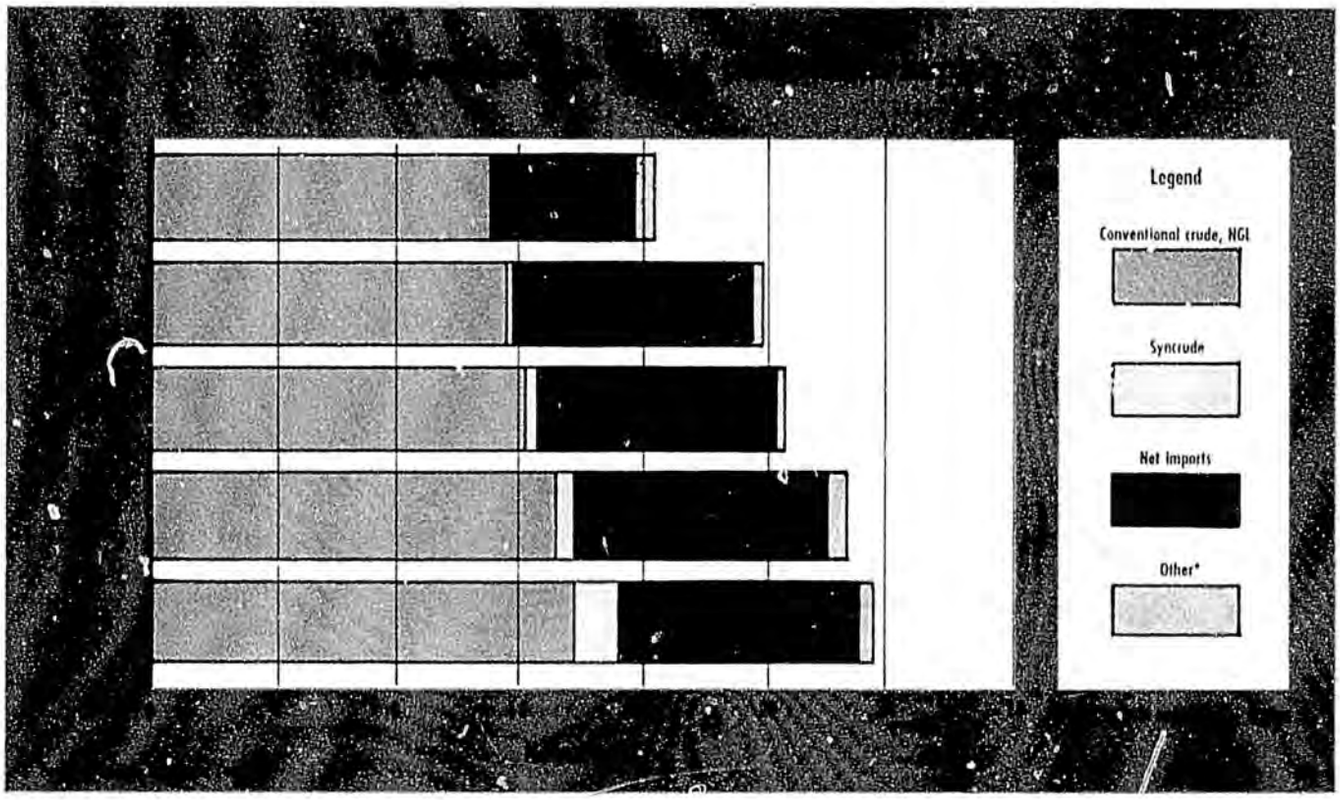
Due to consumer cooperation and some luck with the weather, Americans cut petroleum consumption by 2.7 million b/d in the year's first quarter. This was accomplished by such voluntary actions as car pooling, reduced space heating and lighting, more-efficient airline operations, etc. Such mandatory actions as reduced speed limits for autos also contributed.

NPC estimated that conservation and curtailment activity reduced consumption by 1,010,000 b/d in the 3 months. The warmer-than-normal weather helped reduce demand by 440,000 b/d. NPC estimated that other factors, such as high fuel prices, lowered economic activity, and unavailability of particular products contributed 1,150,000 b/d to reduced consumption.

Conversion to alternate fuels proved a disappointing factor in the crisis. Switching to coal on short notice proved complicated and difficult. NPC reported that actual oil savings from this source were only 61,000 b/d. Previous estimates of potential savings were as high as 120,000 b/d. However, imports of electricity from Canada accounted for 26,000 b/d giving a total of 87,000 b/d gained from conversion to or use of alternate fuels. A decline in petroleum exports ran this total to about 100,000 b/d.

The effects on various petroleum products from these cutbacks are interesting. Gasoline took a sharp reduction of 600,000 b/d for the quarter. Aviation fuels demand dropped 19,000 b/d, middle distillates and residual fuels each 780,000 b/d, and other products including exports 35,000 b/d.

Emergency production increases above normal rates were not employed during the short emergency period. A few oil fields in Texas and the Naval Petroleum Reserves were



Workable rigs (year-end)	Historical 1973	Projected 1974	1975	1976
Land rigs	1,502	1,502	1,541	1,559
Offshore rigs				
Stationary	75	81	88	96
Mobile-bottom supported	58	62	67	77
Floaters	15	21	32	41
Total offshore	148	164	187	214
Total all rigs	1,650	1,684	1,728	1,773
Net additions		34	44	45

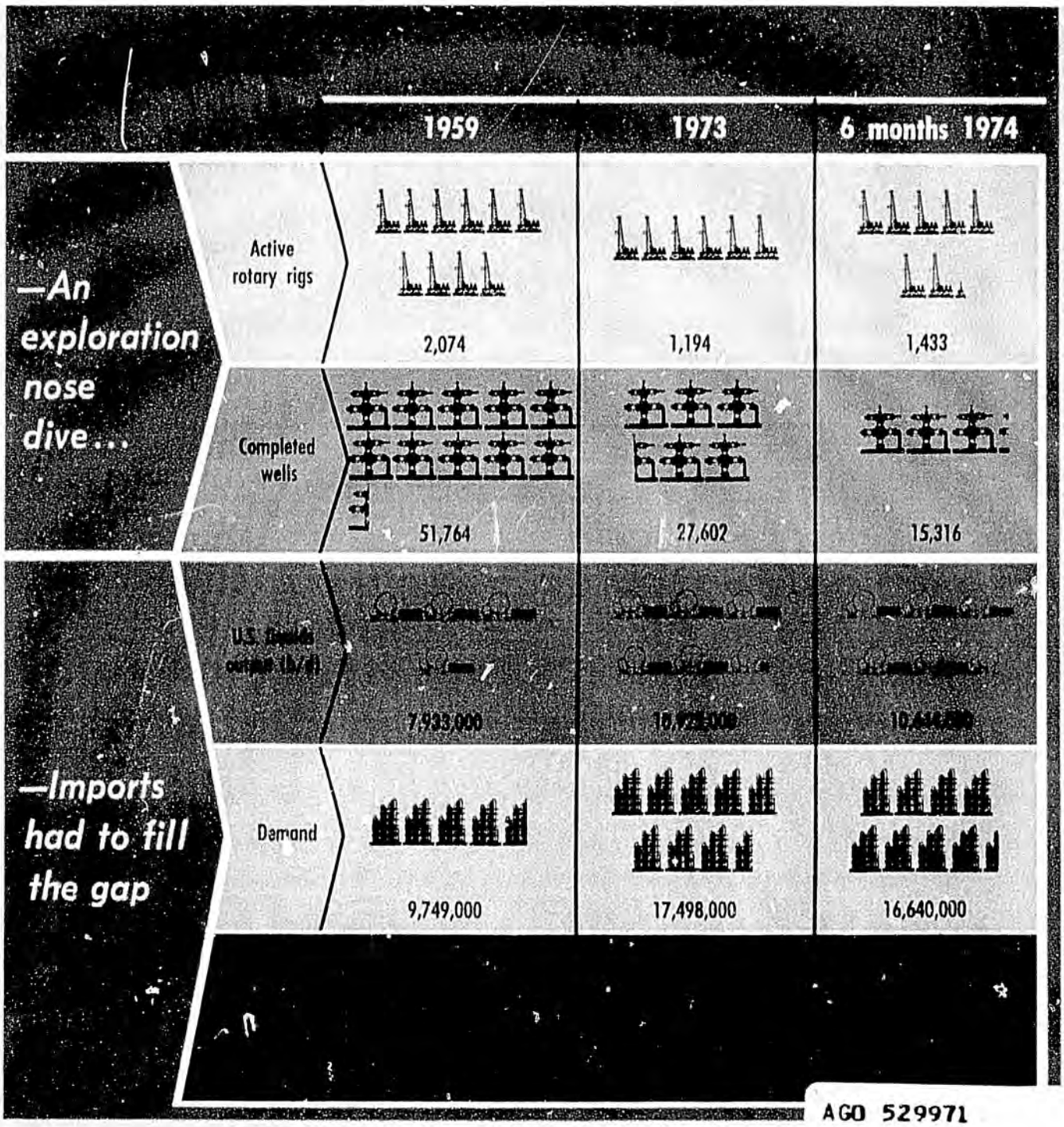
New rig allocation	Historical 1973		Projected 1974		1975		1976	
New rigs manufactured								
Offshore mobile		49		50		50		
Remaining in U.S.			11		17		20	
Exported			38		33		30	
Fixed		86		112		128		
Remaining in U.S.			48		52		50	
Exported			38		60		78	
Total new rigs manufactured		135		162		178		
Less exports	76		93		108			
Less attrition	25		25		25			
Total unavailable		101		118		133		
Net rig additions		34		44		45		

considered potential sources of greater production. But these options came a cropper due to a balky Congress and equally reluctant state oil-regulatory agencies.

Instead, the Federal Energy Office undertook the job of allocating available petroleum products to cover essential activities and minimize adverse effects on agriculture and industry.

The lessons. What lessons for the future did the U.S. learn from this?

- Emergency conversion to other fuels offers little relief. The greatest opportunities are primarily in the electric-utility sector and even there are quite limited. The future in power generation is away from oil and gas to coal, and this trend will lower potential savings from conversion during an emergency, especially since the same trend also is expected in industry. NPC, however, recommends the Government encourage dual-fuel capability in industry and environmental variances to permit coal conversion.
- Emergency domestic oil production also will be limited. The potential from existing fields is small and will decline over time as these reserves are depleted. NPC recommends, however, that the federal Government should evaluate the potential of the Naval Petroleum Reserves, complete development of the reserves, and finalize plans for use in an emergency. State and federal agencies also are urged to cooperate in developing acceptable procedures to permit emergency production of other domestic fields to make even this small degree of protection available.
- It's doubtful that voluntary conservation and curtailment measures in the future will result in more savings than achieved early this



COMPLETION of the base for the 360-mile Alyeska haul road to the North Slope paves the way for intensive construction work on the line next year—and for a major boost in domestic oil supply in 1977.

year. Continued high fuel prices, it is felt, will make conservation a way of life in this country, leaving little room for further savings in an emergency. For this reason, NPC believes the nation should develop standby emergency consumption-reduction measures strongly oriented toward consumer education and cooperation. A mandatory rationing system should be carefully developed but its use withheld until the effectiveness of other measures is fully determined.

• **An emergency petroleum-storage system** is a serious need to give the nation adequate time in a crisis to react positively to any cutoff in imports. NPC observes that "efforts to implement such a program should begin immediately because of the long construction lead times involved."

First consideration of the storage system, according to NPC, should be to provide crude-oil security to domestic refiners. It is estimated that 500 million bbl of crude storage when combined with normally available inventories will provide 90 to 180 days of supply for a large percentage range of crude imports presently foreseen.

NPC believes crude storage could be created in Gulf Coast salt-dome projects and integrated with the crude-transportation system serving Gulf Coast deepwater terminals. Storage of fuel oil at strategic locations on the East Coast also would be needed to fit specific circumstances and specific logistical problems.

Important matters to be resolved in any storage system, NPC pointed out, are the extent of government or industry financing and the administration of emergency storage and its fill.

Cost of security storage will be considerable. The cheapest approach is storage in salt domes which could be provided for 60-85¢/bbl, if the volume to be stored exceeds 100 million bbl. This compares with a cost of $3.80 to $7/bbl for aboveground tank storage. Many salt domes on the Gulf Coast are capable of accommodating storage projects of several hundred million bbl and experience with such storage has proven it safe and reliable.

Leaching of several hundred million bbl of salt-dome storage could be completed in about 6 years, NPC estimated. Thus significant storage could be ready to fill about 1979.

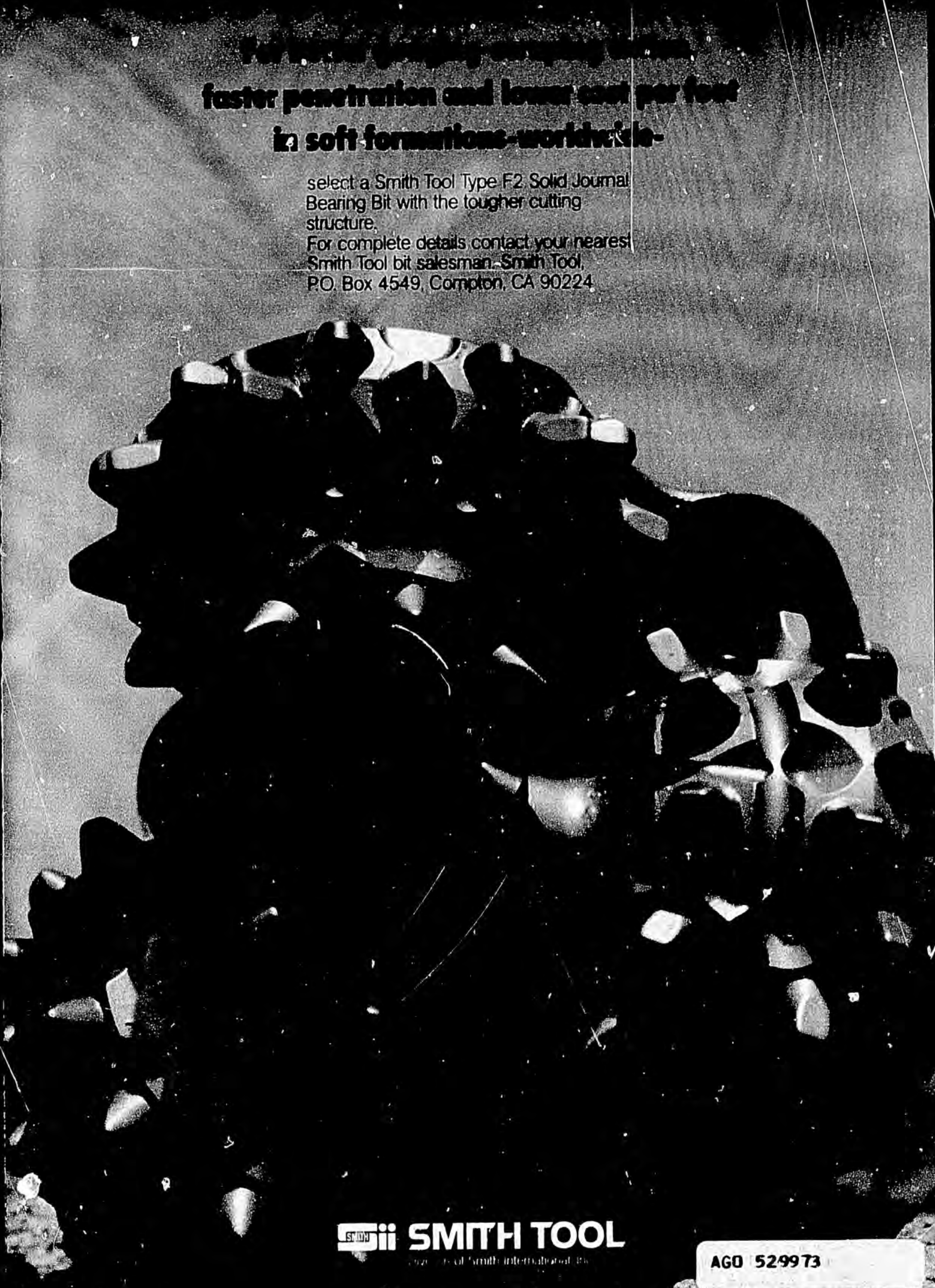
The council recommends that security storage should not be drawn down until after (1) a proper declaration of an energy emergency by Government and (2) appropriate voluntary and mandatory standby consumption and reduction measures have been implemented.

New look at demand. Petroleum economists believe the U.S. economy as a result of the Arab action has now entered a transitional period between an era of abundant supplies of cheap energy and an era of high prices and insecure supply.

A sign of the times is what's happening to U.S. oil demand this year. It's experiencing no growth, in fact actually may decline by as much as 2% from 1973, the first downturn in many years. This trend is attributable to physical restraints early in the year and higher prices the rest of the time.

Because of increased drilling and recovery efforts, domestic oil and gas supply should decline at a slower rate this year than earlier anticipated. Import volumes should remain about equal with 1973, allowing the industry to meet current demand and rebuild inventories.

The 1974 demand experience may herald a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In the last decade, petroleum and natural gas have been the source for approximately 78% of all the energy consumed in this country. But these are fuels we're running out of. Estimates vary, but at best, present oil and natural gas reserves are limited. We must find new sources for these fuels. New sources of energy.

One available source is coal. Estimates range from 400 billion to 800 billion tons of recoverable reserves. Coal that can be converted to gas and oil.

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Now with the price of imported oil around $10 a barrel and liquefied natural gas at over $1 per 1,000 cubic feet, synthetic fuels from coal have become economically feasible So early in 1974, we created a Synthetic Fuels Department to make the fuel we're not running out of supply the fuels we are running out of.

The fuel we're not running out of can

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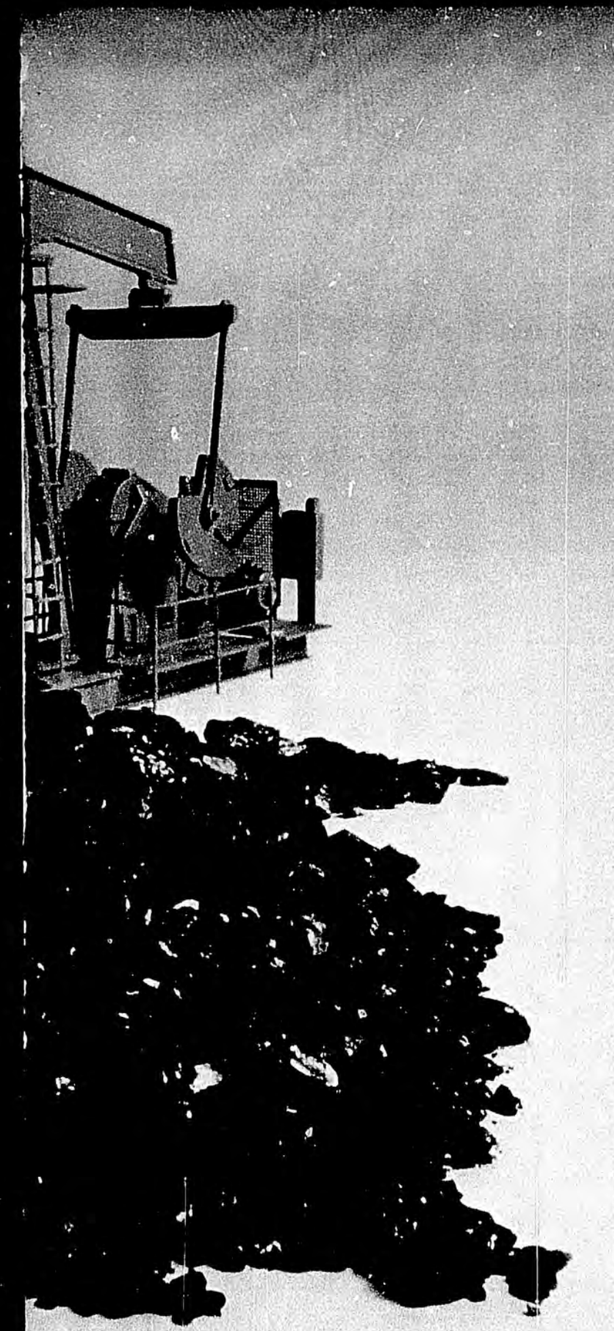

Already this department has eight feasibility or pilot study assignments, three of which are under construction. On the horizon are larger demonstration units. Then full-scale commercial plants.

Thanks to Dravo's synthetic fuels skills, coal may be able to help supply the fuels *you're* running out of. For more information, contact: Dravo Corporation, Synthetic Fuels Department, One Oliver Plaza, Pittsburgh, Pa. 15222.

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distinct slowdown in the growth of petroleum consumption. An NPC future demand study which reflects the opinions of many private observers is based on the assumption that conservation trends will be effective and the economy will just use less energy in the future than previously assumed.

The NPC forecast was put in a framework of three possibilities—high, low and medium range. In the medium case, energy consumption is projected to grow between 1972 and 1985 at an annual average rate of 3.2% with the high range being 3.6% and the low 2.6%. These projections are all below the annual growth rate of 4.5% over the last 5 years and of the 3.7% rate over the last 25 years.

Altered projects are also evident on the supply side. Conventional domestic liquids production is expected to reverse its recent decline and grow at an average rate of 1.3% hitting 13.2 million b/d by 1985 and 13.9 million b/d by 1990. Syncrude is not expected to reach significant volumes until the mid-1980s and should be 1.2 million b/d in 1990.

Imports, in the medium case, should increase gradually from the 1973 level to 8.4 million b/d in 1985 and then gradually decline to 8.1 million b/d in 1990.

Total oil supply in this case should grow at the rate of 2.8% a year reaching 20.6 million b/d in 1980. Then, over the next 10 years, growth rate should ease off to 1.4%/year putting supply at 23.4 million b/d in 1990.

Demand abroad. The same constriction in oil demand taking place in the U.S. this year is occurring throughout the non-Communist world. The Journal's estimate, based on interviews with oil-company economists and market analysts around the world, is for a drop of up to 3% in demand this years versus 1973.

Major consuming countries everywhere are being forced to squeeze the fat out of oil consumption. Balance-of-payments positions in all of them have deteriorated badly. And governmental initiatives have been assisted by the demand-damping effect of soaring prices on the individual consumer.

The Journal sees demand in western Europe as a whole dropping about 7% this year, the U.S. down by up to 20%, and Japan holding about even—despite its almost complete dependence on crude produced by the Organization of Petroleum Exporting Countries cartel. The rest of the non-Communist world will hold about even or perhaps decline slightly.

The Journal forecast assumes normal early-winter weather worldwide, and no coal strike in the U.S. Unusually cold weather in November and December could add some 500,000 b/d to non-Communist fourth-quarter demand. Likewise, a coal strike in the U.S. would add to demand, forcing increased oil imports and storage drawdowns.

Most market analysts expect demand to turn upward again—though modestly—next year. The composite estimate is for an increase of about 4% over 1974—far below pre-1974 gains.

Analysts all caution that trying to figure demand for 1974—even this late in the year—is difficult. Lack of a firm fix on stocks—especially in western Europe—makes it hard to determine how real demand is. There are no good primary figures available yet, and the volume of oil in secondary stocks is a complete unknown.

As a result, numbers that on their face seem to show a huge slide in demand might reflect in part a drawdown of primary and reseller stocks built up in anticipation of the late-1973 Arab oil cutback.

Future reserves. While the bulk of today's proved reserves is in the Middle East, at least one expert in the field says the bulk of those yet to be found will be proved outside the Middle East.

He is Ygnacio Bonillas, retired Standard Oil Co. of California executive. Bonillas puts current world reserves at 700 billion bbl and undiscovered reserves at 1 trillion bbl.

The Middle East today has 400 billion bbl of proved reserves, or about 60% of the world total. It has only about a third, however, of the undiscovered oil.

The U.S., which has roughly 6% of proved reserves, should contribute about 10% of the undiscovered oil. And a large new chunk, about 25%, will come from the vast but relatively poorly explored Sino-Soviet area, Bonillas predicts.

In the U.S., Bonillas counts on heavy new additions to reserves from Alaska and the Outer Continental Shelf and from a marked increase in percentage of oil recovered of that originally in place.

If the U.S. is to realize its potential in the undiscovered-reserve category, however, Bonillas says, it simply must speed up dramatically its opening and leasing of new geologic provinces. The discovery rate for oil and gas reserves in the U.S. is declining because the industry has been forced to keep on drilling in provinces that keep getting older and older. And with each discovery in such an area, conventional places to drill decline still further.

The U.S., the ex-Socal executive declares, has fallen far behind any other region with offshore potential in leasing its offshore acreage. And the result is, he says, that the U.S. is just not making as many discoveries or finding as much oil as it should.

Bonillas cites the North Sea as an example of comparative leasing practices. Ten times more acreage is under lease in the North Sea than off the U.S.—despite the much larger shelf area with potential off the U.S. Offshore U.S. production peaked in 1971 at 1.7 million b/d and has been declining since then. In the North Sea, Bonillas says, production may reach 3-4 million b/d by 1980.

Vastly more acreage has been opened to exploration also off Africa, Southeast Asia, Australia, and Canada, although the U.S. has almost as much offshore territory as any of these areas, except for Africa.

Shortage seen for tubular goods

THE National Petroleum Council in a special study of oil-country tubular goods projects a shortage of 167,000 tons in 1974 but estimates supply and demand for steel goods will be in balance for 1975 and 1976.

This year's shortage is the chief factor in an expected drilling shortfall of some 11 million ft or 2,200 wells that possibly could be drilled with present number of drilling rigs.

The accompanying table gives the annual supply-demand breakdown for 1970-76. These considerations, however, should be borne in mind in interpretating the data:

- While total tonnage shipments projections for 1974-76 are believed reasonable, shipments less than estimates could cause a reduction in wells and footage drilled.
- Availability of imports is quite uncertain because worldwide growth in demand has overtaken the world basic steel and pipe-mill capacity. West German mills are committed to deliveries to the U.S.S.R., and substantial sales have been made by Japanese mills to the Peoples Republic of China.
- Oil and gas-well abandonments in the United States are a relatively small but important source of tubing and casing. These used tubular goods now bring prices comparable with new pipe because of the tight supply situation. Oil-well abandonments dropped from around 20,000 in 1972 to under 15,000 in 1973 and are projected to decrease even further. Gas-well abandonments which totaled about 4,000 a year in 1972 and 1973 are also expected to drop somewhat in 1974. The relative economics of abandonments for salvage vs. continued production will dictate the magnitude of this supply.
- The total tonnage of oil-country tubular goods shipped for domestic use cannot serve as a complete indication of supply-demand balance. The tight supply situation prevailing in 1974 and projected for 1975 includes grade and size availability as well as basic tonnage. All deep wells must use some high-strength casing and, if successful, high-strength tubing.
- The American Iron and Steel Institute indicates about 44% of the casing, tubing, and drill pipe shipped from U.S. mills in 1973 was high-strength material. The need for high-strength pipe is increasing and is projected to continue to rise beyond 1976. Since there is restricted capability for production of this material, there may be a continuing restraint on deep-well drilling.
- Drill pipe is in short supply but is not a measurable constraint to drilling activity. In 1973, drill pipe represented less than 8% of total U.S. output of high-strength oil-country tubular goods. Drill-pipe manufacture is limited by the capacity of the same equipment that is used to make high-strength casing. The problem of competing for mill space is made more acute because a length of drill pipe requires twice as much mill capacity to produce as a comparable length of high-strength casing. Thus, increases in drill-pipe production at present will reduce the output of twice that length of high-strength casing.
- Present attractive economics should encourage expansion of heat-treating capacity as well as basic carbon-steel tubular production, and only a small increase of both should bring tubular supply into balance with rig availability.

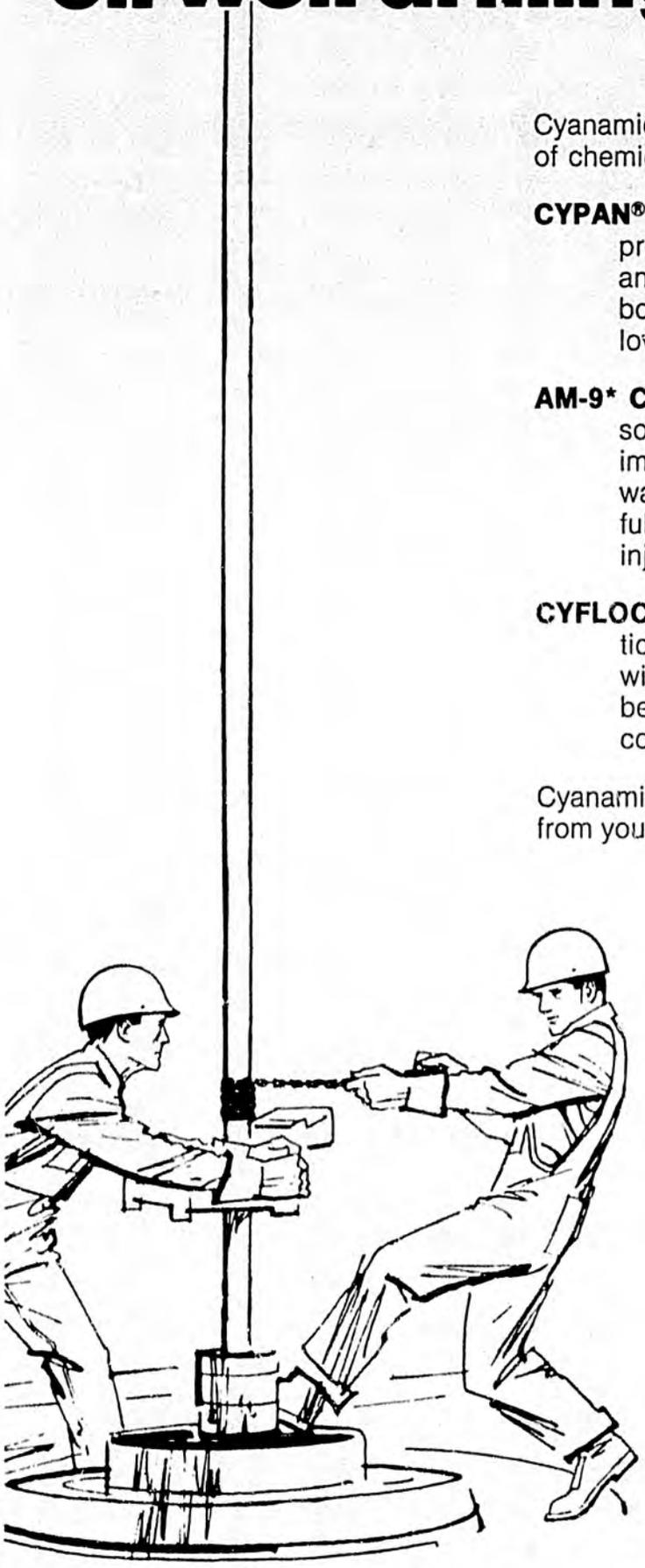
Oil-country tubular goods supply-demand projection

Thousand tons

	Historical				Projected		
	1970	1971	1972	1973	1974	1975	1976
Demand*	1,874	1,662	1,816	1,862	2,263	2,359	2,473
Supply							
Mill output	1,307	1,404	1,277	1,436	1,956	2,317	2,432
Mill inventory	....	....	....	300	150	....	....
Less exports	(88)	(81)	(95)	(198)	(300)	(300)	(300)
Plus imports	109	157	158	162	100	100	100
Miscellaneous†	546	182	476	429‡	523	492	341
Total	1,874	1,662	1,816	1,862	2,096	2,359	2,473
Shortage	....	....	....	....	167	....	....
To inventory§				267	333	250	100

*Based on maximum rig utilization. †Use from inventory, rejects, line pipe used as oil-country goods, secondhand pipe, unreported mill shipments and unidentified imports. ‡Based on 1970-72 average, 23% of demand assumed satisfied from miscellaneous sources. §Domestic shipments to pipe-user inventory. Source: NPC

Hit the pay with Cyanamid oil well drilling chemicals



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If the U.S. really wants a pronounced turnaround in domestic oil supply, Bonillas declares, it simply must open up its frontier areas —and at a much faster pace.

The job ahead. The options available to reduce U.S. dependency on overseas oil in an emergency are fairly clear.

In the short term, conservation of energy through more-efficient use of fuels and the ability to convert facilities to alternate fuels are important but at the moment limited. In the long run, a swing to heavy reliance on coal and nuclear energy, both abundant potential energy sources, will be imperative. But in both cases, full development of the nation's remaining petroleum resources is a paramount necessity.

What are the prospects of more oil and gas? They are good. Although critics have expressed disappointment at the failure of domestic oil production to make a dramatic rise in the wake of higher prices, these new price levels have sparked an upturn in drilling. And this is the necessary first step to changing production and reserve trends.

The National Petroleum Council has observed that "positive steps taken by Government, as a result of the Middle East disturbance, are in the direction of increasing the domestic energy supply." Advancing petroleum prices, accelerated offshore leasing, and approval of the Trans-Alaska pipeline have increased domestic activity, it noted.

Time, capital needed. "However, reversing the historic downward trend," NPC declared, "requires a major commitment of capital by the petroleum industry and substantial time before results are evident."

The decline in activity over the last 10 years cannot be reversed overnight. For one thing, available rigs have declined from 2,967 in 1963 to 1,824 in 1973. Many drilling contractors were forced to liquidate for lack of business, and their equipment was either exported or dismantled for spare parts.

Only activity showing any increase during the past decade was in number of gas wells drilled. These increased from some 4,800 wells in 1963 to nearly 6,400 wells last year. This was attributed largely to increased prices for natural gas in the intrastate market and the drilling needed to meet deliverability clauses of gas-sales contracts.

Drilling. The upturn in drilling started late last year and is expected to continue.

The average number of drilling rigs operating in 1973 was 1,194, but by year-end some 1,400 were operating. This level is believed to represent near maximum utilization of workable rigs available at that time, according to NPC.

By mid-1974, however, operating rigs had reached 1,500 with an average of 1,400. Rig activity is expected to rise by 1976, perhaps in 1975, to an average above 1,500, an increase of 27% over the 1973 average.

NPC forecasts that 31,800 wells will be drilled in 1974 compared with 27,551 last year, with footage drilled in 1974 reaching 160 million against 138 million. The industry should drill 33,600 wells and 172 million ft of hole in 1975 and 34,500 wells and 179 million ft in 1976.

Besides constraints imposed by lack of available rigs, domestic operators encountered severe shortages of oil-country tubular goods. NPC estimates these constraints caused deferment in 1974 of some 2,200 wells and 11 million ft of drilling.

The shortages of oil-country tubular goods arose from several causes: the substantial rise in drilling activity, a change in inventory and sales practices by the steel industry, the impact of price controls on the steel industry, and inability of steel mills to increase production rapidly.

Changes in steel-industry supply practices are an important factor in maldistribution of tubular goods. The NPC study explains what happened:

"For many years, the steel industry maintained inventories of oil-country tubulars in several strategic locations near the heaviest drilling activities. The makeup and quantities were based on customers' estimates of requirements and the sales experience of the steel industry.

"During the years of depressed drilling activity, these 'in-transit' inventories were more than adequate. While the convenience and economies to the customer-operator were obvious, the return on investment to the steel industry was unattractive. In the third quarter of 1973, each of the tubular-goods manufacturers announced that mill shipment of oil-country tubulars would be allocated based largely on each customer's purchase history, and that shipments to in-transits would be eliminated. As a consequence, each operator would have to maintain his own inventory.

"An effective drilling program must be backed up by a 'working inventory' of tubular goods, and therefore, a buildup of many individual inventories by oil companies has begun to replace the few strategic large ones. This change has substantially increased the total of

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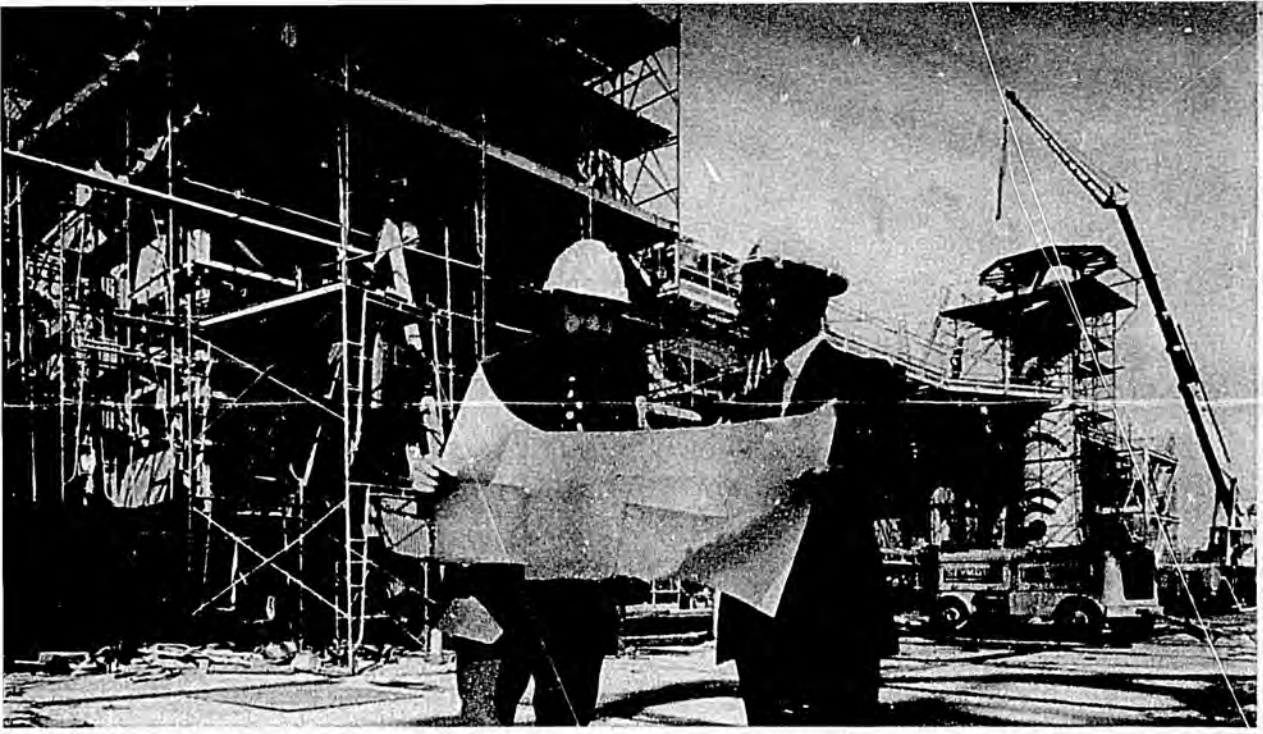
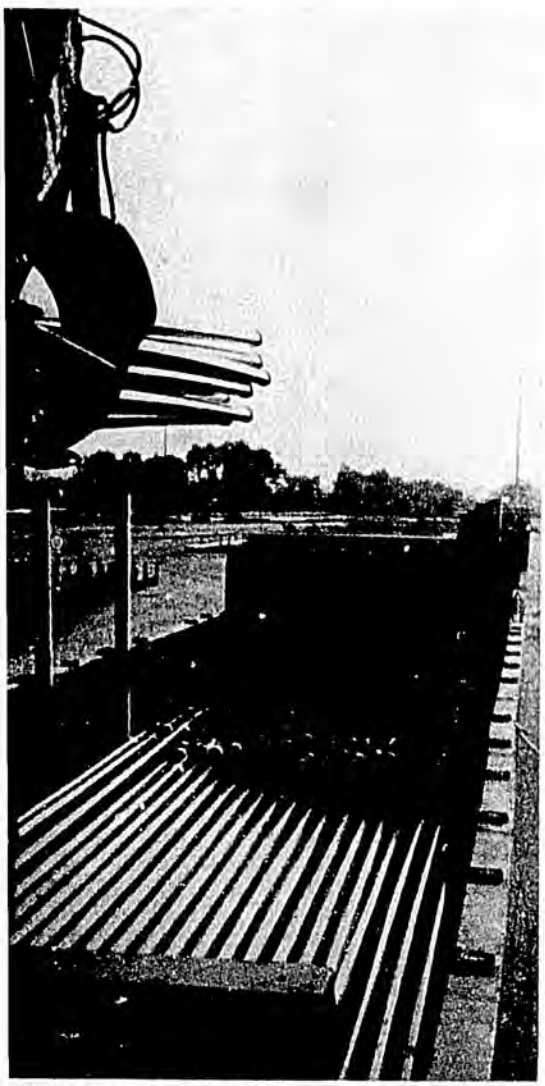


ION work is humming along the British coast as the first U.K. oil fields in the North Sea gear up oduction. These North-Sea production modules now are being installed in Shell-Esso team's Auk were built by William Press Production Systems Ltd at its Howdon, Wallsend, yard.



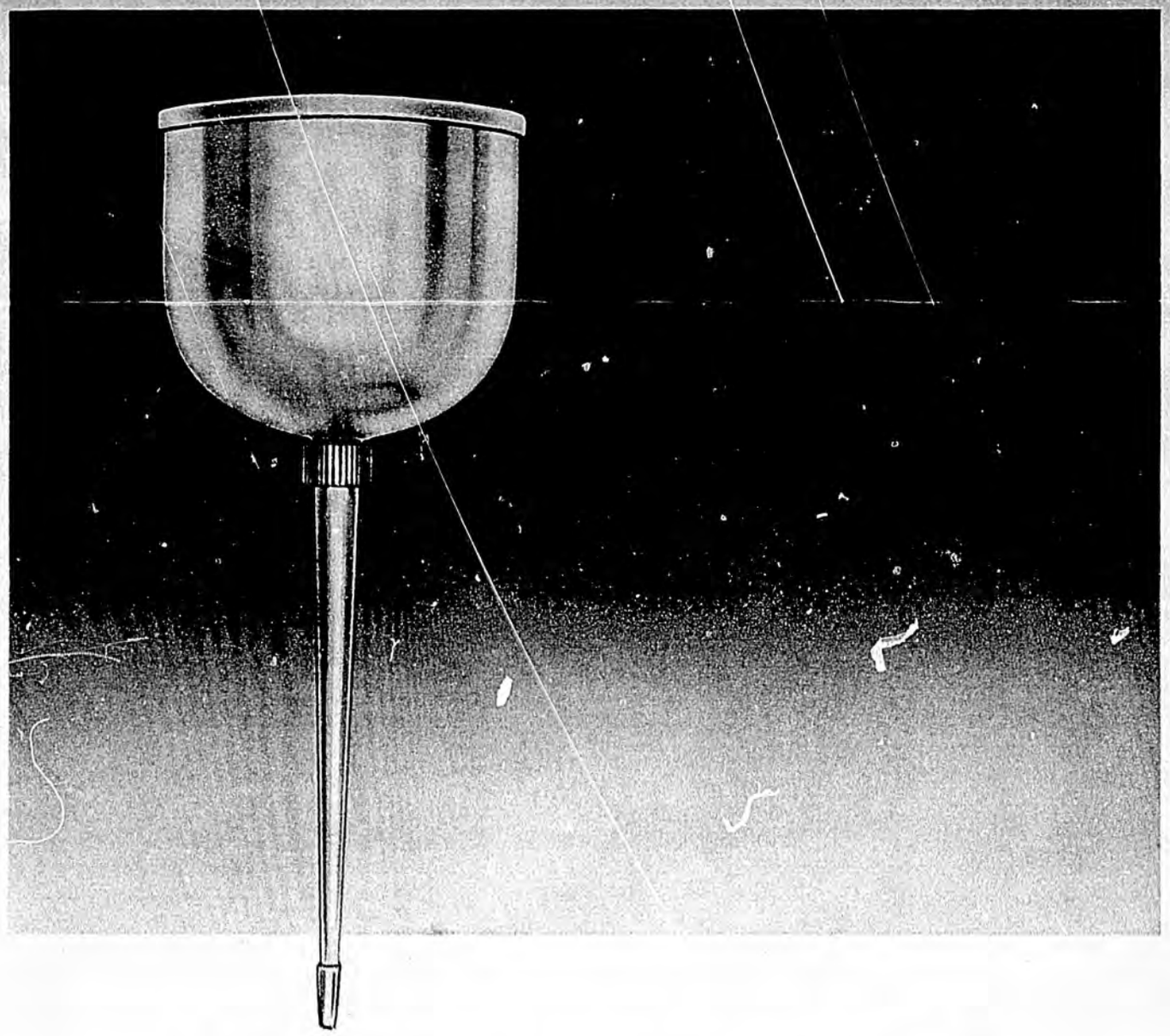
is coming for those U.S. shallow-well drillers handcuffed ısing. Output of 4½-in. O.D., the independent's bread and- will mount to 5 million ft by year-end from U.S. Steel's plant since its first shipment of this size casing last May.

inventories required overall. This, coupled with the large increase in demand, will cause oil-country tubulars to remain in short supply until the inventory transition is completed.

"With the removal of price controls, increased manufacturing of tubulars has begun which speeded up the inventory transition process. Once the shift is completed, the flow of tubulars for consumption should be adequate to support drilling-rig availability, although spot shortages of high-strength casing will probably continue through 1975."

NPC observes that after 1976 the industry's ability to expand drilling will be limited by capacity to manufacture rig equipment. This could become a serious problem, complicated both by rig-plant capacity and demand for rig exports. Total new rig manufacturing is expected to increase from 135 in 1974 to 162 in 1975 and 178 in 1976; but more than half of these are believed under contract for export. The net rig additions for domestic use thus are expected to be only 34 in 1974 and 44 in 1975 and 45 in 1976.

It is estimated that 250 new rigs will have to be manufactured in 1977 to meet expanded drilling goals and that rig expansion of 30%/year from 1976 through 1980 is necessary to reach a rig level of 2,400 by 1980 required to drill at the projected rate of 250 million ft. This rate of rig additions may not be attainable, and NPC estimates that a growth rate of 10-15% anually after 1976 is more reasonable. This would allow the industry to reach a rig population of 2,900 units and drill 300 million ft by 1985.



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However, whether these drilling goals are reached depends on rig manufacturers expanding plant capacity quickly and they cannot make decisions for the required capital investments unless assured of a continuing high level of demand for many years.

There are shortages of other materials, supplies, and equipment involved in expanding drilling—such diverse items for instance as barites, chemicals, frac sand, and wire rope. And demand is exceeding supply of pumping units and servicing rigs.

A similar situation on tubular goods, rigs, other equipment and supplies generally applies to industry activities in other areas of the world. The industry has the capability to search for oil around the world given the right economic climate and governmental cooperation.

What about oil. The big question remains: Is there enough oil and gas left to fill the world's energy needs?

For a generation, yes. Perhaps longer depending on the type of discoveries. But oil and gas are wasting resources with limitations. Eventually, the world will have to undergird its energy structure with other sources. Steps to develop these alternate sources should begin in earnest now.

A recent study made by the Institute of Gas Technology in Chicago and reported to the World Energy Conference in Detroit revealed vast world petroleum resources. It showed 633 billion bbl of oil currently proved and recoverable and another 2,685 billion bbl remaining recoverable. For natural gas 1,735 trillion cu ft is proved and recoverable and 9,740 trillion cu ft is remaining recoverable. In addition 270 billion bbl of syncrude from oil shale and bitumen are proved and 2,415 billion bbl remaining recoverable.

This study reports the United States has more than 38 billion bbl of proved oil reserves and 279 trillion cu ft of gas with 335 billion bbl of oil and 1,447 trillion cu ft of gas yet recoverable. Europe and Asia have 478 billion bbl of oil proved and 1,350 billion bbl recoverable with 964 trillion cu ft of gas proved and another 4,300 trillion recoverable. Africa has 58.9 billion bbl of proved oil reserves and 500 billion bbl recoverable with 193 trillion cu ft of gas proved and 1,700 trillion cu ft recoverable.

The United States stands in the best position of all major industrialized nations, with several unexplored potential petroleum areas. Although Gulf Coast offshore potential may level out in a few years, much importance is attached to continental shelf areas off the East Coast, Pacific Coast, and Gulf of Alaska.

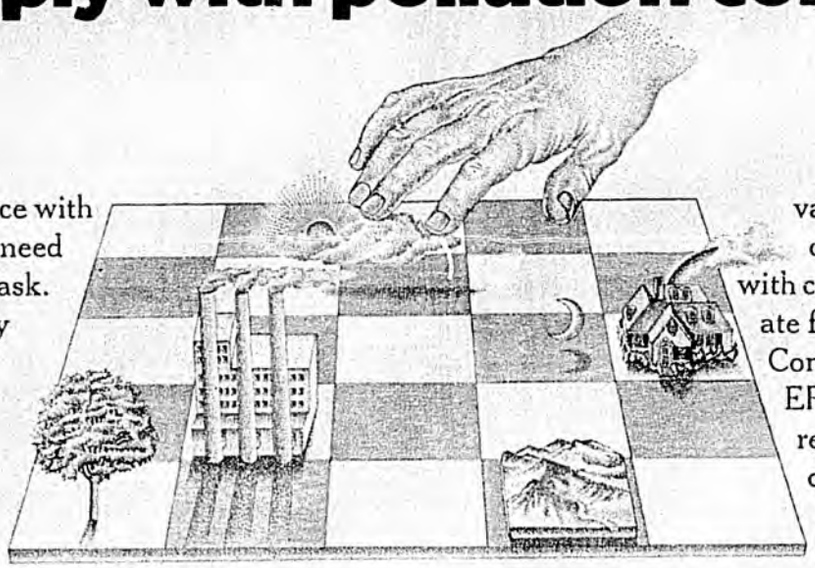
A giant new field already has been discovered in the Pacific waters off Santa Barbara where development will resume this year following a prolonged shutdown for environmental reasons. But new reserves elsewhere in the Pacific and off the Atlantic shores will take years to discover and to develop.

Alaska's North Slope will come into production in 1977, probably with an initial output close to 2 million b/d. Once the oil pipeline is built and the gas pipeline is under construction, further exploration will resume along the northern continental shores from Point Barrow to the Mackenzie Delta and beyond.

This Arctic region has great significance for the medium-range or long-range future. The technical know-how now being developed along Alaska's North Slope and into Canada's High Arctic Islands will find application off the

NORTH SEA reserves figures grow more impressive daily. And 1974's exploration bag includes the sea's biggest field yet—Statfjord in Blocks 33/9 and 33/12 in Norwegian waters. Production tests by the Mobil group at above well and two stepouts led to Norway industry ministry reserve estimate of 2 billion bbl of oil and 1.76 trillion cu ft of gas.

Why move heaven and earth to comply with pollution controls?



Achieving compliance with environmental laws need not be a Herculean task. But without properly managed programs and acceptable environmental studies, financial resources can be wasted.

For superior accuracy and reliability in environmental assessments, industry and government are both depending on Environmental Research & Technology. ERT has proven many times that its methods for environmental modeling, monitoring, analysis and prediction set the standards for cost effectiveness in environmental diagnosis.

When a planned activity's total environmental effect must be evaluated, ERT offers complete environmental impact assessment. ERT provides precise appraisals of the impact of design, construction and future operations of any industrial project. Because of the close liaison ERT maintains between the project sponsor and the regulatory agencies, several of ERT's assessment efforts have resulted in landmark permit approvals within very short time spans.

The company's staff of over 350 includes experienced specialists in every major discipline of environmental science. ERT uses many specially developed state-of-the-art mathematical models to provide quantitative predictions of the impact of future developments. Typically, ERT specialists first model the current conditions in an area, then validate the model through carefully designed monitoring and advanced analytical techniques. The validated model can then be used with confidence to evaluate future conditions. Consider AIRMAP®, ERT's real-time air quality and meteorological network. Using analytical instrumentation, telemetry equipment and computer software programs, AIRMAP provides highly reliable measurements of current air quality and very accurate predictions of air quality up to 30 hours in advance. The same talent and technology responsible for the integrated AIRMAP programs is also available in its component parts — air diffusion analysis, stack and ambient air monitoring, and air quality impact assessments.

The company's bioassay techniques, chemistry and biology laboratories, and general field experience are valuable to every aspect of water quality evaluation. Specially designed software is merged with comprehensive data gathering to simulate the effects of industrial effluents on water quality. Unique mathematical models provide an assessment framework for evaluating the physical, chemical and biological integrity of water bodies. In addition, ERT has developed advanced techniques to analyze the hydrologic cycle, including precipitation, runoff, percolation through the soil and groundwater movement.

For more information on ERT and its leadership in the field of environmental science and technology, write Ms. Karen Mathiasen, Marketing Services, Environmental Research & Technology, Inc., 696 Virginia Road, Concord, MA 01742.

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North Cape of Norway and into the waters surrounding Greenland and the Svalbard or Spitzbergen group of islands.

In more-immediate prospect, however, is additional output from established oil-producing areas across the United States. In the past 115 years, a grand total of about 60 billion metric tons of oil has been discovered. Of that, about 14 billion tons has been produced and consumed. Of the remaining oil known to be in place, roughly 4.8 billion metric tons can be economically recovered at prices that were effective in 1972.

Now that new U.S. oil has increased in value to more than $10/bbl, more of the remaining oil can be recovered by various means. Some engineers estimate the target for eventual recovery at nearly 7 billion tons or 50 billion bbl.

Add to that prospects that were not explored or developed when oil prices were lower. Add further, marginal oil sands bypassed in thousands of wells.

None of these measures toward added recovery will contribute tremendous volumes individually. But when extrapolated by the multitude of prospects, such efforts by thousands of producers—coupled with vigorous offshore exploration and development—could reverse the U.S. oil decline. That is if the incentives remain.

North Sea spreads. Among the other industrialized nations with excellent oil and gas prospects relative to their own domestic needs stand Britain and Norway. They share the bulk of the new oil development in the North Sea.

The Netherlands enjoys a strong natural-gas position; and Germany, France, and Italy retain oil and gas potential which was by and large neglected during the lush period of cheap, plentiful foreign oil. Only Japan of all the major importers has little recourse for offsetting the economic drain with domestic output.

The North Sea is a prime example of what can happen. As one success follows another in oil and gas exploration in the waters of northwestern Europe, it is no longer appropriate to confine attention simply to the North Sea.

Hydrocarbons have now been reported in the Atlantic west of the Shetland Islands, in the Celtic Sea off southern Ireland, and in the Norwegian Sea between Norway and Greenland.

Proved gas reserves in the United Kingdom alone now stand at about 1.2 trillion cu m with potential in all British waters estimated at 3.3 trillion cu m, or in American terms 116 trillion cu ft.

Oil discoveries in the British and Norwegian sectors of the North Sea show even greater promise of improving Europe's energy self-sufficiency. On the U.K. side, existing reservoirs indicate an annual production rate of 100 million tons or 2 million b/d by 1980. This may be doubled with new discoveries by 1983. Norway's output, primarily from Ekofisk will approach 15 million tons next year together with about 40 million cu m of associated gas pipelined to the German coast.

Altogether, the North Sea is hailed as Britain's salvation in the current energy crisis, and its promised output will go far to aid all of Europe in a difficult period.

The new order of energy planning in the European Community calls for a daring, threefold increase in the use of natural gas from all sources by 1985. This would require the doubling of domestic production within the nine nations. Oil will remain the principal fuel as imports are supplanted by increasing production from the North Sea and elsewhere. But oil's share of total energy will decline from today's 58% to less than 40%, while natural gas assumes second position at 25% of total energy. European producers feel that these ambitious goals may be met on natural-gas production and usage by 1985.

The opportunities for successful petroleum exploration in many areas of the earth remain enormous in future potential.

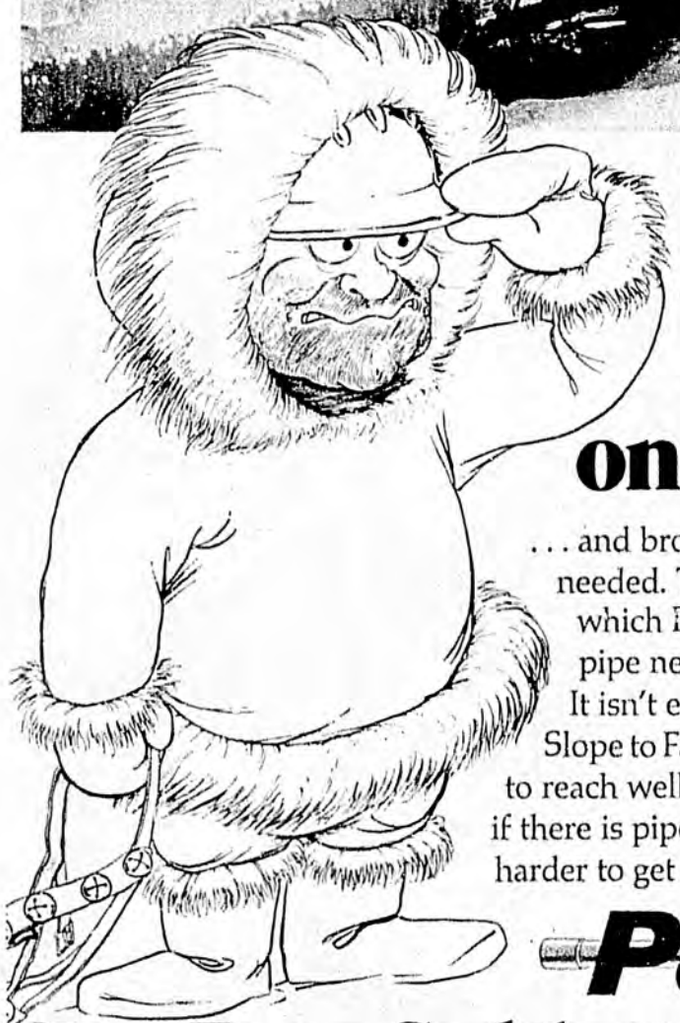
Productive capacity. Of more critical near-term importance, perhaps, is productive capacity. And here's where the U.S. is really hurting. U.S. spare producing capacity has vanished. Only a handful of U.S. fields could produce substantially more oil than they are producing now. And most if not all of them are blocked from doing so in short order because of legal or physical bottlenecks. More oil is being produced than is being found. And Lower 48 production continues its slow decline.

On the other hand, the 11 member countries of the Organization of Petroleum Exporting Countries are adding rapidly to total OPEC producing capacity—whether or not they choose to use it.

FEA credits OPEC with productive capacity in 1973 of 33.9 million b/d. By 1975, FEA predicts, this figure will soar to 41.8 million b/d, and on up to 52.9 million b/d by 1980—with a comparative leveling off then for the next 10 years to 56.2 million b/d in 1985 and 57.7 million b/d in 1990.

The biggest single contributor to the OPEC climb will be Saudi Arabia. FEA plots the Saudi gain from 8 million b/d in 1973 to 12 million in 1975, 18 million in 1980, reaching 20 million in 1985 and holding there through 1990.

Other big gainers include Abu Dhabi and its Trucial Coast neighbors and Iraq. FEA sees Abu Dhabi et al jumping from 2.7 million b/d in 1973 to 7 million b/d in 1990 and Iraq gaining



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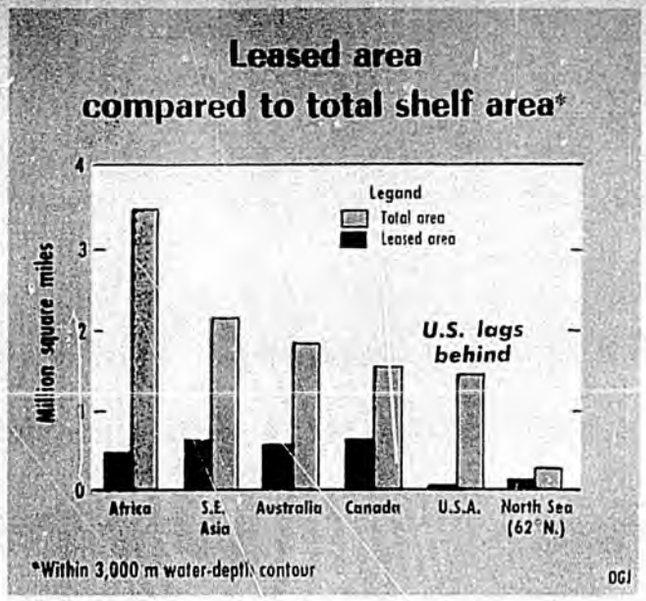

from 2.2 million to 6 million over the same period.

Modest gains are seen for Nigeria, Algeria, Iran, Indonesia, and Ecuador. Venezuelan capacity is seen dropping by 1980 then turning upward—but only if she begins development and production by then from the Orinoco heavy-oil belt.

Kuwait is forecast to hold steady at 3.5 million b/d of capacity. The only loser among the OPEC clan, FEA predicts, will be Libya which is expected to drop to 2 million b/d by 1990 from 3 million b/d in 1973.

U.S. decline slowed. While production (and productive capacity) continues to drop in the U.S., the drop is less steep than it would have been had not higher crude prices been permitted.

A broad Journal survey of U.S. oil companies came up with estimates ranging up to 200,000 b/d as the added volume of oil being produced Oct. 1 as a direct result of improved prices. That's some 2.27% of current total output of about 8.8 million b/d of crude and lease condensate. The concensus puts the figure at 100,000-200,000 b/d.

The impact of higher prices, however, is just beginning to show. All companies—from majors to the smaller independents—agree that the impact will balloon with time as new fields are developed and new enhanced-recovery projects begin to pay off.

In general, oil companies expect to see an increase in U.S. production (excluding the Alaskan North Slope) in the 1975-79 timeframe. The delay is due to the lengthy lead times required to bring new production on stream to make up for normal declines in existing wells.

Examples of industry response to higher crude prices are many and varied. They include:

- Accelerated exploration and leasing of wildcat acreage.
- Drilling of wildcat prospects and proved leases that were ignored or considered marginal at best under old prices.
- Expansion of secondary-recovery projects and stepped-up research on tertiary methods designed to increase ultimate recovery from known fields.
- Reactivation of wells that had been temporarily abandoned because they no longer were profitable at old prices.
- Lengthened life for stripper wells.

Cost is high. The industry must find over 600 billion bbl of reserves in the world between 1970-1985 to keep pace with demand, according to projections of Chase Manhattan Bank. That is about equal to present estimated proved world reserves.

The bank breaks down estimated capital costs for this tremendous task like this: About $400 billion to find these reserves and prepare wells for production and $370 billion for capital items beyond the wellhead, for a total of $770 billion. Other miscellaneous capital spending and debt service will boost that to $1.2 trillion in current dollars. A 10% annual inflation rate would increase this to $2.2 trillion over the 15-year period and a 15% inflation rate would put the total cost at $3.1 trillion.

Of the original uninflated $1.2 trillion, some $460 billion in terms of current dollars must come from profits, and at the 10% inflation rate this figure would rocket to $900 billion. If this inflated figure is attained, the oil industry would need profit growth of 21% a year based on 1970 earnings and 17% a year based on 1973's higher profits.

Some of the capital-spending categories are staggering. In the exploration area, nearly $150 billion would go for drilling contractors' on such items as platforms, workboats, other offshore vehicles, and services. Another $67 bollion would go for drilling contractors' services and $54 billion for lease equipment. Processing facilities would require $156 billion of which $110 billion would go for conventional refineries. Pipelines would take $36 billion.

Can this huge amount of capital funds be generated? Probably. Speaking only of the situation in the United States, the National Petroleum Council recently observed:

"It appears that adequate capital will be available to the petroleum industry to expand exploration and drilling in line with availability

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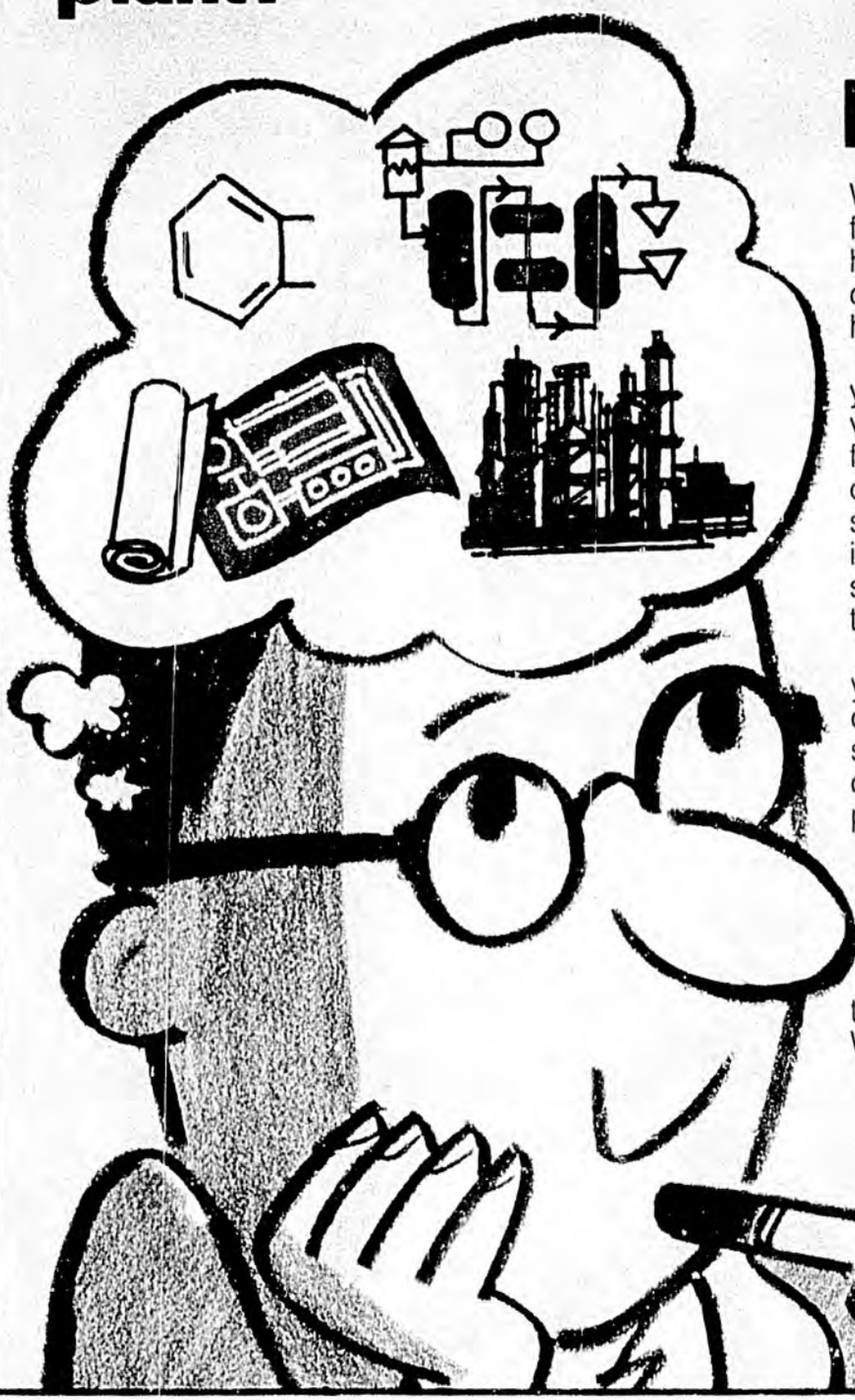

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of equipment and manpower during the 1974-76 period. Longer range, free-market prices of domestically produced hydrocarbons will be needed to generate sufficient internal capital to attract enough outside funds to increase exploration and drilling within the United States.

"Similarly, capital formation of all segments of the petroleum-service industry appears adequate to provide equipment and supplies for increased operations through 1976. But for the longer term, a clear energy policy leading toward increased development of indigenous energy supplies must be set forth to assure the service industry of steadily rising profits so that adequate plant expansion can begin soon and be financed."

The alternatives. The only real alternative for the United States and other consuming nations aside from developing greater domestic oil and gas resources is developing other sources of energy.

Reducing consumption or storing reserve supplies are short-term options. They are necessary. But used alone, conservation could adjust demand to supply only at heavy cost to human well-being and prosperity.

John W. Simpson and Philip N. Ross of Westinghouse Electric Corp., speaking to the World Energy Conference, declared that "at current growth rates, the world is simply running out of oil and gas. Since these are the fuels on which we depend for almost two-thirds of our energy needs, their potential depletion, as well as their current shortage, defines the true nature of the energy crisis.

"We must sharply reduce our disproportionate dependence upon oil and gas," they said, "by shifting to energy sources that are more plentiful—uranium and coal."

Nuclear admittedly is the greatest hope in long range. It already is accelerating under the new order of energy self-sufficiency. The European Community, for example, only recently stepped up its plans to multiply present nuclear capacity by a factor of nearly 20 by 1985. Electricity from the atom will meet 17% of Community needs by then compared with 1.5% now. The United States is off to a slower start, planning a ten-fold increase by that date.

These are impressive figures, but nuclear power will not become an important energy factor until much later. When Europeans and Americans join in learning how to harness the fast-breeder reactor and eventually nuclear fusion, giving mankind the same power that energizes the sun, a new era in world energy will have arrived.

Coal is widely hailed as the most plentiful fossil fuel. But in recent years, competition from lower-cost oil and more recently new environmental restrictions have contributed to a steady downturn in coal production in Europe. In the Netherlands, the last coal mine is due for closing shortly. German production is declining at about 10%/year with total output approaching the 100-million-ton level. French and Belgian production follow the same downward trends. In the U.S., with more coal reserves than all other Western industrialized nations, a similar decline resulted many years ago from the inroads made by domestic oil and particularly by natural gas priced too cheaply because of federal regulation.

Coal recently seemed ready for a strong revival. Then along came new environmental laws which denied to coal many of the markets it had managed to retain. The outlook today for reversing the coal-production trend is not good. Despite the ambitious U.S. Government program for increasing output from the present 550 million tons/year to 1 billion tons by 1985, the coal industry is still bound in inaction. Price restrictions were recently lifted, but all the other impediments remain.

The escalated prices for oil have made coal potentially competitive throughout the world, but the problems of accelerating coal production are staggering, forcing this resource to rank as a long-range option.

Other alternate hydrocarbons in the form of shale oil and tar sands show some promise in North America. Their potential contributions to energy supply, of course, cannot help Europe directly. But to the extent that they permit the withdrawal of the U.S. from buying competition for world oil, they remain of interest in Europe.

The reserves of these alternate American fuels are impressive. But the rate at which they can be produced entails significant limiting factors. Shale-oil production in the Rocky Mountains will be hampered by environmentalists, shortages of capital, and shortages of process water. The most optimistic outlook is for an ultimate production rate of about 1 million b/d. The Canadian tar sands may do better than that, but they suffer the problems of remoteness, high capital, and possible national export curbs.

With all the limitations shared by nuclear power, by coal, and by alternate fuels, the greatest portion of the short-term energy load remains where it has been for years—with conventional oil and natural gas. END

PLEASE NOTE: THE PRECEDING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

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Worldwide crude production

(Daily average in thousands of bbl)

	Sept. 1974	Aug.* 1974	9-month average Daily prod. 1973	9-month average Daily prod. 1974	Change from Vol	Change from %
WESTERN HEMISPHERE						
Argentina	405.0	405.0	418.0	411.0	− 7.0	− 1.7
Bolivia	50 0	50.0	47.0	49.0	2.0	4.3
Brazil	170.0	170.0	169.0	171.0	2.0	1.2
Canada	1,615.0	1,644.0	2,127.0	1,728.0	−399.0	−10.1
Chile	30.0	30.0	32.0	29.0	− 3.0	− 9.4
Colombia	170.0	170.0	199.0	177.0	− 22.0	−11.1
Ecuador	115.0	110.0	203.0	181.0	− 22.0	−10.8
Mexico	580.0	580.0	460.0	568.0	108.0	23.5
Peru	75.0	75.0	68.0	76.0	8.0	11.8
Trinidad	180.0	180.0	165.0	176.0	11.0	6.7
United States	8,334.0	8,926.0	9,210.0	8,945.0	−265.0	− 2.9
Venezuela	2,770.0	2,859.0	3,365.0	3,026.0	−339.0	−10.1
Total	**14,994.0**	**15,199.0**	**16,463.0**	**15,537.0**	**−926.0**	**− 5.6**
WESTERN EUROPE						
Austria	45.0	45.0	49.0	46.0	− 3.0	− 6.1
Denmark	4.0	4.0	4.0	4.0	....	....
France	25.0	25.0	26.0	23.0	− 3.0	−11.5
West Germany	120.0	117.0	131.0	122.0	− 9.0	− 6.9
Italy	20.0	20.0	15.0	19.0	4.0	26.0
Netherlands	39.0	25.0	30.0	30.0	....	....
Norway	50.0	47.0	36.0	30.0	− 6.0	−16.7
Spain	40.0	40.0	14.0	41.0	27.0	192.9
United Kingdom	2.0	2.0	2.0	2.0	....	....
Yugoslavia	65.0	65.0	67.0	68.0	1.0	1.5
Total	**410.0**	**390.0**	**374.0**	**385.0**	**11.0**	**2.9**
MIDDLE EAST						
Abu Dhabi	1,412.0	1,479.0	1,342.0	1,484.0	142.0	10.6
Bahrain	67.0	66.0	68.0	67.0	− 1.0	− 1.5
Dubai	235.0	243.0	238.0	232.0	− 6.0	− 2.6
Iran	5,836.0	5,956.0	5,807.0	6,074.0	267.0	4.6
Iraq	1,604.0	1,718.0	1,939.0	1,770.0	−169.0	− 8.7
Israel	100.0	100.0	100.0	100.0	....	....
Kuwait	2,225.0	2,068.0	3,122.0	2,627.0	−495.0	−15.9
Oman	285.0	289.0	290.0	294.0	4.0	1.4
Qatar	515.0	516.0	591.0	518.0	− 73.0	−12.4
Saudi Arabia	8,780.0	8,276.0	7,845.0	8,429.0	584.0	7.4
Sharjah†	60.0	60.0	....	20.0	20.0	....
Syria	150.0	150.0	150.0	150.0	....	....
Turkey	65.0	65.0	65.0	65.0	....	....
Total	**21,334.0**	**20,986.0**	**21,557.0**	**21,830.0**	**273.0**	**1.3**
ASIA-PACIFIC						
Afghanistan	0	0	0	0	0	0
Australia	471.0	290.0	368.0	363.0	− 5.0	− 1.4
Burma	20.0	20.0	20.0	20.0	....	....
Brunei-Malaysia	378.0	375.0	314.0	367.0	53.0	16.9
India	150.0	150.0	148.0	149.0	1.0	0.7
Indonesia	1,420.0	1,350.0	1,299.0	1,459.0	160.0	12.3
Japan	15.0	15.0	15.0	15.0	....	....
Pakistan	8.0	8.0	8.0	8.0	....	....
Taiwan	2.0	2.0	2.0	2.0	....	....
Thailand	0.2	0.2	0.2	0.2	....	....
Total	**2,464.2**	**2,210.2**	**2,174.2**	**2,383.2**	**209.0**	**9.6**
AFRICA						
Algeria	900.0	950.0	1,123.0	1,077.0	− 46.0	− 4.1
Angola	20.0	20.0	14.0	20.0	6.0	42.9
Cabinda	150.0	150.0	137.0	149.0	12.0	8.8
Congo	40.0	40.0	39.0	38.0	− 1.0	− 2.6
Egypt	172.0	170.0	207.0	133.0	− 74.0	−35.7
Gabon	210.0	210.0	143.0	182.0	39.0	27.3
Libya	1,325.0	1,273.0	2,259.0	1,656.0	−603.0	−26.7
Morocco	2.0	2.0	2.0	2.0	....	....
Nigeria	2,294.0	2,299.0	1,995.0	2,269.0	274.0	13.7
Tunisia	95.0	94.0	83.0	79.0	− 4.0	− 4.8
Total	**5,208.0**	**5,172.0**	**6,002.0**	**5,605.0**	**−397.0**	**− 6.6**
COMMUNIST						
China	900.0	900.0	860.0	900.0	40.0	4.7
Rumania	290.0	290.0	283.0	290.0	7.0	2.5
U.S.S.R.‡	9,393.0	9,042.0	8,496.0	9,091.0	595.0	7.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,693.0**	**10,342.0**	**9,739.0**	**10,391.0**	**652**	**6.7**
WORLD TOTAL	**55,103.2**	**54,299.2**	**56,309.2**	**56,131.2**	**−178.0**	**− 0.3**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

Worldwide gas production

(billion cu ft)

	Sept.	Aug.	1974 cum.
WESTERN HEMISPHERE			
Argentina	32.4	24.0	204.1
Bolivia	12.6	11.6	113.1
Brazil	4.2	4.0	35.4
Canada	290.9	268.3	2,436.6
Chile	21.7	11.9	153.6
Colombia	9.6	4.6	76.0
Ecuador	0.8	0.8	4.4
Mexico	59.0	59.0	506.9
Peru	6.4	6.4	54.2
Trinidad	9.9	4.7	52.7
United States	1,826.7	1,824.7	16,483.3
Venezuela	146.8	41.0	1,321.2
Total	**2,421.0**	**2,261.0**	**21,441.5**
WESTERN EUROPE			
Austria	5.7	5.3	72.6
Denmark	0	0	0
France	24.2	28.3	218.1
West Germany	57.9	59.7	521.7
Italy	45.1	58.2	456.3
Netherlands	229.5	135.3	2,157.4
Norway	0	0	0
Spain	0	0	0
United Kingdom	83.3	137.9	998.0
Yugoslavia	3.8	4.2	40.0
Total	**449.5**	**428.9**	**4,464.1**
MIDDLE EAST			
Abu Dhabi	0	0	0
Bahrain	0.2	0.3	3.0
Dubai	0	0	0
Iran	75.6	151.3	680.4
Iraq	9.7	10.0	96.1
Israel	0.1	0.2	3.6
Kuwait	0.2	0.2	1.3
Oman	0	0	0
Qatar	0.1	0.1	1.4
Saudi Arabia	0	0	0
Sharjah†	0	0	6
Syria	0	0	0
Turkey	0	0	0
Total	**85.9**	**162.1**	**785.8**
ASIA-PACIFIC			
Afghanistan	7.8	7.8	69.6
Australia	14.8	15.9	116.9
Burma	0.4	0.5	4.3
Brunei-Malaysia	0.2	0.3	1.2
India	0.4	0.2	14.0
Indonesia	13.7	1.7	108.0
Japan	8.0	8.5	74.1
Pakistan	11.2	11.1	101.8
Taiwan	3.2	4.1	32.7
Thailand	0	0	0
Total	**59.7**	**50.1**	**522.6**
AFRICA			
Algeria	1.6	0.9	15.4
Angola	4.9	2.8	25.7
Cabinda	0	0	0
Congo	0.6	0.6	4.2
Egypt	5.0	5.7	35.2
Gabon	1.3	1.3	10.7
Libya	4.6	4.3	31.6
Morocco	2.5	6.6	22.8
Nigeria	5.8	4.6	44.2
Tunisia	3.6	0.2	8.4
Total	**29.9**	**27.0**	**198.2**
COMMUNIST			
China	16.0	16.8	141.5
Rumania	97.4	77.1	699.8
U.S.S.R.‡	760.0	758.9	6,725.7
Other	42.7	26.9	376.3
Total	**916.1**	**879.7**	**7,943.3**
WORLD TOTAL	**3,962.1**	**3,808.8**	**35,355.5**

Total wells drilled in the United States*—September 1974†

Data compiled by API

State-district	Total completions: Oil‡	Gas§	Dry holes	Total wells**	Total footage	Total wells all types‖	Total footage‖	Total exploratory wells¶: Oil‡	Gas§	Dry holes	Total wildcats	Footage
Alabama	1	2	5	8	57,499	8	57,499	..	1	4	5	36,513
Alaska	2		1	3	18,153	3	18,153	...	...	1	1	7,954
Arkansas	9	4	15	28	150,374	28	150,374	...	...	5	5	32,040
California	164	5	33	202	506,251	207	528,539	6	1	20	27	159,419
North	...	4	15	19	101,879	19	101,879	...	1	8	9	45,840
Central Coastal	29	...	7	36	150,923	38	157,425	3	...	5	8	57,721
East Central	124	1	9	134	223,102	134	223,102	2	...	6	8	50,608
South	9	...	2	11	25,157	12	25,782	...	...	1	1	1,250
Offshore	2	...	...	2	5,190	4	20,351	1	...	...	1	4,000
Colorado	15	2	36	53	271,582	53	271,582	...	...	25	25	123,527
Florida	1	...	5	6	67,520	6	67,520	1	...	5	6	67,520
Illinois	34	...	42	76	184,408	78	184,964	3	...	18	21	56,198
Indiana	14	4	26	44	64,158	45	65,774	3	2	14	19	24,326
Kansas	104	53	131	288	803,977	292	810,435	11	3	78	92	304,174
Kentucky	19	11	29	59	87,696	60	88,608	3	2	10	15	24,180
Louisiana	64	44	108	216	1,558,482	219	1,582,976	5	4	62	71	694,602
North	32	30	34	96	400,766	96	400,766	1	3	17	21	142,121
South	15	6	53	74	706,320	75	716,720	4	1	29	34	399,314
Offshore	17	8	21	46	451,396	48	465,490	...	...	16	16	153,167
Michigan	12	5	32	49	251,029	53	261,708	4	5	21	30	150,280
Mississippi	1	1	31	33	236,363	33	236,363	...	1	26	27	207,142
Missouri	...	...	2	2	4,555	2	4,555	...	...	2	2	4,555
Montana	4	4	44	52	162,226	52	162,226	2	...	30	32	115,286
Nebraska	3	...	14	17	87,507	17	87,507	...	...	10	10	50,478
New Mexico	33	50	29	112	647,131	112	647,131	...	3	12	15	111,605
East	28	24	21	73	495,831	73	495,831	...	3	10	13	101,684
West	5	26	8	39	151,300	39	151,300	..	...	2	2	9,921
New York	13	...	...	13	15,304	17	19,325	..	...	...	...	
North Dakota	3	...	8	11	85,388	11	85,388	3	...	5	8	64,710
Ohio	40	61	11	112	514,445	112	514,445	5	13	1	19	94,540
Oklahoma	108	86	120	314	1,732,553	323	1,763,243	7	5	28	40	289,048
Pennsylvania	102	57	8	167	335,129	191	370,719	2	6	6	14	52,225
South Dakota	1	...	3	4	22,166	4	22,166	...	...	3	3	13,080
Tennessee	7	...	7	14	19,696	14	19,696	4	...	7	11	15,527
Texas	375	144	301	820	3,996,237	833	4,047,568	24	39	203	266	1,561,457
Dist. 1	19	1	7	27	66,128	27	66,128	1	1	6	8	25,320
Dist. 2	1	19	23	43	271,123	43	271,123	...	9	19	28	179,950
Dist. 3	34	12	30	76	470,960	76	470,960	1	8	20	29	265,296
Dist. 4	13	29	16	58	371,276	58	371,276	...	9	9	18	119,306
Dist. 5	2	1	13	16	77,639	16	77,639	...	...	8	8	45,699
Dist. 6	3	5	17	25	195,165	25	195,165	...	1	11	12	93,305
Dist. 7B	66	16	61	143	451,240	149	469,020	8	2	50	60	224,462
Dist. 7C	37	24	25	86	401,417	88	405,817	3	1	14	18	51,933
Dist. 8	86	11	14	111	564,444	112	570,708	3	5	10	18	138,174
Dist. 8A	34	7	22	63	337,769	67	360,656	...	...	11	11	73,900
Dist. 9	53	3	44	100	290,066	100	290,066	7	2	24	33	133,669
Dist. 10	27	16	22	65	440,433	65	440,433	1	1	14	16	151,866
Offshore	...	...	7	7	58,577	7	58,577	...	...	7	7	58,577
Utah	10	...	2	12	75,444	12	75,444	...	...	1	1	5,015
Virginia	...	3	...	3	15,411	3	15,411	...	...	...	...	...
West Virginia	41	59	18	118	307,269	118	307,269	2	3	4	9	26,401
Wyoming	20	5	30	55	398,137	55	398,137	1	2	23	26	193,575
Total—Sept. 1974	**1,200**	**600**	**1,091**	**2,891**	**12,670,090**	**2,961**	**12,864,725**	**86**	**90**	**624**	**800**	**4,490,377**
Total Aug. 1974	**1,210**	**555**	**968**	**2,733**	**12,409,855**	**2,814**	**12,619,981**	**62**	**66**	**536**	**694**	**3,942,903**
Cum. 1974	**9,160**	**5,232**	**8,362**	**22,754**	**110,068,952**	**23,481**	**111,822,062**	**597**	**839**	**4,811**	**6,247**	**36,881,904**
Cum 1973	**7,193**	**4,375**	**7,311**	**18,879**	**94,668,545**	**19,604**	**96,459,242**	**457**	**565**	**4,185**	**5,207**	.....

*Does not include miscellaneous drilling not related to oil and gas exploration and production. †Covers reports of completed or abandoned wells received by the API during the period from Aug. 24, 1974, through Sept. 27, 1974. ‡Includes multiple completion wells which produce gas from one or more zones but oil from at least one zone. A multiple completion well is counted as one well. §Includes multiple completion wells that produce gas from all zones. A multiple completion well is counted as one well. Gas wells also include so-called condensate wells. ¶Exploratory wells include: new-field wildcats, new-pool wildcats, deeper-pool tests, shallower-pool tests and outpost (extension) tests. ‖Includes two strat tests and 68 service wells, 4,400 and 184,235 ft. **Excludes service wells, strat, and core tests.

Worldwide crude production

(Daily average in thousands of bbl)

	Aug. 1974	July* 1974	8-month average Daily prod. 1973	8-month average Daily prod. 1974	Change from Vol	Change from %
WESTERN HEMISPHERE						
Argentina	405.0	405.0	419.0	411.0	− 8.0	− 1.9
Bolivia	50.0	50.0	48.0	48.0	....	....
Brazil	170.0	170.0	169.0	171.0	2.0	1.2
Canada	1,644.0	1,676.0	1,793.0	1,748.0	− 45.0	− 2.5
Chile	30.0	30.0	32.0	30.0	− 2.0	− 6.3
Colombia	170.0	170.0	199.0	173.0	− 26.0	−13.1
Ecuador	110.0	85.0	202.0	190.0	− 12.0	− 5.9
Mexico	160.0	600.0	459.0	572.0	113.0	24.6
Peru	75.0	75.0	68.0	76.0	8.0	11.8
Trinidad	170.0	170.0	164.0	172.0	8.0	4.9
United States	8,926.0	8,955.0	9,227.0	8,957.0	−268.0	− 2.9
Venezuela	2,850.0	2,940.0	3,362.0	3,056.0	−306.0	− 9.1
Total	**15,200.0**	**15,326.0**	**16,142.0**	**15,606.0**	**−536.0**	**− 3.3**
WESTERN EUROPE						
Austria	45.0	45.0	49.0	47.0	− 2.0	− 4.1
Denmark	4.0	4.0	4.0	4.0	....	....
France	25.0	25.0	26.0	24.0	− 2.0	− 7.7
West Germany	120.0	120.0	131.0	123.0	− 8.0	− 6.1
Italy	20.0	20.0	15.0	20.0	5.0	33.3
Netherlands	25.0	30.0	30.0	29.0	− 1.0	− 3.3
Norway	47.0	47.0	35.0	27.0	− 8.0	−22.9
Spain	41.0	40.0	13.0	41.0	28.0	215.4
United Kingdom	2.0	2.0	2.0	2.0	....	....
Yugoslavia	65.0	65.0	67.0	67.0	....	....
Total	**394.0**	**398.0**	**372.0**	**384.0**	**12.0**	**3.2**
MIDDLE EAST						
Abu Dhabi	1,479.0	1,641.9	1,338.0	1,493.0	155.0	11.6
Bahrain	66.0	67.0	68.0	67.0	− 1.0	− 1.5
Dubai	245.0	245.0	233.0	240.0	7.0	3.0
Iran	5,956.0	6,064.0	5,810.0	6,103.0	293.0	5.0
Iraq	1,440.0	1,635.0	1,919.0	1,755.0	−164.0	− 8.5
Israel	100.0	100.0	100.0	100.0	....	....
Kuwait	2,076.0	2,286.0	3,072.0	2,678.0	−394.0	−12.8
Oman	289.0	288.0	288.0	295.0	7.0	2.4
Qatar	516.0	520.0	588.0	518.0	− 70.0	−11.9
Saudi Arabia	8,284.0	8,778.0	7,755.0	8,387.0	632.0	8.1
Sharjah†	50.0	50.0	0	8.5	8.5	....
Syria	150.0	150.0	150.0	150.0	....	....
Turkey	65.0	65.0	65.0	66.0	1.0	1.5
Total	**20,716.0**	**21,889.0**	**21,386.0**	**21,860.5**	**474.5**	**2.2**
ASIA-PACIFIC						
Afghanistan	0	0	0	0	0	0
Australia	290.0	313.0	367.0	350.0	− 17.0	− 4.6
Burma	20.0	20.0	20.0	20.0	....	....
Brunei-Malaysia	375.0	375.0	313.0	366.0	53.0	16.9
India	150.0	150.0	148.0	149.0	1.0	0.7
Indonesia	1,417.0	1,450.0	1,284.0	1,465.0	171.0	13.2
Japan	15.0	15.0	15.0	15.0	....	....
Pakistan	8.0	8.0	8.0	8.0	....	....
Taiwan	2.0	2.0	2.0	2.0	....	....
Thailand	0.2	0.2	0.2	0.2	....	....
Total	**2,277.2**	**2,333.2**	**2,167.2**	**2,375.2**	**208.0**	**9.6**
AFRICA						
Algeria	850.0	900.0	1,122.0	1,019.0	−103.0	− 9.2
Angola	20.0	20.0	14.0	20.0	6.0	42.9
Cabinda	145.0	145.0	135.0	147.0	12.0	8.9
Congo	37.0	37.0	38.0	36.0	− 2.0	5.3
Egypt	155.0	160.0	206.0	113.0	− 93.0	−45.1
Gabon	155.0	160.0	140.0	161.0	21.0	15.0
Libya	1,394.0	1,583.0	2,256.0	1,785.0	−471.0	−20.9
Morocco	2.0	2.0	2.0	2.0	....	....
Nigeria	2,100.0	2,196.0	1,977.0	2,240.0	263.0	13.3
Tunisia	65.0	65.0	83.0	66.0	− 17.0	−20.5
Total	**4,922.0**	**5,268.0**	**5,973.0**	**5,589.0**	**−384.0**	**6.4**
COMMUNIST						
China	900.0	900.0	860.0	900.0	40.0	4.7
Rumania	290.0	290.0	283.0	290.0	7.0	2.5
U.S.S.R.‡	9,042.0	9,207.0	8,450.0	9,042.0	592.0	7.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,342.0**	**10,507.0**	**9,693.0**	**10,342.0**	**649.0**	**6.7**
WORLD TOTAL	**53,851.2**	**55,721.0**	**55,733.2**	**56,156.7**	**423.5**	**1.0**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

Worldwide gas production

(billion cu ft)

	Aug.	July	1974 cum.
WESTERN HEMISPHERE			
Argentina	24.0	24.0	171.7
Bolivia	11.6	11.9	100.5
Brazil	4.0	4.7	31.2
Canada	268.3	260.2	2,145.7
Chile	11.9	19.1	131.9
Colombia	4.6	10.8	66.4
Ecuador	0.8	0.7	3.6
Mexico	59.0	55.0	447.9
Peru	6.4	6.1	47.8
Trinidad	4.7	5.2	42.8
United States	1,824.7	1,822.7	14,656.6
Venezuela	41.0	41.0	784.1
Total	**2,261.0**	**2,261.4**	**18,630.2**
WESTERN EUROPE			
Austria	5.3	5.4	66.9
Denmark	0	0	0
France	28.3	24.2	193.9
West Germany	59.7	58.9	463.8
Italy	58.2	55.1	411.2
Netherlands	135.3	203.2	1,927.9
Norway	0	0	0
Spain	0	0	0
United Kingdom	137.9	93.0	914.7
Yugoslavia	4.2	4.7	36.2
Total	**428.9**	**444.5**	**4,014.6**
MIDDLE EAST			
Abu Dhabi	0	0	0
Bahrain	0.3	0.5	2.8
Dubai	0	0	0
Iran	151.3	159.2	1,183.1
Iraq	10.0	10.1	86.4
Israel	0.2	0.1	3.5
Kuwait	0.2	0.1	1.1
Oman	0	0	0
Qatar	0.1	0.1	1.3
Saudi Arabia	0	0	0
Sharjah†	0	0	0
Syria	0	0	0
Turkey	0	0	0
Total	**162.1**	**170.1**	**1,278.2**
ASIA-PACIFIC			
Afghanistan	7.8	7.8	61.8
Australia	15.9	15.0	102.1
Burma	0.5	0.5	3.9
Brunei-Malaysia	0.3	0.3	1.0
India	0.2	0.3	13.6
Indonesia	1.7	1.8	100.1
Japan	8.5	16.1	66.1
Pakistan	11.1	9.1	90.6
Taiwan	4.1	4.0	29.5
Thailand	0	0	0
Total	**50.1**	**65.4**	**468.7**
AFRICA			
Algeria	0.9	1.7	13.8
Angola	2.8	3.0	20.8
Cabinda	0	0	0
Congo	0.6	0.4	3.6
Egypt	5.7	5.1	30.2
Gabon	1.3	1.2	9.4
Libya	4.3	4.2	27.0
Morocco	6.6	1.8	20.3
Nigeria	4.6	5.2	38.4
Tunisia	0.2	0.4	4.8
Total	**27.0**	**23.0**	**168.3**
COMMUNIST			
China	16.8	17.1	125.5
Rumania	77.1	78.2	602.4
U.S.S.R.‡	758.9	724.6	5,965.7
Other	26.9	38.0	333.6
Total	**879.7**	**857.9**	**7,027.2**
WORLD TOTAL	**3,808.8**	**3,822.3**	**31,587.2**

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 10-22-74	Pump price 10-22-74	Pump price 10-23-73
Albany	42.9	54.9	41.6
Albuquerque	43.9	54.9	37.9
Amarillo	40.1	49.1	33.9
—Atlanta	42.1	53.6	39.0
—Baltimore	39.6	52.6	40.6
Birmingham	39.9	51.9	39.6
—Boston*	42.1	53.6	39.9
Buffalo	42.9	54.9	41.6
Charlotte	39.9	52.9	40.6
Cheyenne	44.9	55.9	41.6
—Chicago*	41.6	54.6	42.1
Cleveland	40.9	51.9	39.6
Corpus Christi	40.6	49.6	33.9
Dallas	40.6	49.6	33.9
Denver	44.9	55.9	40.6
Des Moines	41.0	52.0	37.9
Detroit	39.5	52.5	41.6
Fort Worth	40.6	49.6	33.9
Houston	40.6	49.6	33.9
Indianapolis	41.9	53.9	41.6
Jacksonville	39.9	51.9	39.6
Kansas City	43.9	54.9	39.6
Little Rock	39.5	51.0	36.9
Louisville	42.9	53.9	41.6
Los Angeles	39.8	50.8	38.9
Memphis	41.0	52.0	37.9
—Miami	41.6	53.6	39.0
Milwaukee	41.9	52.9	40.6
Minn.-St. Paul	42.0	53.0	38.9
—Newark	43.6	54.6	40.9
New Orleans	38.9	50.9	38.6
New York*	44.6	57.6	44.6
—Norfolk	39.6	52.6	38.9
Okla. City	43.3	53.9	36.9
Omaha	41.4	53.9	41.6
Philadelphia	39.9	52.9	39.6
Phoenix	42.8	53.8	39.9
Pittsburgh	39.9	52.9	39.6
Portland, Ore.	41.8	52.8	39.9
Salt Lake City	42.9	53.9	38.6
San Antonio	40.1	49.1	33.9
San Diego	40.4	51.4	38.9
San Francisco	41.0	52.0	39.9
Seattle	40.4	53.4	39.9
Spokane	40.4	53.4	40.9
Springfield, Ill.*	42.0	55.0	40.9
St. Louis	42.0	53.0	40.6
—Tampa	41.6	53.6	39.0
Texarkana	40.1	49.1	33.9
Tulsa	40.4	51.0	36.9
Wichita	40.9	51.9	39.6
Wichita Falls	40.1	49.1	33.9
Week's avg.	**41.37**	**52.68**	**38.90**
Sept. avg.	**43.32**	**54.63**	**37.84**
Aug. avg.	**43.36**	**54.67**	**37.99**
1974 to date	**40.20**	**51.48**	
1973 to date	**26.96**	**38.46**	

+ Increase, — decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday each week. They may differ from refiners' prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
Regular (92 octane) 26.75-30.00
Premium (99 octane) 28.75-32.00

California (rack) Los Angeles:
—Regular (91 octane) 25.00-31.50
—Regular (95 octane) 26.10-32.50
—Premium (100 octane) 27.40-33.50

Chicago:
Regular (94 octane) 28.00-33.00
Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
+Distillate No. 1 ..... 27.50-33.50
+Distillate No. 2 ..... 26.50-32.00

Gulf Coast (cargoes):
Kerosine (42-43) 27.50-29.00
Distillate No. 2 ..... 26.50-28.00

Mid-Continent (Group 3):
Kerosine (42-44) 27.25-29.25
Diesel oil (58 d.i. & above) 27.00-30.00
Distillate No. 1 ..... 26.50-29.50
Distillate No. 2 ..... 25.50-27.50

New York Harbor (barges):
Kerosine (42-44) 28.05-33.75
Distillate No. 2 ..... 27.50-29.25
Diesel fuel (48-52 di.) 27.80

Residual fuel

Mid-Continent (Group 3):
No. 6 (max 1% S) $10.30
No. 6 (over 1% S) ..... $ 9.30

Chicago:
No. 6 (max. 1% S) $13.86
No. 5 (max. 1% S) $14.70

New York Harbor (barges):
No. 6 (max. 0.3% S) $13.03-14.13
+No. 5 (0.3% S) $13.41-14.38

API reports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	10-18 1974	10-11 1974	10-19 1973	10-18 1974	10-11 1974	10-19 1973	10-18 1974	10-11 1974	10-19 1973
Gasoline	259	225	153	10	10	....	269	235	153
Special Naphthas	....	....	....	....	....	....	....	....	....
Kerosine	5	5	....	....	....	....	5	5	....
Distillate	218	282	341	10	10	21	228	292	362
No. 4 Fuel Oil	40	53	63	....	....	....	40	53	63
Residual	1,663	1,511	1,687	50	50	41	1,713	1,561	1,728
Jet Fuel (Naphtha)	....	....	1	2	2	5	2	2	6
Jet Fuel (Kerosine)	98	160	125	58	56	56	156	216	181
Asphalt	21	19	40	....	....	....	21	19	40
LP-Gas	111	106	69	18	14	12	129	120	81
Petrochem Feedstocks	32	20	1	....	....	....	32	20	1
Unfinished	115	84	71	10	10	39	125	94	110
Plant Condensate	89	72	75	5	5	8	94	77	83
Total Prod.	**2,651**	**2,537**	**2,626**	**163**	**157**	**182**	**2,814**	**2,694**	**2,808**
Canadian Crude	541	459	698	242	101	55	783	551	763
Other Foreign	2,275	2,546	2,178	567	568	981	2,842	3,114	3,149
Total Crude	**2,816**	**2,996**	**2,876**	**809**	**669**	**1,036**	**3,625**	**3,665**	**3,912**
Total Imports	**5,467**	**5,533**	**5,502**	**972**	**826**	**1,218**	**6,439**	**6,359**	**6,720**

Worldwide crude production

(Daily average in thousands of bbl)

	July 1974	June* 1974	7-month average Daily prod. 1973	7-month average Daily prod. 1974	Change from Vol.	Change from %
WESTERN HEMISPHERE						
Argentina	405.0	406.0	419.0	412.0	− 7.0	− 1.7
Bolivia	50.0	50.0	48.0	49.0	1.0	2.1
Brazil	170.0	170.0	169.0	171.0	2.0	1.2
Canada	1,676.0	1,682.0	1,789.0	1,770.0	− 19.0	− 1.1
Chile	30.0	30.0	32.0	30.0	− 2.0	− 6.3
Colombia	175.0	175.0	199.0	175.0	− 24.0	−12.1
Ecuador	200.0	230.0	201.0	228.0	27.0	13.4
Mexico	600.0	575.0	457.0	568.0	111.0	24.3
Peru	75.0	75.0	67.0	76.0	9.0	13.4
Trinidad	170.0	170.0	164.0	172.0	8.0	4.9
United States	8,955.0	8,940.0	9,236.0	8,969.0	−267.0	− 2.9
Venezuela	2,940.0	2,944.0	3,360.0	3,086.0	−274.0	− 8.2
Total	**15,446.0**	**15,447.0**	**16,141.0**	**15,706.0**	**−435.0**	**− 2.7**
WESTERN EUROPE						
Austria	45.0	45.0	49.0	47.0	− 2.0	− 4.1
Denmark	4.0	4.0	4.0	4.0		
France	25.0	25.0	27.0	24.0	− 3.0	−11.1
West Germany	123.0	122.0	131.0	124.0	− 7.0	− 5.3
Italy	20.0	20.0	15.0	20.0	5.0	33.3
Netherlands	30.0	30.0	29.0	30.0	1.0	3.4
Norway	47.0	38.0	36.0	24.0	− 12.0	−33.3
Spain	44.0	44.0	12.0	42.0	30.0	250.0
United Kingdom	2.0	2.0	2.0	2.0	....	....
Yugoslavia	65.0	65.0	67.0	68.0	1.0	1.5
Total	**405.0**	**395.0**	**372.0**	**385.0**	**13.0**	**3.5**
MIDDLE EAST						
Abu Dhabi	1,641.0	1,581.0	1,339.0	1,495.0	156.0	11.7
Bahrain	67.0	67.0	68.0	68.0		
Dubai	295.0	243.0	225.0	241.0	16.0	7.1
Iran	6,064.0	6,063.0	5,826.0	6,125.0	299.0	5.1
Iraq	1,635.0	1,584.0	1,903.0	1,784.0	−119.0	− 6.3
Israel	100.0	100.0	100.0	100.0		
Kuwait	2,286.0	2,869.0	3,075.0	2,764.0	−311.0	−10.1
Oman	288.0	296.0	287.0	296.0	9.0	3.1
Qatar	518.0	520.0	591.0	518.0	− 73.0	−12.4
Saudi Arabia	8,778.0	8,870.0	7,650.0	8,401.0	751.0	9.8
Sharjah†	50.0	.....	.....	.....	....	....
Syria	150.0	150.0	150.0	150.0		
Turkey	65.0	65.0	64.0	66.0	2.0	3.1
Total	**21,937.0**	**22,408.0**	**21,278.0**	**22,008.0**	**730.0**	**3.4**
ASIA-PACIFIC						
Afghanistan	.....	.....	.....	.....	....	....
Australia	313.0	325.0	364.0	358.0	− 6.0	− 1.6
Burma	20.0	20.0	20.0	20.0		
Brunei-Malaysia	375.0	375.0	311.0	364.0	53.0	17.0
India	150.0	150.0	148.0	149.0	1.0	0.7
Indonesia	1,469.0	1,488.0	1,285.0	1,478.0	193.0	15.0
Japan	15.0	15.0	15.0	15.0	....	....
Pakistan	8.5	8.5	8.5	8.5	....	....
Taiwan	2.0	2.0	2.0	2.0	....	....
Thailand	0.2	0.2	0.2	0.2	....	....
Total	**2,352.7**	**2,383.7**	**2,153.7**	**2,394.7**	**241.0**	**11.2**
AFRICA						
Algeria	900.0	950.0	1,110.0	1,044.0	− 66.0	− 5.9
Angola	20.0	20.0	14.0	20.0	6.0	42.9
Cabinda	145.0	145.0	133.0	148.0	15.0	11.3
Congo	37.0	37.0	37.0	36.0	− 1.0	− 2.7
Egypt	160.0	160.0	205.0	107.0	− 98.0	−47.8
Gabon	160.0	160.0	138.0	162.0	24.0	17.4
Libya	1,583.0	1,775.0	2,277.0	1,842.0	−435.0	−19.1
Morocco	1.0	1.0	1.0	1.0		
Nigeria	2,196.0	2,336.0	1,958.0	2,283.0	325.0	16.6
Tunisia	65.0	65.0	84.0	66.0	− 18.0	−21.4
Total	**5,267.0**	**5,649.0**	**5,957.0**	**5,709.0**	**−248.0**	**− 4.2**
COMMUNIST						
China	900.0	900.0	860.0	900.0	40.0	4.7
Rumania	290.0	290.0	283.0	290.0	7.0	2.5
U.S.S.R.‡	9,207.0	9,198.0	8,385.0	9,056.0	671.0	8.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,507.0**	**10,498.0**	**9,628.0**	**10,356.0**	**728.0**	**7.6**
WORLD TOTAL	**55,914.7**	**56,760.7**	**55,529.7**	**56,558.7**	**1,029.0**	**1.9**

*Figures adjusted. †On stream July 1974. ‡Includes gas liquids.

Worldwide gas production

(billion cu ft)

	July*	June	1972 cum.
Argentina	24.0	21.5	147.7
Bolivia	11.9	12.0	88.9
Brazil	4.7	3.9	27.2
Canada	260.2	259.7	1,877.4
Chile	19.1	20.1	120.0
Colombia	10.8	11.9	61.8
Ecuador	0.7	0.5	2.8
Mexico	55.0	53.9	388.9
Peru	6.1	4.9	41.4
Trinidad	5.2	4.8	38.1
United States	1,897.7	1,710.2	12,987.1
Venezuela	41.0	35.0	743.1
Total	**2,336.4**	**2,138.4**	**16,524.4**
WESTERN EUROPE			
Austria	5.4	8.9	61.6
Denmark	....	....	....
France	24.2	22.1	165.6
West Germany	58.9	49.9	404.1
Italy	55.1	49.9	353.0
Netherlands	203.2	264.6	1,792.6
Norway	....	....	....
Spain	....	....	....
United Kingdom	93.0	98.5	776.8
Yugoslavia	4.7	4.7	32.0
Total	**444.5**	**498.5**	**3,585.7**
MIDDLE EAST			
Abu Dhabi	....	....	....
Bahrain	0.5	0.4	2.5
Dubai	....	....	....
Iran	159.2	149.6	1,031.8
Iraq	10.1	11.1	76.4
Israel	0.1	0.2	3.3
Kuwait	0.1	0.1	0.9
Oman	....	....	....
Qatar	0.1	0.2	1.2
Saudi Arabia	....	....	....
Sharjah†	....	....	....
Syria	....	....	....
Turkey	....	....	....
Total	**170.1**	**161.6**	**1,116.1**
ASIA-PACIFIC			
Afghanistan	....	....	....
Australia	7.8	7.9	54.0
Burma	15.0	14.8	86.2
Brunei-Malaysia	0.5	0.4	3.4
India	0.3	0.2	0.7
Indonesia	1.8	2.1	13.4
Japan	16.1	14.0	98.4
Pakistan	9.1	8.6	57.6
Taiwan	10.8	11.1	79.5
Thailand	4.0	3.2	25.4
Total	**65.4**	**62.3**	**418.6**
AFRICA			
Algeria	1.7	1.9	12.9
Angola	3.0	2.8	18.0
Cabinda	....	....	....
Congo	0.4	0.6	3.0
Egypt	5.1	4.5	24.5
Gabon	1.2	1.3	8.1
Libya	4.2	4.9	22.7
Morocco	1.8	2.0	13.7
Nigeria	5.2	4.7	33.8
Tunisia	0.4	0.5	4.6
Total	**23.0**	**23.2**	**141.3**
COMMUNIST			
China	17.1	16.0	108.7
Rumania	78.2	77.1	525.3
U.S.S.R.‡	724.6	723.7	5,207.7
Other	38.0	31.9	306.7
Total	**857.9**	**848.7**	**6,148.4**
WORLD TOTAL	**3,897.3**	**3,732.8**	**27,934.5**

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 9-17-74	Pump price 9-17-74	Pump price 9-18-73
Albany	45.9	57.9	39.9
Albuquerque	46.9	57.9	37.9
Amarillo	41.1	50.1	33.9
Atlanta	42.2	55.7	38.9
Baltimore	42.9	55.9	38.9
Birmingham	42.9	54.9	37.9
Boston*	44.2	55.7	38.9
Buffalo	45.9	57.9	39.9
Charlotte	42.9	55.9	38.9
Cheyenne	47.9	58.9	39.9
Chicago*	45.6	58.6	40.4
Cleveland	43.9	54.9	37.9
Corpus Christi	41.6	50.6	33.9
Dallas	41.6	50.6	33.9
Denver	47.9	58.9	38.9
+Des Moines	41.0	52.0	37.9
Detroit	42.5	55.5	39.9
Fort Worth	41.6	50.6	33.9
Houston	41.6	50.6	33.9
Indianapolis	44.9	56.9	39.9
Jacksonville	42.9	54.9	37.9
Kansas City	46.9	57.9	37.9
+Little Rock	39.5	51.0	36.9
Louisville	45.9	56.9	37.9
Los Angeles	41.1	52.1	37.9
+Memphis	41.0	52.0	37.9
Miami	43.7	55.7	38.9
Milwaukee	44.9	55.9	38.9
+Minn.-St. Paul	42.0	53.0	38.9
Newark	45.7	56.7	39.9
New Orleans	41.9	53.9	36.9
New York*	46.9	59.9	41.9
Norfolk	41.7	54.7	37.9
Okla. City	46.3	56.9	36.9
Omaha	44.4	56.9	39.9
Philadelphia	42.9	55.9	37.9
Phoenix	43.7	54.7	38.9
Pittsburgh	42.9	55.9	37.9
Portland, Ore.	43.2	54.2	38.9
Salt Lake City	45.9	56.9	36.9
San Antonio	41.1	50.1	33.9
San Diego	41.7	52.7	38.9
San Francisco	42.3	53.3	38.9
Seattle	41.7	54.7	39.9
Spokane	41.7	54.7	39.9
+Springfield, Ill.*	42.0	55.0	40.9
St. Louis	44.9	55.9	38.9
Tampa	43.7	55.7	38.9
Texarkana	41.1	50.1	33.9
+Tulsa	40.4	51.0	36.9
Wichita	43.9	54.9	37.9
Wichita Falls	41.1	50.1	33.9
Week's avg.	**43.38**	**54.70**	**37.99**
Aug. avg.	**43.36**	**54.67**	**37.99**
July avg.	**43.24**	**54.51**	**38.00**
1974 to date	**39.93**	**51.21**	
1973 to date	**26.95**	**38.52**	

+ Increase, − decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday each week. They may differ from refiners' prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
Regular (92 octane) 28.00-32.00
Premium (99 octane) 30.00-34.00

California (rack) Los Angeles:
Regular (91 octane) 25.00-33.55
Regular (95 octane) 26.10-34.65
Premium (100 octane) 27.40-35.65

Chicago:
Regular (94 octane) 28.00-33.00
Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
Distillate No. 1 ..... 27.50-34.00
Distillate No. 2 ..... 26.50-33.00

Gulf Coast (cargoes):
Kerosine (42-43) 27.50-29.00
Distillate No. 2 ..... 26.50-28.00

Mid-Continent (Group 3):
Kerosine (42-44) 24.50-28.75
Diesel oil (58 d.i. & above) 27.00-30.00
Distillate No. 1 ..... 24.50-29.50
Distillate No. 2 ..... 23.00-27.50

New York Harbor (barges):
Kerosine (42-44) 29.50-33.75
Distillate No. 2 ..... 26.25-29.20
Diesel fuel (48-52 d.i) 26.80

Residual fuel

Mid-Continent (Group 3):
No. 6 (max 1% S) $10.30
No. 6 (over 1% S) ..... $ 9.30

Chicago:
+No. 6 (max. 1% S) $13.86
+No. 5 (max. 1% S) $14.70

New York Harbor (barges):
No. 6 (max. 0.3% S) $13.39-14.13
No. 5 (0.3% S) $13.57-14.34

California (marine pipeline):
−Bunker C Los Angeles $4.76

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	9-13 1974	9-6 1974	9-14 1973	9-13 1974	9-6 1974	9-14 1973	9-13 1974	9-6 1974	9-14 1973
Gasoline	278	139	150	5	23	...	283	162	150
Special Naphthas	5	5	...	...	...	...	5	5	...
Kerosine	4	3	...	...	...	...	4	3	...
Distillate	143	76	160	5	12	...	148	88	160
No. 4 Fuel Oil	20	36	31	...	...	...	20	36	31
Residual	1,742	1,895	1,643	50	50	17	1,792	1,945	1,660
Jet Fuel (Naphtha)	...	...	5	5	5	5	5	5	10
Jet Fuel (Kerosine)	95	112	116	56	53	42	151	165	158
Asphalt	74	67	30	...	...	...	74	67	30
LP-Gas	106	105	85	13	16	12	119	121	97
Petrochem Feedstocks	31	14	39	...	...	...	31	14	39
Unfinished	91	110	113	33	25	10	124	135	123
Plant Condensate	112	68	109	5	5	8	117	73	117
Total Prod.	**2,701**	**2,630**	**2,481**	**172**	**189**	**94**	**2,873**	**2,819**	**2,575**
Canadian Crude	478	400	711	216	233	242	694	633	953
Other Foreign	2,077	2,573	2,062	626	659	600	2,703	3,232	2,662
Total Crude	**2,555**	**2,973**	**2,773**	**842**	**892**	**842**	**3,397**	**3,865**	**3,615**
Total Imports	**5,256**	**5,603**	**5,254**	**1,014**	**1,081**	**936**	**6,270**	**6,684**	**6,190**

Worldwide crude production

(Daily average in thousands of bbl)

	June 1974	May* 1974	6-month average Daily prod. 1973	6-month average Daily prod. 1974	Change from Vol.	Change from %
WESTERN HEMISPHERE						
Argentina	420.0	420.0	421.0	419.0	− 2.0	− 0.5
Bolivia	50.0	50.0	48.0	50.0	2.0	4.2
Brazil	170.0	170.0	169.0	170.0	1.0	0.6
Canada	1,836.0	1,732.0	1,786.0	1,840.0	54.0	3.0
Chile	30.0	30.0	33.0	30.0	− 3.0	− 9.1
Colombia	175.0	175.0	199.0	175.0	− 24.0	−12.1
Ecuador	230.0	227.0	199.0	233.0	34.0	17.1
Mexico	530.0	530.0	455.0	525.0	70.0	15.4
Peru	75.0	75.0	67.0	76.0	9.0	13.4
Trinidad	170.0	170.0	164.0	173.0	9.0	5.5
United States	8,940.0	8,939.0	9,243.0	8,973.0	−270.0	− 2.9
Venezuela	2,944.0	2,930.0	3,351.0	3,102.0	−249.0	− 7.4
Total	**15,570.0**	**15,448.0**	**16,135.0**	**15,766.0**	**−369.0**	**− 2.3**
WESTERN EUROPE						
Austria	50.0	50.0	50.0	50.0	....	....
Denmark	4.0	4.0	4.0	4.0	....	....
France	25.0	25.0	27.0	24.0	− 3.0	−11.1
West Germany	124.0	123.0	131.0	125.0	− 6.0	− 4.6
Italy	15.0	15.0	14.0	15.0	1.0	7.1
Netherlands	30.0	30.0	30.0	30.0	....	....
Norway	38.0	30.0	36.0	20.0	− 16.0	−44.4
Spain	44.0	44.0	11.0	37.0	26.0	236.4
United Kingdom	2.0	2.0	2.0	2.0	....	....
Yugoslavia	65.0	65.0	66.0	66.0	....	....
Total	**397.0**	**388.0**	**371.0**	**373.0**	**2.0**	**0.5**
MIDDLE EAST						
Abu Dhabi	1,581.0	1,632.0	1,338.0	1,470.0	132.0	9.9
Bahrain	67.0	66.0	68.0	68.0	....	....
Dubai	230.0	227.0	222.0	229.0	7.0	3.2
Iran	6,063.0	6,182.0	5,818.0	6,136.0	318.0	5.5
Iraq	1,584.0	1,592.0	1,871.0	1,810.0	− 61.0	− 3.3
Israel	100.0	100.0	100.0	100.0	....	....
Kuwait	2,869.0	2,845.0	3,031.0	2,846.0	−185.0	− 6.1
Oman	300.0	303.0	285.0	298.0	13.0	4.6
Qatar	518.0	519.0	589.0	518.0	− 71.0	−12.1
Saudi Arabia	8,870.0	9,017.0	7,464.0	8,336.0	872.0	11.7
Syria	150.0	150.0	121.0	142.0	21.0	17.4
Turkey	65.0	65.0	63.0	65.0	2.0	3.2
Total	**22,397.0**	**22,698.0**	**20,970.0**	**22,018.0**	**1,048.0**	**5.0**
ASIA-PACIFIC						
Australia	325.0	361.0	359.0	366.0	7.0	1.9
Burma	20.0	20.0	20.0	21.0	1.0	5.0
Brunei-Malaysia	375.0	375.0	309.0	363.0	54.0	17.5
India	150.0	150.0	148.0	150.0	2.0	1.4
Indonesia	1,522.0	1,530.0	1,271.0	1,485.0	214.0	16.8
Japan	15.0	15.0	15.0	15.0	....	....
Pakistan	8.0	8.0	8.0	8.0	....	....
Taiwan	2.0	2.0	2.0	2.0	....	....
Thailand	0.2	0.2	0.2	0.2	....	....
Total	**2,417.2**	**2,461.2**	**2,132.2**	**2,410.2**	**278.0**	**13.0**
AFRICA						
Algeria	950.0	1,000.0	1,110.0	1,039.0	− 71.0	− 6.4
Angola	20.0	20.0	13.0	20.0	7.0	53.8
Cabinda	145.0	145.0	132.0	148.0	16.0	12.1
Congo	37.0	37.0	38.0	36.0	− 2.0	− 5.3
Egypt	160.0	150.0	200.0	97.0	−103.0	−51.5
Gabon	160.0	160.0	135.0	162.0	27.0	20.0
Libya	1,775.0	1,950.0	2,292.0	1,887.0	−405.0	−17.7
Morocco	1.0	1.0	1.0	1.0	....	....
Nigeria	2,335.0	2,250.0	1,953.0	2,271.0	318.0	16.2
Tunisia	65.0	65.0	84.0	66.0	− 18.0	−21.4
Total	**5,648.0**	**5,778.0**	**5,958.0**	**5,727.0**	**−231.0**	**3.9**
COMMUNIST						
China	900.0	900.0	860.0	900.0	40.0	4.7
Rumania	280.0	280.0	275.0	280.0	5.0	1.8
U.S.S.R.	9,198.0	9,137.0	8,368.0	9,034.0	666.0	8.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,488.0**	**10,427.0**	**9,603.0**	**10,324.0**	**721.0**	**7.5**
WORLD TOTAL	**56,917.2**	**57,200.2**	**55,169.2**	**56,618.2**	**14,490.0**	**2.6**

*Figures adjusted. †Includes gas liquids.

Worldwide gas production

(Billion cu ft)

	June	May	1974 cum.
	21.5	21.0	123.7
	12.0	11.9	77.0
	3.9	3.6	22.5
	259.7	261.1	1,617.2
	20.1	23.2	100.9
	11.9	10.2	51.0
	0.5	0.4	2.1
	53.9	55.8	333.9
	4.9	3.8	35.3
	4.8	2.4	32.9
	1,710.2	1,711.4	11,089.4
	35.0	44.9	702.1
	2,138.4	**2,149.7**	**14,188.0**
	8.9	9.4	56.2
	....	....	....
	22.1	24.2	141.4
	49.9	65.8	345.2
	49.9	50.0	297.9
	264.6	305.5	1,589.4
	....	....	....
	....	....	....
	98.5	117.4	683.8
	4.7	3.7	27.3
	498.6	**576.0**	**3,141.2**
	....	....	....
	0.4	0.5	2.0
	....	....	....
	149.6	153.5	872.6
	11.1	11.1	66.3
	0.2	0.1	3.2
	0.1	0.2	0.8
	....	....	....
	0.2	0.3	1.1
	....	....	....
	....	....	....
	....	....	....
	161.6	**154.6**	**946.0**
	7.9	7.8	46.2
	14.8	11.4	71.2
	0.4	0.6	2.9
	0.2	0.2	0.4
	2.1	1.6	11.6
	14.0	15.5	82.3
	8.6	6.2	48.5
	11.1	14.0	68.7
	3.2	3.1	21.4
	62.3	**60.4**	**353.2**
	1.9	1.7	11.2
	2.8	2.9	15.0
	....	....	....
	0.6	0.4	2.6
	4.5	4.1	19.4
	1.3	1.2	6.9
	4.9	4.7	18.5
	2.0	2.5	11.9
	4.7	6.2	28.6
	0.5	0.6	4.2
	23.2	**24.3**	**118.3**
	16.0	15.9	91.6
	77.1	68.2	447.1
	723.7	741.3	4,483.1
	31.9	31.9	268.7
	848.7	**857.3**	**5,290.5**
	3,732.8	**3,822.3**	**24,037.2**

*Figures Adjusted.

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REACTORS

6—138" x 16'9", 770 PSIG, 650° F., internally insulated. Excellent condition. Available shipment Michigan location. More detailed info available.

HEAT EXCHANGERS

E-31 Heat Exchanger, 770 psig @ 650° F., 23,800 sq. ft. surface, 1 pass both sides, 2191-¾" tubes x 0.075" M.W. thickness x 56 ft. long.

E-1 Heat Exchanger, 770 psig @ 650° F., 3000 sq. ft. surface, U Tube, 2 pass both sides, 680-¾" tubes x 14 Ga. x 14' long.

E-3 Heat Exchanger, shell 770 psig @ 750° F., 2 pass, Tubes 770 psig @ 650° F., 2 pass, 1240 low fin ¾" tubes x 14 ga. x 16' long, 19,500 sq. ft. extended surface or equivalent to 9,000 sq. ft. of smooth tube. More detailed info. available. Delivery Michigan location.

AIR COOLERS

E-2 Air Cooler, 770 PSIG design, 6 sections, 3 pass, 3 fans 30 HP each, 3 bays, 5700 sq. ft. bare surface, 110,166 sq. ft. extended surface.

E-4 Air Cooler, 770 PSIG design, 2 sections, 2 pass, 1 fan 40 HP, 1 bay, 2098 sq. ft. bare surface, 40,536 sq. ft. extended surface.

E-8 Air Cooler consisting of: depropanizer reflux condenser, debutanizer reflux condenser and propane product cooler, one structure, 2 fans 2 speed 20 HP each. More info. available. All excellent condition. Available shipment Michigan location.

All above items used, good condition. Available delivery Michigan location. More detailed INFO available.

Mid-States Equipment Company
Box 2534 • (918) 582-9128
Tulsa, Oklahoma 74101

FOR SALE — TESTED LINE PIPE, P.E.

76,212'	4½" O.D.	.188 wall, Grade B	$281.00/cft
188,840'	4½" O.D.	.203 wall, Grade B	$303.00/cft
303,000'	4½" O.D.	.237 wall, Grade B	$398.00/cft
61,223'	6⅝" O.D.	.156 wall, Grade B	$350.00/cft
136,222'	6⅝" O.D.	.188 wall, Grade B	$420.00/cft
63,218'	6⅝" O.D.	.203 wall, Grade B	$452.00/cft
46,775'	8⅝" O.D.	.156 wall, Grade B	$459.00/cft
104,141'	8⅝" O.D.	.188 wall, Grade B	$550.00/cft
36,143'	8⅝" O.D.	.203 wall, Grade B	$593.00/cft
3,000'	24" O.D.	.250 wall, 63.41#/ft	$2,335.00/cft
3,000'	24" O.D.	.312 wall, 79.06#/ft	$2,911.00/cft
4,000'	24" O.D.	.375 wall, 94.62#/ft	$3,465.00/cft
1,500'	24" O.D.	.500 wall, 125.49#/ft	$4,595.00/cft
1,000'	30" O.D.	.312 wall, 98.93#/ft	$3,700.00/cft
2,000'	30" O.D.	.375 wall, 118.65#/ft	$4,420.00/cft
750'	30" O.D.	.500 wall, 157.53#/ft	$5,868.00/cft
1,000'	36" O.D.	.312 wall, 118.92#/ft	$4,551.00/cft
2,000'	36" O.D.	.375 wall, 142.68#/ft	$5,440.00/cft
520'	36" O.D.	.500 wall, 189.57#/ft	$7,228.00/cft

F.O.B. Docks, Houston, Texas and Los Angeles, Calif.
40 ton minimum lots. • Subject to prior sale.
Due to arrive approximately 90 days.

KELLY PIPE COMPANY
11700 Bloomfield Ave., Santa Fe Springs (Los Angeles), Calif. 90670
Phone: 213 - 771-5311 Telex: 65-7363

Ask for Byron Glass or Earle Cohen.
Complete stocks — pipe, valves and fittings.

Worldwide crude production

(Daily average in thousands of bbl)

	May 1974	April* 1974	5-month average Daily prod. 1973	5-month average Daily prod. 1974	Change from Vol.	Change from %
WESTERN HEMISPHERE						
Argentina	420.0	420.0	423.0	420.0	− 3.0	− 0.7
Bolivia	50.0	50.0	49.0	50.0	1.0	2.0
Brazil	170.0	170.0	169.0	170.0	1.0	0.6
Canada	1,732.0	1,810.0	1,802.0	1,822.0	20.0	1.1
Chile	30.0	30.0	33.0	30.0	− 3.0	− 9.1
Colombia	175.0	175.0	199.0	176.0	− 23.0	− 11.6
Ecuador	227.0	245.0	200.0	233.0	33.0	16.5
Mexico	530.0	530.0	454.0	524.0	70.0	15.4
Peru	75.0	75.0	67.0	75.0	8.0	11.9
Trinidad	170.0	170.0	164.0	172.0	8.0	4.9
United States	8,939.0	8,965.0	9,250.0	8,995.0	−255.0	− 2.8
Venezuela	2,930.0	3,044.0	3,337.0	3,133.0	−204.0	− 6.1
Total	**15,448.0**	**15,684.0**	**16,147.0**	**15,800.0**	**−347.0**	**− 2.5**
WESTERN EUROPE						
Austria	50.0	50.0	50.0	50.0	.....	.....
Denmark	0.0	2.0	4.0	4.0	.....	.....
France	25.0	25.0	27.0	24.0	− 3.0	− 11.1
West Germany	123.0	123.0	131.0	125.0	− 6.0	− 4.6
Italy	15.0	15.0	15.0	15.0	.....	.....
Netherlands	30.0	30.0	30.0	30.0	.....	.....
Norway	27.0	13.0	35.0	17.0	− 18.0	− 51.4
Spain	40.0	40.0	9.0	37.0	28.0	311.1
United Kingdom	2.0	2.0	2.0	2.0	.....	.....
Yugoslavia	65.0	65.0	66.0	66.0	.....	.....
Total	**377.0**	**365.0**	**369.0**	**370.0**	**1.0**	**0.3**
MIDDLE EAST						
Abu Dhabi	1,632.0	1,616.0	1,344.0	1,448.0	104.0	7.7
Bahrain	66.0	67.0	68.0	68.0	.....	.....
Dubai	227.0	241.0	224.0	229.0	5.0	2.2
Iran	6,182.0	6,175.0	5,822.0	6,150.0	328.0	5.6
Iraq	1,592.0	1,882.0	1,853.0	1,855.0	2.0	0.1
Israel	100.0	100.0	100.0	100.0	.....	.....
Kuwait	2,845.0	2,836.0	3,072.0	2,842.0	−230.0	− 7.5
Oman	303.0	296.0	284.0	297.0	13.5	4.6
Qatar	519.0	519.0	595.0	518.0	− 77.0	− 12.9
Saudi Arabia	9,017.0	8,653.0	7,453.0	8,230.0	777.0	10.4
Syria	150.0	150.0	120.0	141.0	21.0	17.5
Turkey	65.0	65.0	62.0	65.0	3.0	4.8
Total	**22,698.0**	**22,600.0**	**20,997.0**	**21,943.0**	**946.0**	**4.5**
ASIA-PACIFIC						
Afghanistan	.....	.....	.....	.....	.....	.....
Australia	361.0	351.0	354.0	374.0	20.0	5.6
Burma	20.0	20.0	20.0	21.0	1.0	5.0
Brunei-Malaysia	375.0	375.0	307.0	360.0	53.0	17.3
India	150.0	150.0	148.0	150.0	2.0	1.4
Indonesia	1,530.0	1,500.0	1,254.0	1,477.0	223.0	17.8
Japan	15.0	15.0	15.0	15.0	.....	.....
Pakistan	9.0	9.0	9.0	9.0	.....	.....
Taiwan	2.0	2.0	2.0	2.0	.....	.....
Thailand	0.2	0.2	0.2	0.2	.....	.....
Total	**2,462.2**	**2,422.2**	**2,109.2**	**2,408.2**	**299.0**	**14.2**
AFRICA						
Algeria	1,000.0	1,000.0	1,109.0	1,056.0	− 53.0	− 4.8
Angola	20.0	20.0	13.0	20.0	7.0	53.8
Cabinda	145.0	150.0	132.0	149.0	17.0	12.9
Congo	37.0	34.0	36.0	35.0	− 1.0	− 2.8
Egypt	130.0	100.0	205.0	81.0	−124.0	− 60.5
Gabon	160.0	176.0	133.0	162.0	29.0	21.8
Libya	1,950.0	1,734.0	2,293.0	1,909.0	−384.0	− 16.7
Morocco	1.0	1.0	1.0	1.0	.....	.....
Nigeria	2,250.0	2,275.0	1,943.0	2,251.0	308.0	15.9
Tunisia	65.0	65.0	84.0	67.0	− 17.0	− 20.2
Total	**5,758.0**	**5,555.0**	**5,949.0**	**5,731.0**	**−218.0**	**− 3.6**
COMMUNIST						
China	860.0	860.0	650.0	860.0	210.0	32.3
Rumania	280.0	280.0	275.0	280.0	5.0	1.8
U.S.S.R.†	9,137.0	9,028.0	8,327.0	8,992.0	665.0	8.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,387.0**	**10,198.0**	**9,352.0**	**10,242.0**	**890.0**	**9.5**
WORLD TOTAL	**57,130.2**	**56,824.2**	**54,923.2**	**56,494.2**	**1,571.0**	**2.9**

*Figures adjusted. †Includes gas liquids.

Worldwide gas production

(Billion cu ft)

	May	April	1974 cum.
	21.0	21.0	102.2
	11.9	14.1	65.0
	3.6	4.6	18.6
	261.1	271.2	1,357.5
	23.2	11.9	80.8
	10.2	5.0	39.1
	0.4	0.3	1.6
	55.8	56.3	280.0
	3.8	3.5	30.4
	2.4	4.9	28.1
	1,711.4	1,770.2	9,379.2
	44.9	140.1	667.1
	2,149.7	**2,303.1**	**12,049.6**
	9.4	10.1	47.3
	.....	.....	.....
	24.2	24.1	119.3
	65.8	60.2	295.3
	50.0	49.3	248.0
	305.5	271.2	1,324.8
	.....	.....	.....
	.....	.....	.....
	117.4	141.2	585.3
	3.7	5.0	22.6
	576.0	**561.1**	**2,642.6**
	.....	.....	.....
	0.5	0.1	1.6
	.....	.....	.....
	153.5	140.8	723.0
	11.1	11.0	55.2
	0.1	1.0	3.0
	0.2	0.1	0.7
	.....	.....	.....
	0.3	0.2	0.9
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
	154.6	**153.2**	**784.4**
	7.8	8.1	38.3
	11.4	10.2	56.4
	0.6	0.4	2.5
	0.2	.....	0.2
	1.6	1.8	9.5
	15.5	12.0	68.3
	6.2	9.0	39.9
	14.0	10.1	57.6
	3.1	3.8	18.2
	.....	.....	.....
	60.4	**55.4**	**290.9**
	1.7	2.0	9.3
	2.9	3.0	12.2
	.....	.....	.....
	0.4	0.2	2.0
	4.1	3.0	14.9
	1.2	1.0	5.6
	4.7	2.1	13.6
	2.5	1.5	9.9
	6.2	5.0	23.9
	0.6	0.2	3.7
	24.3	**18.0**	**95.1**
	15.9	16.0	75.6
	68.2	70.1	370.0
	741.3	737.7	3,741.8
	31.9	35.0	236.8
	857.3	**858.8**	**4,424.2**
	3,822.3	**3,949.6**	**20,286.8**

Gasoline prices

(Suggested prices for major-brand regular)

	Price ex. tax 7-16-74	Pump price 7-16-74	Pump price 7-17-73
Albany	45.9	57.9	39.9
Albuquerque	46.9	57.9	37.9
+Amarillo	40.1	49.1	33.9
Atlanta	44.2	55.7	38.9
Baltimore	42.9	55.9	38.9
Birmingham	42.9	54.9	37.9
Boston*	44.2	55.7	38.9
Buffalo	45.9	57.9	39.9
Charlotte	42.9	55.9	38.9
Cheyenne	47.9	58.9	39.9
Chicago*	45.6	58.6	40.4
Cleveland	43.9	54.9	37.9
+Corpus Christi	40.6	49.6	33.9
+Dallas	40.6	49.6	33.9
Denver	47.9	58.9	38.9
Des Moines	42.9	53.9	37.9
Detroit	42.5	55.5	39.9
+Fort Worth	40.6	49.6	33.9
+Houston	40.6	49.6	33.9
Indianapolis	44.9	56.9	39.9
Jacksonville	42.9	54.9	37.9
Kansas City	46.9	57.9	37.9
Little Rock	41.4	52.9	36.9
Louisville	45.9	56.9	37.9
−Los Angeles	41.9	52.9	38.9
Memphis	42.9	53.9	37.9
Miami	43.7	55.7	38.9
Milwaukee	44.9	55.9	38.9
Minn.-St. Paul	43.9	54.9	38.9
Newark	45.7	56.7	39.9
New Orleans	41.9	53.9	36.9
New York*	46.9	59.9	41.9
Norfolk	41.7	54.7	37.9
Okla. City	46.3	56.9	36.9
Omaha	44.4	56.9	39.9
Philadelphia	42.9	54.9	37.9
+Phoenix	42.9	53.9	38.9
Pittsburgh	42.9	54.9	37.9
−Portland, Ore.	43.7	54.7	38.9
Salt Lake City	45.9	56.9	36.9
+San Antonio	40.1	49.1	33.9
+San Diego	41.9	52.9	39.9
+San Francisco	42.8	53.8	38.9
+Seattle	42.1	55.1	39.9
−Spokane	41.7	54.7	39.9
Springfield, Ill.*	43.9	56.9	40.9
St. Louis	44.9	55.9	38.9
Tampa	43.7	55.7	38.9
+Texarkana	40.1	49.1	33.9
Tulsa	42.3	52.9	36.9
Wichita	43.9	54.9	37.9
+Wichita Falls	40.1	49.1	33.9
Week's avg.	**43.48**	**54.75**	**38.03**
June avg.	**43.21**	**54.50**	**37.95**
May avg.	**41.93**	**53.20**	**37.78**
1974 to date	**38.83**	**50.11**	....
1973 to date	**26.09**	**37.35**	....

+ Increase, − decrease from previous week. *Pump price includes local tax ranging from 0.5 to 2.0 cents/gal.

Refined-products prices

Following quotations are realistic spot prices for refined products moving intrastate on Tuesday each week. They may differ from refiners' prices for branded products. They should not be considered as postings.

Light products are in cents per gallon. Residual prices are in dollars per barrel.

Gasoline

Mid-Continent (Group 3):
Regular (92 octane) 28.00-32.00
Premium (99 octane) 30.00-34.00

California (rack) Los Angeles:
+Regular (91 octane) 25.50-33.55
+Regular (95 octane) 27.00-34.65
+Premium (100 octane) 28.00-35.65

Chicago:
Regular (94 octane) 28.00-33.00
Premium (100 octane) 30.00-35.00

Kerosine, distillate

Chicago:
−Distillate No. 1 ..... 27.50-30.50
−Distillate No. 2 ..... 26.50-29.50

Gulf Coast (cargoes):
Kerosine (42-43) 27.50-29.00
Distillate No. 2 ..... 25.50-28.00

Mid-Continent (Group 3):
Kerosine (42-44) 22.50-28.75
Diesel oil (58 d.i. & above) 23.00-27.00
Distillate No. 1 ..... 22.00-27.50
Distillate No. 2 ..... 20.50-26.00

New York Harbor (barges):
+Kerosine (42-44) 29.50-33.75
+Distillate No. 2 ..... 25.75-27.55
+Diesel fuel (48-52 d.i.) 26.80

Residual fuel

Mid-Continent (Group 3):
No. 6 (max. 1% S) $9.25
No. 6 (over 1% S) $8.25

Chicago:
No. 6 (max. 1% S) $13.02
No. 5 (max. 1% S) $13.86

New York Harbor (barges):
+No. 6 (max. 0.3% S) $13.39-13.99
No. 5 (0.3% S) $13.59-14.57

California (marine pipeline):
Bunker C Los Angeles $5.01

API imports of crude and products

(Thousands of barrels daily)

	DISTRICTS 1-4			DISTRICT 5			TOTAL U.S.		
	7-12 1974	7-5 1974	7-13 1973	7-12 1974	7-5 1974	7-13 1973	7-12 1974	7-5 1974	7-13 1973
Gasoline	153	290	72	2	...	...	155	290	72
Special Naphthas	...	5	12	...	...	...	...	5	12
Kerosine	5	5	...	...	...	...	5	5	...
Distillate	133	100	64	5	...	5	138	105	64
No. 4 Fuel Oil	44	59	29	...	...	...	44	59	29
Residual	1,825	1,691	1,412	100	29	75	1,925	1,766	1,441
Jet Fuel (Naphtha)	...	...	...	...	5	...	...	...	5
Jet Fuel (Kerosine)	77	65	119	47	55	22	124	87	174
Asphalt	40	31	22	...	...	...	40	31	22
LP-Gas	112	141	119	16	23	21	128	162	142
Petrochem Feedstocks	5	15	...	...	...	...	5	15	...
Unfinished	126	137	65	53	46	46	179	183	111
Plant Condensate	83	115	116	10	10	10	93	125	126
Total Prod.	**2,603**	**2,654**	**2,030**	**233**	**168**	**179**	**2,836**	**2,833**	**2,198**
Canadian Crude	468	496	934	208	323	153	676	649	1,259
Other Foreign	2,282	1,864	1,429	840	682	448	3,122	2,312	2,109
Total Crude	**2,750**	**2,360**	**2,363**	**1,048**	**1,005**	**601**	**3,798**	**2,961**	**3,368**
Total Imports	**5,353**	**5,014**	**4,393**	**1,281**	**1,173**	**780**	**6,634**	**5,794**	**5,566**

Worldwide crude production

(Daily average in thousands of bbl)

	April 1974	March* 1974	4-month average Daily prod. 1973	4-month average Daily prod. 1974	Change from Vol.	Change from %
WESTERN HEMISPHERE						
Argentina	420.0	423.0	424.0	426.0	2.0	0.5
Bolivia	50.0	50.0	50.0	50.0	.....	.....
Brazil	170.0	170.0	169.0	170.0	1.0	0.6
Canada	1,810.0	1,881.0	1,819.0	1,845.0	26.0	1.4
Chile	30.0	30.0	34.0	30.0	− 4.0	− 11.8
Colombia	175.0	175.0	198.0	176.0	− 22.0	− 11.1
Ecuador	245.0	240.0	211.0	235.0	24.0	11.4
Mexico	530.0	520.0	453.0	523.0	70.0	15.5
Peru	75.0	75.0	67.0	75.0	8.0	11.9
Trinidad	170.0	170.0	163.0	173.0	10.0	6.1
United States	8,965.0	9,023.0	9,236.0	9,024.0	−212.0	− 2.3
Venezuela	3,044.0	3,179.0	3,313.0	3,186.0	−127.0	− 3.8
Total	**15,684.0**	**15,936.0**	**16,137.0**	**15,913.0**	**−224.0**	**− 1.4**
WESTERN EUROPE						
Austria	50.0	50.0	50.0	50.0	.....	.....
Denmark	2.0	4.0	4.0	4.0	.....	.....
France	25.0	25.0	27.0	24.0	− 3.0	− 11.1
West Germany	125.0	125.0	131.0	126.0	− 5.0	− 3.8
Italy	15.0	15.0	15.0	15.0	.....	.....
Netherlands	30.0	30.0	30.0	30.0	.....	.....
Norway	13.0	17.0	34.0	14.0	− 20.0	− 58.8
Spain	35.0	35.0	7.0	33.0	26.0	371.4
United Kingdom	2.0	2.0	2.0	2.0	.....	.....
Yugoslavia	65.00	65.0	66.0	66.0	.....	.....
Total	**362.0**	**368.0**	**366.0**	**364.0**	**− 2.0**	**− 0.6**
MIDDLE EAST						
Abu Dhabi	1,616.0	1,489.0	1,332.0	1,401.0	69.0	5.2
Bahrain	67.0	68.0	68.0	69.0	1.0	1.5
Dubai	241.0	250.0	220.0	230.0	10.0	4.5
Iran	6,175.0	6,125.0	5,816.0	6,142.0	326.0	5.6
Iraq	1,871.0	1,812.0	1,803.0	1,820.0	17.0	0.9
Israel	100.0	100.0	100.0	100.0	.....	.....
Kuwait	2,836.0	2,841.0	3,136.0	2,841.0	−295.0	− 9.4
Oman	296.0	292.0	284.0	296.0	12.0	4.2
Qatar	519.0	518.0	597.0	518.0	− 79.0	− 13.2
Saudi Arabia	8,653.0	8,135.0	7,229.0	8,027.0	798.0	11.0
Syria	150.0	150.0	118.0	138.0	20.0	16.9
Turkey	65.0	65.0	62.0	66.0	4.0	6.5
Total	**22,589.0**	**21,845.0**	**20,765.0**	**21,648.0**	**883.0**	**4.3**
ASIA-PACIFIC						
Afghanistan	.....	.....	.....	.....	.....	.....
Australia	404.0	415.0	395.0	435.0	40.0	10.1
Burma	20.0	20.0	20.0	21.0	1.0	5.0
Brunei-Malaysia	375.0	350.0	305.0	356.0	51.0	16.7
India	150.0	150.0	148.0	149.0	1.0	0.7
Indonesia	1,413.0	1,440.0	1,236.0	1,424.0	188.0	15.2
Japan	15.0	15.0	15.0	15.0	.....	.....
Pakistan	8.5	8.5	8.5	8.5	.....	.....
Taiwan	2.0	2.0	2.0	2.0	.....	.....
Thailand	0.2	0.2	0.5	0.5	.....	.....
Total	**2,387.7**	**2,250.7**	**2,129.7**	**2,410.7**	**281.0**	**13.2**
AFRICA						
Algeria	990.0	980.0	1,109.0	962.0	− 14.7	− 13.3
Angola	20.0	20.0	14.0	20.0	6.0	42.9
Cabinda	150.0	150.0	132.0	149.0	17.0	12.9
Congo	35.0	35.0	32.0	34.0	2.0	6.3
Egypt	130.0	110.0	201.0	114.0	− 87.0	− 43.3
Gabon	165.0	165.0	129.0	162.0	33.0	25.6
Libya	1,734.0	1,882.0	2,301.0	1,898.0	−403.0	− 17.5
Morocco	1.0	1.0	1.0	1.0	.....	.....
Nigeria	2,300.0	2,290.0	1,938	2,257.0	319.0	16.5
Tunisia	70.0	70.0	85.0	70.0	− 15.0	− 17.6
Total	**5,595.0**	**5,703.0**	**5,942.0**	**5,667.0**	**−275.0**	**− 4.6**
COMMUNIST						
China	860.0	860.0	600.0	860.0	260.0	43.3
Romania	280.0	280.0	275.0	280.0	5.0	1.8
U.S.S.R.†	9,028.0	8,948.0	8,280.0	8,942.5	662.5	8.0
Other	110.0	110.0	100.0	110.0	10.0	10.0
Total	**10,278.0**	**10,198.0**	**9,255.0**	**10,192.5**	**937.5**	**10.1**
WORLD TOTAL	**56,895.7**	**56,300.7**	**54,594.7**	**56,195.2**	**1,600.5**	**2.9**

*Figures adjusted. †Includes condensate.

Worldwide gas production

(Billion cu ft)

	April	March	1974 cum.
Argentina	21.0	16.8	81.2
Bolivia	14.1	12.9	53.1
Brazil	4.6	3.5	15.0
Canada	271.2	268.4	1,096.4
Chile	11.9	12.0	57.6
Colombia	5.0	4.6	28.9
Ecuador	0.3	0.2	1.2
Mexico	56.3	56.4	224.2
Peru	3.5	7.9	26.6
Trinidad	4.9	4.8	25.7
United States	1,770.2	1,775.2	7,667.8
Venezuela	140.1	141.2	622.2
Total	**2,303.1**	**2,303.9**	**9,899.9**
WESTERN EUROPE			
Austria	10.1	9.6	37.9
Denmark	.....	.....	.....
France	24.1	24.4	95.1
West Germany	60.2	51.4	229.5
Italy	49.3	52.4	198.0
Netherlands	271.2	266.1	1,019.3
Norway	.....	.....	.....
Spain	.....	.....	.....
United Kingdom	141.2	135.4	467.9
Yugoslavia	5.0	4.9	18.9
Total	**561.1**	**544.2**	**2,066.6**
MIDDLE EAST			
Abu Dhabi	.....	.....	.....
Bahrain	0.1	0.2	1.1
Dubai	.....	.....	.....
Iran	140.8	141.7	569.5
Iraq	11.0	10.9	44.1
Israel	1.0	0.9	2.9
Kuwait	0.1	0.1	0.5
Oman	.....	.....	.....
Qatar	0.2	0.2	0.6
Saudi Arabia	.....	.....	.....
Syria	.....	.....	.....
Turkey	.....	.....	.....
Total	**153.2**	**154.0**	**618.7**
ASIA-PACIFIC			
Afghanistan	8.1	7.8	30.5
Australia	10.2	11.4	45.0
Burma	0.4	0.6	1.9
Brunei-Malaysia	.....	.....	.....
India	1.8	2.0	7.9
Indonesia	12.0	13.7	52.8
Japan	9.0	8.4	33.7
Pakistan	10.1	11.2	43.6
Taiwan	3.8	4.2	15.1
Thailand	.....	.....	.....
Total	**55.4**	**59.3**	**230.5**
AFRICA			
Algeria	2.0	2.1	7.6
Angola	3.0	2.3	9.3
Cabinda	.....	.....	.....
Congo	0.2	0.4	1.6
Egypt	3.0	2.9	10.8
Gabon	1.0	1.2	4.4
Libya	2.1	1.9	8.9
Morocco	1.5	2.0	7.4
Nigeria	5.0	4.7	17.7
Tunisia	0.2	0.4	3.1
Total	**18.0**	**17.9**	**70.8**
COMMUNIST			
China	16.0	15.6	59.7
Romania	70.1	77.1	301.8
U.S.S.R.†	737.7	776.6	3,000.5
Other	35.0	37.8	204.9
Total	**858.8**	**907.1**	**3,566.8**
WORLD TOTAL	**3,949.6**	**3,986.4**	**16,453.3**