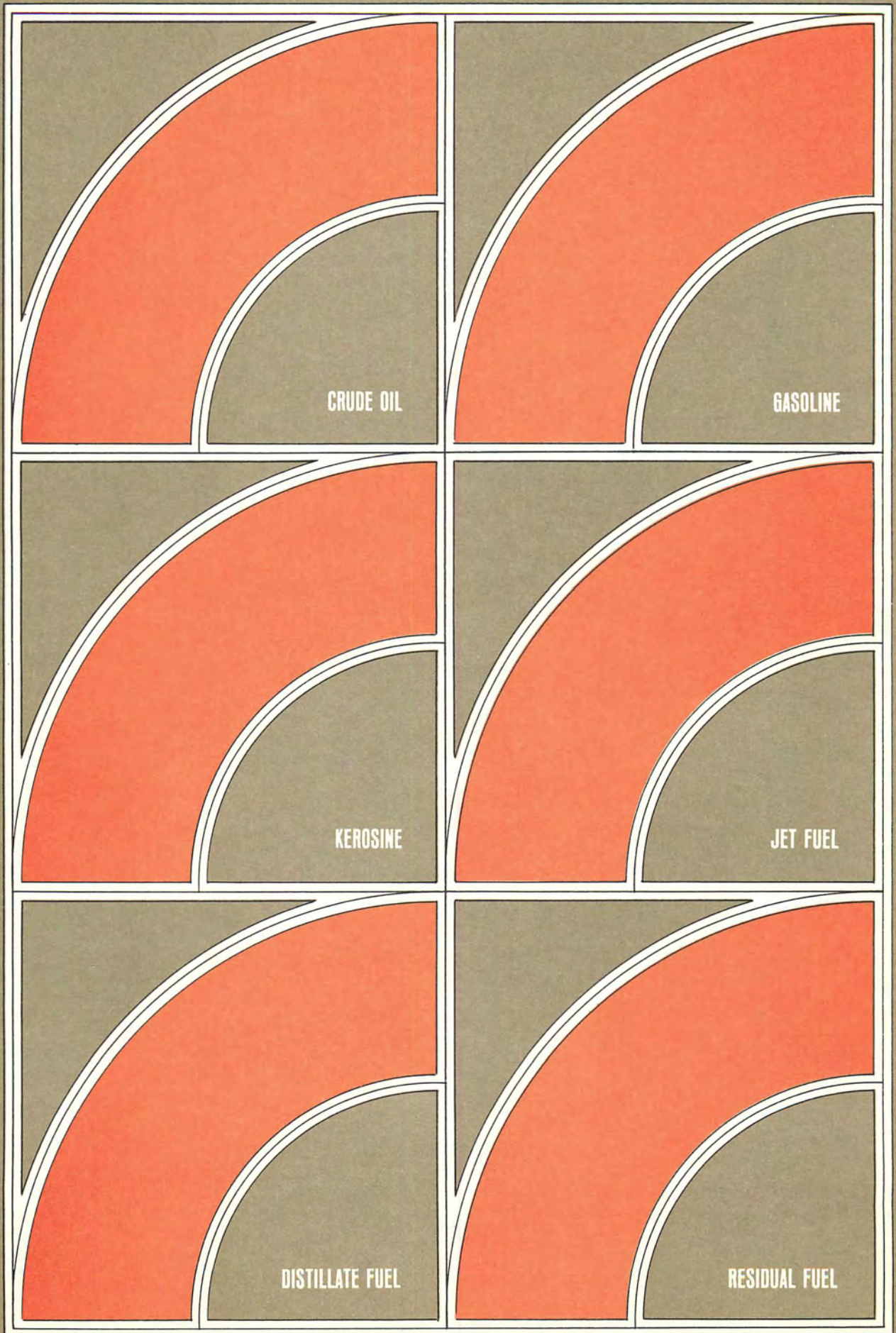


Petroleum Storage Capacity

The National Petroleum Council



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and to the
OFFICE OF OIL AND GAS

Prepared by the
National Petroleum Council
in response to a request from the
Department of the Interior

U.S. PETROLEUM INVENTORIES
AND STORAGE CAPACITY

JULY 17, 1970

Prepared by the
National Petroleum Council's
Committee on Petroleum Storage Capacity

Charles E. Spahr, *Chairman*

with the assistance of the

Technical Subcommittee
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INTRODUCTION

INTRODUCTION

In 1969, about 75 percent of the total energy requirements in the United States were supplied by petroleum and its products. This Nation's ability to produce goods and services both for peacetime economic growth as well as for national defense is virtually dependent upon the availability of petroleum. A few examples indicate the diverse U.S. reliance upon this fuel:

(1) Some 99 percent of U.S. transportation facilities run on petroleum;

(2) The average American farm today consumes about 2,750 gallons of petroleum fuel a year for all purposes;

(3) Oil and gas together account for about 36 percent of the fuel used in electric power generation;

(4) Some 90 percent of American homes are heated by either oil or gas;

(5) Over 50 percent of total materials purchased by the combined military establishments is for petroleum products.

The continuance of an adequate petroleum supply to meet demand is essential to the economic well-being and the security of the Nation. When regular supplies are disrupted, as has occurred from time to time in the past, the petroleum industry must be in a position to respond quickly to assure that at least military and essential civilian requirements are satisfied.

The deterrent effect of a strong domestic petroleum industry in the United States has been a major factor in overcoming international supply disruptions and suppressing potential disruptions. The fact that the U.S. domestic petroleum industry has been able to and should continue to sustain the U.S. economy in the face of outside supply interruptions, and assist in the supply of this Nation's allies, is of the utmost importance in maintaining the normal movement and supply of free-world petroleum.

An immediate--although temporary--response to interruption of supply would be to draw down on existing inventories of oil stocks. It is important, therefore, to determine periodically and analyze the "availability" of petroleum inventories and also the capacities for storing them. This information is of particular value to the Government, the Emergency Petroleum and Gas Administration, and the industry itself for use in pre-emergency planning. The matter of available inventories and storage

capacity also relates to the question of oil imports, improvement of industry operating efficiencies and productive capacity.

Since 1948, the National Petroleum Council has prepared reports periodically at the request of the Department of the Interior on the "availability" of petroleum inventories and storage capacity, by Bureau of Mines Districts (see map, *Appendix D*), the last report being submitted in March, 1963. Published statistics on petroleum inventories are on a total inventory basis as reported by the industry to the Bureau of Mines of the Interior Department. Inventories reported to the Bureau of Mines include stocks required for pipeline fill and operations, "working" stocks at refineries, and oils in transit to refineries by water or mobile transportation equipment. Such inventories are not "available" for use since they are components of a constantly functioning supply system. It should be noted that the NPC reports are the only present source of industry-wide data on "available" and "unavailable" inventories.

On April 12, 1969, the Hon. Hollis M. Dole, Assistant Secretary of the Interior for Mineral Resources, requested the Council to prepare a seventh report on available petroleum inventories and storage capacity (see *Appendix A*). Accordingly, Jack H. Abernathy, NPC Chairman, with the approval of the Department of the Interior, established a 14-member Committee on Petroleum Storage Capacity. He designated Charles E. Spahr, Chairman of the Board, The Standard Oil Company (Ohio), as Chairman of this Committee (see *Appendix B*). The Committee subsequently set up a working group to assist it--a Technical Subcommittee composed of 18 members under the Chairmanship of Oakley M. Turner, Manager, Transportation Department, The Standard Oil Company (Ohio). *Appendix C* presents the membership of the Subcommittee which prepared this report.

The previous report (1963) included, for the first time, storage operations within the States of Hawaii and Alaska. Herein, the report has further expanded coverage to include data covering Puerto Rico which is not reported to the Bureau of Mines. (The Bureau develops supply/demand data for the 50 States only and treats as foreign the movement of petroleum products between the 50 States and Puerto Rico.)

Another change from previous reporting procedure is the separate reporting of naphtha-type jet fuel which heretofore was included with the kerosine data. This was done in order to recognize the increasing importance of this type of fuel in industry operations and reflect the expansion of the military and civilian jet airfleet. However, no data on product inventories or storage capacity owned or controlled by the military was requested or included in this report.

Questionnaires were sent, along with the map showing district outlines, definitions, and other explanations (see *Appendix D*), to all holders of crude oil and principal petroleum products inventories at refineries, pipelines, tank farms, and bulk terminals. The aggregate data, in detail, as reported by the participating companies, also appears in *Appendix D*.

In comparison with inventories reported by the Bureau of Mines as of September 30, 1969, the crude oil summary of this report represents 97.7 percent of the crude oil in transit to refineries and the crude oil constituting refinery, pipeline and tank farm stocks. The gasoline figures reported to the NPC survey were 96.5 percent of the total reported to the Bureau; kerosine (excluding naphtha-type jet fuel) covered 96 percent; naphtha-type jet fuel represents 108.3 percent coverage; distillate fuel oil 93.8 percent; and residual fuel oil 95.5 percent.

Total inventories were reported as either being "available" or "unavailable" as of September 30, 1969. "Available" inventories include both inventories which could be shipped for immediate consumption, and inventories which have been accumulated against normal seasonal requirements (see *Part One* for discussion).

The more than 95 percent coverage by the NPC survey of total inventories reported to the Bureau of Mines is extremely gratifying. The National Petroleum Council is grateful to all who participated in this survey and so promptly returned the information requested. The considerable time, effort and expense they contributed in supplying this important and useful data is appreciated.

PART ONE

CONCEPT OF PETROLEUM STORAGE OPERATIONS

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CONCEPT OF PETROLEUM STORAGE OPERATIONS

The survey made by the National Petroleum Council committee on crude and product inventories makes it possible to ascertain the general geographical location and the disposition of some 727 million barrels of oil at refineries, in pipelines, tank farms, and bulk terminals. However, the following facts must be emphasized:

(1) Some 292 million barrels (or 40.2 percent) of the 727 million barrels of total crude oil, clean products and residual fuel oil inventories included in this report are completely unavailable for consumption. The reasons for these inventories being "unavailable" are as follows:

- a) content of storage tank bottoms
- b) oil inside refinery pipelines and needed for operating equipment
- c) minimum quantities of oil required to assure continuous processing, handling, and blending of various grades of crude oil or product
- d) oil inside main trunk pipelines and oil for pipeline operations
- e) one-half average size of water cargo receipts (ocean traffic)
- f) other oils unavailable, including oil in transit by truck, tank car, barge and tankers from domestic sources.

(2) The remaining 435 million barrels (or 59.8 percent) of the 727 million barrels of total oil in inventory are categorized as "available" for purposes of this report. However, the following clarification of that term must be understood within this context:

- a) A proportion of "available" inventories represents that volume of oil which could be shipped currently (not necessarily immediately) for consumption, recognizing that in any emergency situation (i.e., anything out of the normal supply system pattern), the transportation factor involved in getting such oil to the right place, at the right time, in the desired quantities, might be substantial and would

require at the very least considerable lead time.

- b) An equal proportion of these "available" inventories must be retained, even in an emergency, if the domestic seasonal requirements are to be supplied. Inventory figures, at any point in time, include stocks of one or more products which have been accumulated in advance to meet "peak load" draw-downs. An example is distillate heating oil, stored heavily in the summer and early fall in order to meet peak requirements during the cold winter heating season. If in an emergency the "available" inventories of that product were to be stripped or pulled down to absolute minimum in summer and early fall then the winter requirements for heating oil could not be met.

Storage Capacity

The petroleum industry must maintain sizeable storage capacity to maintain normal flexibility in its overall operations of the supply system. Raw materials (crude oil, natural gasolines, etc.) are moved to U.S. petroleum refineries from the wellhead via field gathering facilities to main line (trunk line) transportation facilities (i.e., pipelines) and frequently in tankers and barges. Once the crude oil is refined its numerous products are further moved to consuming points by similar modes of transportation. At every point in this complex fabric of supply (operable 24 hours a day) there is inventory "tied up" in the system itself or in tanks along the way.

Based on 21 years experience (via NPC surveys) the industry has found it necessary to maintain a total storage capacity of at least two barrels for each barrel of actual inventory in the tanks, as shown in the following tabulation:

<u>Survey of</u>	<u>Ratio of Storage Capacity to Inventory in Tanks</u>
March 31, 1948	2.4 to 1
June 30, 1950	2.2 to 1
March 31, 1952	2.2 to 1
March 31, 1954	2.1 to 1
March 31, 1957	2.2 to 1
Sept. 30, 1962	2.0 to 1
Sept. 30, 1969	1.9 to 1

This relationship is of prime requisite to maintain operating flexibility and to provide for seasonal variations in demand. In no sense can the difference between the actual inventories and the storage capacity figures shown herein be taken as an indication of available storage space.

Costs of Storage

To suggestions that sizeable, additional storage capacity be added to the overall system for "emergency standby" purposes, the response must be given that the cost of storage comes very high. Not only is tankage a substantial cost item, but the value of all oil products tied up as contents within unnecessary tankage represents a significant cost item. The petroleum industry constantly strives for more efficient operations, including its storage practices, thus achieving lower overall investment and maintenance costs committed to tankage and inventory fill.

The average cost of constructing storage facilities is \$3.00 to \$3.30 per barrel and a cost of some 5¢ per barrel per year to cover maintenance and 65¢ per barrel per year to cover overhead. In addition, there is the capital cost per barrel of the oil itself.

Thus, should "excess" storage capacity be provided for, the additional costs of such unnecessary or "non-working" tankage would be additional to the basic costs of the oils.

Days of Supply Concept

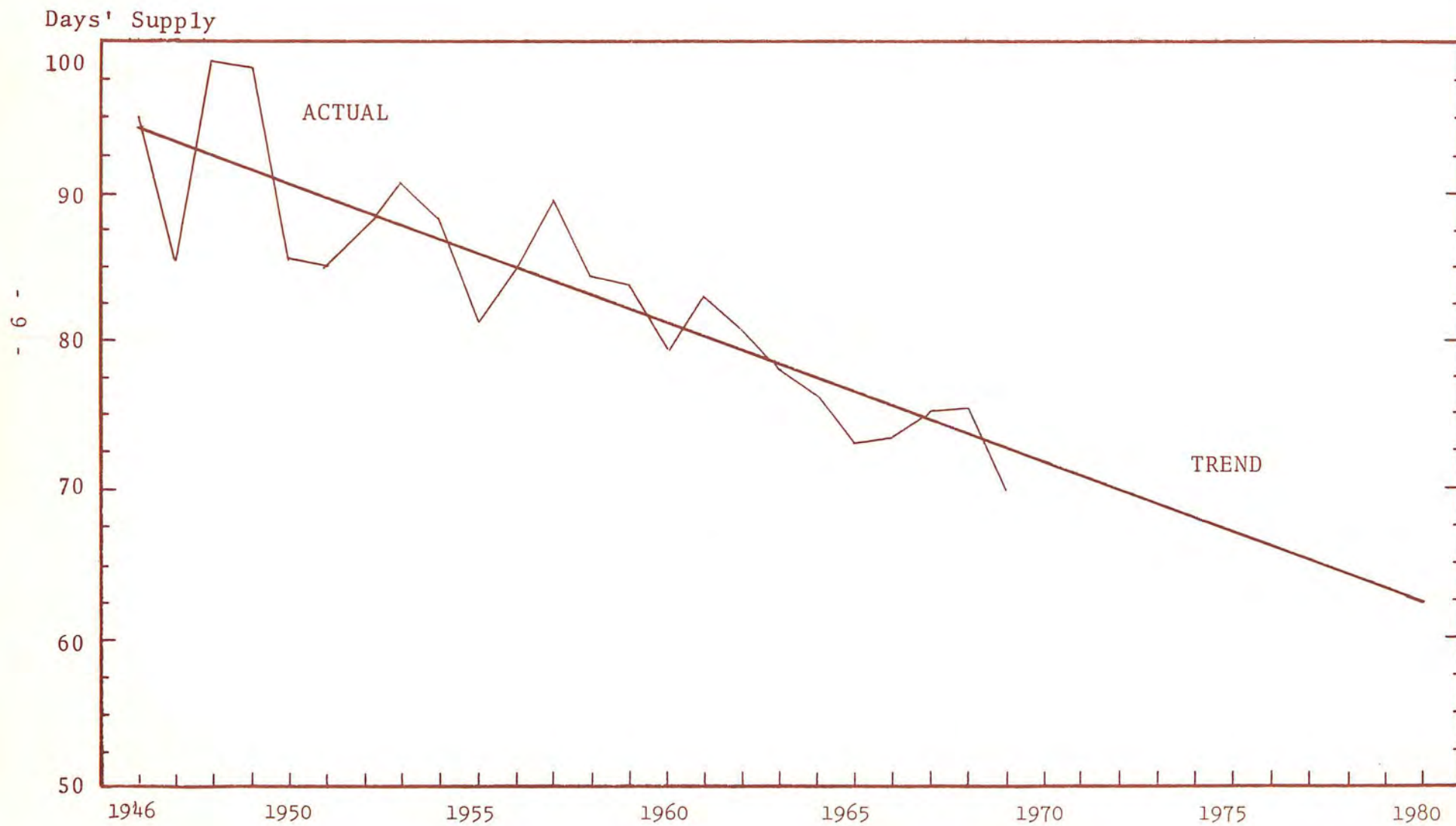
It has been postulated that if, in an emergency, regular oil supplies are interrupted, oil inventories could be drawn down substantially, in addition to expanding production and reducing demand through the mechanism of rationing.

The data from the current survey indicates that 31 percent of crude oil inventories are "available" (per qualifications noted above), and that some 73 percent of clean product stocks are "available." Thus, theoretically, of the 70 days' supply of primary inventories on hand ($70 \times 59.8\%$ available), 42 days' supply is potentially "available" at this particular point in time (viz., September 30, 1969).

By improving distribution efficiencies, the petroleum industry has been able to reduce the days' supply of total primary inventories by approximately one day per year over the past quarter of a century. For example, while actual 1968 inventories represented 75 days' supply (45 days' "available," 30 days' "unavailable"), the trend projects 62 days' supply in 1980. Accordingly, by 1980 the industry could not draw down 45 days'

supply from a total of 62 days' supply without incurring massive supply dislocations and extreme distortions to its own supply system (based on a demand factor of some 20 million barrels per day). This is especially true if the current 60/40 split between "available" and "unavailable" inventories prevails until 1980. At that time about 37 days' supply would be classified as "available," and 25 days' supply as "unavailable" (see *Exhibits 1 and 2*).

As previously suggested, all oils classified as "available" cannot be completely drawn down even in an emergency. It would be impossible to continue operations on a feasible basis without a *substantial* portion of "available" inventories in tankage earmarked for distribution purposes.

TOTAL UNITED STATES DAYS' SUPPLY - ALL OILS

STRAIGHT LINE TREND
TOTAL UNITED STATES DAYS' SUPPLY - ALL OILS .
(1946 - 1980)

Year	Ending Inventories All Oils MM Bbl. (1)	Domestic and Export Demand M B/D (2)	Days' Supply (1)÷(2) (3)	Days' Supply Trend* (4)	Days' Supply Actual Minus Trend (5)	Trend Inventories All Oils MM Bbl. (6)
1946	507.1	5,331	95.1	94.2	+0.9	502
1947	502.0	5,902	85.1	93.3	-8.2	551
1948	605.7	6,143	98.6	92.3	+6.3	567
1949	602.9	6,131	98.3	91.4	+6.9	560
1950	582.7	6,812	85.5	90.5	-5.0	616
1951	634.1	7,463	85.0	89.5	-4.5	668
1952	673.7	7,712	87.4	88.6	-1.2	683
1953	725.5	8,005	90.6	87.6	+3.0	701
1954	714.9	8,115	88.1	86.7	+1.4	704
1955	714.8	8,827	81.0	85.7	-4.7	756
1956	780.4	9,209	84.7	84.8	-0.1	781
1957	841.3	9,386	89.6	83.9	+5.7	787
1958	788.8	9,358	84.3	82.9	+1.4	776
1959	809.0	9,662	83.7	82.0	+1.7	792
1960	778.7	9,863	79.0	81.0	-2.0	799
1961	825.1	9,980	82.7	80.1	+2.6	799
1962	836.9	10,407	80.4	79.1	+1.3	823
1963	835.5	10,759	77.7	78.2	-0.5	841
1964	839.2	11,017	76.2	77.3	-1.1	852
1965	836.3	11,490	72.8	76.3	-3.5	877
1966	881.1	12,048	73.1	75.4	-2.3	908
1967	944.1	12,584	75.0	74.4	+0.6	936
1968	999.6	13,316	75.1	73.5	+1.6	979
1969	982.1	14,045	69.9	72.6	-2.7	1,020
1970				71.6		
1971				70.7		
1972				69.7		
1980				62.2		

Source: U.S. Bureau of Mines Data

* Straight line least squares trend:
 $Y_c = 83.86 - 0.943182X$
 Origin 1957, X units,
 one year. (1946-1968)

PART TWO

CRUDE OIL
Summary of Findings

PART TWO

CRUDE OIL - Summary of Findings

Table I summarizes the returns submitted by participating companies covering all crude oil inventories and storage capacity except producers' lease stocks.

This study of inventories and storage capacity affords an opportunity for analysis of trends over a 21-year period. The more significant trends with respect to crude oil are shown in Table II. The significant changes since the NPC study covering 1962 are:

(1) Total crude oil inventories increased 23 million barrels over the 7-year period, 16 million barrels of which were in "available" stocks. This represents an increase of total crude inventories of about 10 percent over the same time period when crude runs to refineries increased by 26.5 percent.

Total storage capacity for crude oil decreased since 1962 by 25 million barrels (see *Table I*). While capacity was increased by 8 million barrels in District V, it decreased 33 million barrels in the aggregate districts east of the Rockies (I-IV).

(2) The volume of crude oil required for pipeline fill increased by 8.5 million barrels since 1962. Due to greater efficiencies, however, only 69.1 percent of total crude oil inventories are shown as "unavailable" in 1969 as compared to 73.2 percent in 1962 (see *Table I*).

(3) This study indicates that there are approximately 23 days' total supply of crude oil in inventory, of which 7 days' supply are "available" (based on daily refinery runs of 10.8 million barrels for September, 1969).

Table III shows the information on crude oil inventories and storage capacity broken down by the five Bureau of Mines major supply and demand districts (see map, *Appendix D*).

TABLE I

CRUDE OIL

Summary of Inventories and Storage Capacity
 (Excluding Producers' Lease Stocks)
 (Thousands of Barrels)

	<u>1962</u> (September)	<u>1969</u> (30)
1. <u>TOTAL INVENTORIES:</u>		
Reported by Bureau of Mines	223,939	245,912
Reported to NPC	217,626	240,341
NPC Survey Represents (Percent)	97.2	97.7
2. <u>TOTAL UNAVAILABLE:</u>	159,507	165,989
As Percent of Inventories Reported to NPC	73.2	69.1
3. <u>AVAILABLE FOR USE OR SHIPMENT:</u>	58,219	74,352
As Percent of Inventories Reported to NPC	26.8	30.9
4. <u>STORAGE CAPACITY:</u>	395,255 <u>a/</u>	370,326 <u>b/</u>
5. <u>AMOUNT IN TANKS:</u> <u>c/</u>	162,747	174,526
Percent Full	41.2	47.1

a/ Includes about 7,300,000 barrels of reservoir storage capacity in PAD District V (California).

b/ Includes about 3,400,000 barrels of reservoir storage capacity in PAD District V (California). With respect to 3,900,000 barrels of reservoir storage reported in the 1962 survey, some was put into thermal secondary recovery operations, and some was taken completely out of service.

c/ Total crude oil inventories excluding producers' lease stock, in transit and pipeline fill.

TABLE II

Analysis of Crude Oil Inventories as Reported to NPC (1948-1969)^{a/}
(Thousands of Barrels)

	March 31 1948	June 30 1950	March 31 1952	March 31 1954	March 31 1957	Sept.30 1962	Sept.30 1969
1. <u>TOTAL INVENTORIES HELD BY REPORTING COMPANIES:</u>	213,224	224,948	238,413	243,692	225,516	217,626	240,341
2. <u>UNAVAILABLE INVENTORIES:</u>							
(a) Tank Bottoms & Refinery Operating Requirements ^{b/}	34,067	38,031	39,364	41,423	41,277	41,431	44,701
(b) Pipeline Fill	30,579	36,618	41,028	44,341	47,036	51,722	60,311
(c) Other Unavailable	68,279	67,790	70,514	80,884	69,269	66,254	60,977
3. <u>TOTAL UNAVAILABLE INVENTORIES:</u>	132,925	142,439	150,906	166,648	157,582	159,407	165,989
4. <u>UNAVAILABLE AS PERCENT OF TOTAL REPORTED TO NPC:</u>	62.3	63.3	63.3	68.4	69.9	73.2	69.1
5. <u>TOTAL AVAILABLE INVENTORIES:</u>	80,299	82,509	87,507	77,044	67,934	58,219	74,352

^{a/} Excluding producers' lease stocks and cargoes
in transit from foreign countries.

^{b/} Contents of tank bottoms, in refinery pipelines and
minimum quantity required to assure continuous
processing, handling and blending various grades
of crude oil.

CRUDE OIL

Analysis of Inventories a/ and Storage Capacity by PAD Districts b/ As of September 30

(Thousands of Barrels)

	PAD District I	PAD District II	PAD District III
1. <u>Total Inventories Reported by Bureau of Mines</u>			
(a) 1962	18,460	64,539	103,038
(b) 1969	18,147	73,586	105,208
2. <u>Total Inventories Reported to NPC</u>			
(a) 1962	16,685	60,936	104,350
(b) As percent of 1 (a)	90.4	94.4	101.3
(c) 1969	18,011	72,189	103,851
(d) As percent of 1 (b)	99.3	98.1	98.7
3. <u>Unavailable Portion of Inventories Reported to NPC</u>			
(a) 1962	11,588	45,306	77,047
(b) As percent of 2 (a)	69.5	74.3	73.8
(c) 1969	13,823	51,111	74,101
(d) As percent of 2 (c)	76.7	70.8	71.4
4. <u>Storage Capacity Reported to NPC</u>			
(a) 1962	30,270	105,419	178,665
(b) 1969	24,906	96,414	159,772
5. <u>Amount in Tanks <u>c/</u></u>			
(a) 1962	14,476	40,875	79,471
(b) 1969	14,133	48,726	72,817
6. <u>Percent of Tankage Filled</u>			
(a) 1962	47.8	38.8	44.5
(b) 1969	56.7	50.5	45.6

a/ For items 1, 2, 3. This includes inventories at refineries, in pipeline and tank farms and in transit thereto.

b/ See map of PAD Districts (Appendix A).

c/ Includes about 7,300,000 barrels of reservoir storage in PAD District V (California).

TABLE III

PAD District IV	PAD District V	TOTAL U.S.
10,890	27,012	223,939
10,730	38,241	245,912
11,395	24,260	217,626
104.6	89.8	97.2
10,323	35,967	240,341
96.2	94.1	97.7
8,512	16,954	159,407
74.7	69.9	73.2
7,711	19,243	165,989
74.7	53.5	69.1
19,726	61,175 ^{c/}	395,255
20,281	68,953 ^{d/}	370,326
6,330	21,595	162,747
6,437	32,413	174,526
32.1	35.3	41.2
31.7	47.0	47.1

d/ Includes about 3,400,000 barrels of reservoir storage capacity in PAD District V (California). With respect to 3,900,000 barrels of reservoir storage reported in the 1962 survey, some was put into thermal secondary recovery operations, and some was taken completely out of service.

e/ Total crude stocks excluding producers' lease stocks, in transit and pipeline fill.

PART THREE

CLEAN PRODUCTS
Summary of Findings

PART THREE

CLEAN PRODUCTS - Summary of Findings

A comparison of total product inventories for "clean products" held by the reporting companies showing the "available" and "unavailable" portions thereof, and storage capacities reported at the end of the third calendar quarter of 1962 and 1969 for gasoline, kerosine, jet fuel (naphtha-type) and distillate fuel oil, are shown in Table V. Naphtha-type jet fuel is reported separately in this survey whereas previously it was included in the kerosine data.

(1) *Gasoline* inventories reported in this survey increased 11 million barrels (6.2%) from those reported in 1962. The "unavailable" portion of total gasoline inventories increased 8 million barrels (13.8%) while the "available" inventory increased only 3 million barrels (2.3%). The increase in "unavailables" can be attributed to increased pipeline fill and operating requirements for pipeline facilities constructed since 1962. Gasoline storage tank capacity increased 4 million barrels (1.3%) and stocks in tankage increased some 1 million barrels (0.9%). The higher level market demand for gasoline in relation to the 1962 demand is being satisfied with minimum additional storage facilities and inventories except for the "unavailables" needed for pipeline fill and operations.

(2) *Kerosine* inventories reported in the NPC survey increased 12 million barrels (34.0%) over the 7-year period since 1962. Of the total, 3 million barrels, or 36.7 percent, was in "unavailable" stocks, and 9 million barrels, or 33.2 percent, was in "available" stocks. Storage tank capacity increased 18 million barrels (28.9%) and stocks in tanks increased 10 million barrels (30.0%). The increase in kerosine storage facilities and inventories is due primarily to the substantially higher demand for commercial aircraft fuels.

(3) *Distillate* fuel oil inventories expanded 12 million barrels or 6.7 percent over the 7-year period. "Unavailable" inventories increased 5 million barrels (16.5%) and "available" inventories increased 7 million barrels (4.6%). Storage tank capacity increased 24 million barrels (9.5%) and stocks in tanks increased 6 million barrels (3.9%). The increase in inventories can be attributed to various product requirements for pipeline fill, operations and market demand. The additional storage tank facilities were required to satisfy higher market demand for this highly seasonal product.

(4) In summary, the total "clean products" inventories reported to the NPC survey increased 44 million barrels or 11.5 percent in the period from September 30, 1962, to September 30, 1969, which also consisted of an increase in "unavailable" inventories of 18 million barrels (18.1%) and an increase in "available" inventories of 26 million barrels (9.2%). Storage tank capacity increased 61 million barrels (9.3%) and the product in the tanks increased 27 million barrels (7.6%). The ratios of products "unavailable" and "available" to total inventories, and the percentages of products in tanks to storage capacity assigned have not changed significantly over the 7-year period.

Tables VI, VII, VIII and IX show the details of Table V by Bureau of Mines Refining Districts for gasoline, kerosine, jet fuel (naphtha-type) and distillate fuel oils. Table IV presents an analysis of total "clean products" over the 21-year period 1948-1969.

TABLE IV

Analysis of Clean Products Inventories (1948-1969)
(Thousands of Barrels)

	March 31 1948	June 30 1950	March 31 1952	March 31 1954	March 31 1957	Sept.30 1962	Sept.30 1969
1. <u>TOTAL INVENTORIES HELD BY REPORTING COMPANIES:</u>	149,903	180,595	220,283	251,450	294,127	385,840	430,148
2. <u>UNAVAILABLE INVENTORIES:</u>							
Tank Bottoms	22,262	24,176	26,128	28,865	27,834	32,648	33,783
Unfinished at Refineries ^{a/}	8,957	9,403	10,739	7,234	11,520	<u>a/</u>	<u>a/</u>
Refinery Lines & Operating Equipment	1,524	1,641	1,768	1,772	1,802	7,190	929
One-Half Average Size Water Cargo Receipt	9,993	10,077	13,083	13,417	14,856	15,682	14,686
Other Unavailable Inventories	14,776	11,877	14,648	12,557	12,836	8,977	9,988
Pipeline Fill	4,813	4,046	8,202	12,747	14,816	17,022	35,854
Pipeline Operating Requirements	6,446	6,702	4,158	7,963	11,162	9,701	15,651
In Transit--Truck, Tank Car, Barge & Tanker from Domestic Source	<u>6,462</u>	<u>6,030</u>	<u>8,265</u>	<u>7,239</u>	<u>8,173</u>	<u>7,926</u>	<u>6,150</u>
3. <u>TOTAL UNAVAILABLE INVENTORIES:</u>	75,233	73,592	86,991	91,794	103,539	99,146	117,041
4. <u>UNAVAILABLE AS PERCENT OF TOTAL REPORTED TO NPC:</u>	50.2	41.0	39.5	36.5	35.2	25.7	27.2
5. <u>TOTAL AVAILABLE INVENTORIES:</u>	74,670	106,643	133,292	159,656	190,588	286,694	313,107

^{a/} Unfinished at refineries has been omitted because of a change
in Bureau of Mines method of reporting effective January 1, 1962.

CLEAN PRODUCTS

Summary of Inventories and Storage Capacity (Thousands of Barrels)

	<u>Gasoline</u>		<u>Kerosene ^{a/}</u>	
	<u>As of Sept. 30</u> <u>1962</u>	<u>1969</u>	<u>As of Sept. 30</u> <u>1962</u> ^{b/}	<u>1969</u>
1. <u>Total Inventories:</u>				
Reported by Bureau of Mines	179,896	193,942	36,682	49,922
Reported to NPC	176,222	187,192	35,776	47,942
NPC Survey represents (Percent)	98.0	96.5	97.5	96.0
2. <u>Total Unavailable:</u>	60,943	68,852	8,092	11,054
As Percent of Inventories Reported to NPC	34.3	36.8	22.6	23.1
3. <u>Available for Current Shipment, or Held as Seasonal Requirements:</u>	115,729	118,340	27,684	36,888
As Percent of Inventories Reported to NPC	65.7	63.2	77.4	76.9
4. <u>Storage Capacity Assigned:</u>	341,979	346,264	61,922	79,838
5. <u>Amount in Tanks:</u> ^{e/}	159,534	160,965	34,402	44,734
Percent Full	46.7	46.5	55.6	56.0

^{a/} Includes kerosene type jet fuel.

^{b/} Also includes gasoline components of jet fuel.

^{c/} Naphtha-type only.

^{d/} Not available; included with kerosene in 1962.

^{e/} Total inventories excluding pipeline fill and in transit
(truck, tank car, barge, and tanker from domestic source).

TABLE V

<u>Jet Fuel ¢/</u> <u>As of Sept. 30</u>		<u>Distillate Fuel Oil</u> <u>As of Sept. 30</u>		<u>Total Clean Products</u> <u>As of Sept. 30</u>	
<u>1962</u>	<u>d/ 1969</u>	<u>1962</u>	<u>1969</u>	<u>1962</u>	<u>1969</u>
--	8,851	177,030	197,605	393,608	450,320
--	9,584	173,842	185,430	385,840	430,148
--	108.3	98.2	93.8	98.0	95.5
--	1,533	30,561	35,602	99,146	117,041
--	16.0	17.6	19.2	25.7	27.2
--	8,051	143,281	149,828	286,694	313,107
--	84.0	82.4	80.8	74.3	72.8
--	14,651	252,146	276,214	656,047	716,967
--	9,006	166,956	173,439	360,892	388,144
--	61.5	66.2	62.8	55.0	54.1

GASOLINE

Analysis of Inventories ^{a/} and Storage Capacity As of September 30, 1969 (Thousands of Barrels)

BUREAU OF MINES REFINING DISTRICTS ^{b/}	Reported by Bureau of Mines	Reported to NPC		Unavailable in Column 2	
	(1)	Total (2)	Percent (3)	Total (4)	Percent (5)
East Coast	49,861	48,215	96.7	17,863	37.0
Appalachian					
District 1	5,231	5,451	104.2	2,430	44.6
District 2	3,341	3,352	100.3	1,149	34.3
Ind., Ill., Kentucky	31,144	30,715	98.6	12,551	40.9
Minn., Wisc., N. & S. Dak.	6,486	6,069	93.6	1,941	32.0
Okla., Kansas, Mo.	17,030	17,020	99.9	6,759	39.7
Texas Inland	6,740	6,559	97.3	2,741	41.8
Texas Gulf	23,858	21,029	88.1	6,084	28.9
Louisiana Gulf	13,787	13,580	98.5	4,249	31.3
North La., Arkansas	7,501	7,249	96.6	3,606	49.7
New Mexico	638	619	97.0	197	31.8
Other Rocky Mountain	5,507	4,748	86.2	2,218	46.7
 TOTAL U.S. Excluding West Coast, Alaska, & Hawaii	 171,124	 164,606	 96.2	 61,788	 37.5
West Coast, Alaska, Hawaii	22,818	22,586	99.0	7,064	31.3
 TOTAL U.S.	 193,942	 187,192	 96.5	 68,852	 36.8

^{a/} Includes inventories at refineries, terminals, pipelines, and in transit thereto.

^{b/} See map of Bureau of Mines refining districts (Appendix A).

^{c/} Total inventories excluding pipeline fill and in transit
(truck, tank car, barge, and tanker from domestic source).

TABLE VI

Available in Column 2 Total (6)	Percent (7)	Storage Capacity Reported to NPC (8)	Amount in Tanks <i>c/</i> (9)	Percent Full (10)
30,352	63.0	87,815	41,822	47.6
3,021	55.4	8,838	4,431	50.1
2,203	65.7	6,104	2,859	46.8
18,164	59.1	56,785	26,444	46.6
4,128	68.0	12,878	5,313	41.3
10,261	60.3	28,095	12,758	45.4
3,818	58.2	14,959	5,382	36.0
14,945	71.1	40,770	19,983	49.0
9,331	68.7	22,139	12,024	54.3
3,643	50.3	10,547	4,241	40.2
422	68.2	1,080	542	50.2
2,530	53.3	10,390	3,860	37.2
102,818	62.5	300,400	139,659	46.5
15,792	68.7	45,864	21,306	46.5
118,340	63.2	346,264	160,965	46.5

KEROSENE a/

Analysis of Inventories b/ and Storage Capacity As of September 30, 1969 (Thousands of Barrels)

BUREAU OF MINES REFINING DISTRICTS <u>c/</u>	Reported by Bureau of Mines	Reported to NPC		Unavailable in Column 2	
	(1)	Total (2)	Percent (3)	Total (4)	Percent (5)
East Coast	15,716	14,960	95.2	3,693	24.7
Appalachian					
District 1	1,035	933	90.1	257	27.5
District 2	486	583	120.0	113	19.4
Ind., Ill., Kentucky	8,409	8,223	97.8	2,071	25.2
Minn., Wisc., N. & S. Dak.	2,039	2,036	99.9	347	17.0
Okla., Kansas, Mo.	2,912	2,995	102.9	446	14.9
Texas Inland	1,235	1,161	94.0	307	26.4
Texas Gulf	7,632	6,666	87.3	714	10.7
Louisiana Gulf	2,920	2,787	95.4	424	15.2
North La., Arkansas	1,271	1,269	99.8	593	46.7
New Mexico	188	127	67.6	24	18.9
Other Rocky Mountain	939	1,078	114.8	264	24.5
TOTAL U.S.					
Excluding West Coast, Alaska, & Hawaii	44,782	42,818	95.6	9,253	21.6
West Coast, Alaska, Hawaii	5,140	5,124	99.7	1,801	35.1
TOTAL U.S.	49,922	47,942	96.0	11,054	23.1

a/ Including kerosene type jet fuel.

b/ Includes inventories at refineries, terminals, pipelines, and in transit thereto.

c/ See map of Bureau of Mines refining districts (Appendix A).

d/ Total inventories excluding pipeline fill and in transit
(truck, tank car, barge, and tanker from domestic source)

TABLE VII

Available in Column 2 Total (6)	Percent (7)	Storage Capacity Reported to NPC (8)	Amount in Tanks ^{d/} (9)	Percent Full (10)
11,267	75.3	26,180	13,939	53.2
676	72.5	1,575	801	50.9
470	80.6	1,074	567	52.8
6,152	74.8	12,918	7,692	59.5
1,689	83.0	2,802	1,879	67.1
2,549	85.1	3,998	2,797	70.0
854	73.6	1,719	1,026	59.7
5,954	89.3	10,903	6,559	60.2
2,363	84.8	6,390	2,743	42.9
676	53.3	1,681	722	43.0
103	81.1	198	114	57.6
814	75.5	1,880	1,017	54.1
33,565	78.4	71,318	39,856	55.9
3,323	64.9	8,520	4,878	57.3
36,888	76.9	79,838	44,734	56.0

JET FUEL ^{a/}

Analysis of Inventories ^{b/} and Storage Capacity As of September 30, 1969 (Thousands of Barrels)

BUREAU OF MINES REFINING DISTRICTS ^{c/}	Reported by Bureau of Mines	Reported to NPC		Unavailable in Column 2	
	(1)	Total (2)	Percent (3)	Total (4)	Percent (5)
East Coast	393	463	117.8	139	30.0
Appalachian					
District 1	75	135	180.0	69	51.1
District 2	76	76	100.0	14	18.4
Ind., Ill., Kentucky	928	811	87.4	174	21.5
Minn., Wisc., N. & S. Dak.	123	123	100.0	35	28.5
Okla., Kansas, Mo.	1,102	979	88.8	215	22.0
Texas Inland	486	537	110.5	41	7.6
Texas Gulf	2,122	1,678	79.1	150	8.9
Louisiana Gulf	1,191	1,024	86.0	28	2.7
North La., Arkansas	459	308	67.1	130	42.2
New Mexico	160	143	89.4	70	49.0
Other Rocky Mountain	288	260	90.3	102	39.2
TOTAL U.S. Excluding West Coast, Alaska, & Hawaii	7,403	6,537	88.3	1,167	17.9
West Coast, Alaska, Hawaii	1,448	3,047	210.4	366	12.0
TOTAL U.S.	8,851	9,584	108.3	1,533	16.0

^{a/} Naphtha-type only.

^{b/} Includes inventories at refineries, terminals, pipelines and in transit thereto.

^{c/} See map of Bureau of Mines refining districts (Appendix A).

^{d/} Total inventories excluding pipeline and in transit
(truck, tank car, barge, and tanker from domestic source).

TABLE VIII

Available in Column 2 Total (6)	Percent (7)	Storage Capacity Reported to NPC (8)	Amount in Tanks <u>d/</u> (9)	Percent Full (10)
324	70.0	1,209	462	38.2
66	48.9	121	75	62.0
62	81.6	92	67	72.8
634	78.5	1,750	753	43.0
88	71.5	165	111	67.3
764	78.0	1,529	864	56.5
496	92.4	943	537	56.9
1,528	91.1	2,924	1,678	57.4
996	97.3	1,430	1,023	71.5
178	57.8	359	188	52.4
73	51.0	230	108	47.0
158	60.8	448	206	46.0
5,370	82.1	11,200	6,072	54.2
2,681	88.0	3,451	2,934	85.0
8,051	84.0	14,651	9,006	61.5

DISTILLATE FUEL OIL

Analysis of Inventories a/ and Storage Capacity As of September 30, 1969 (Thousands of Barrels)

BUREAU OF MINES REFINING DISTRICTS <u>b/</u>	Reported by Bureau of Mines (1)	Reported to NPC		Unavailable in Column 2	
		Total (2)	Percent (3)	Total (4)	Percent (5)
East Coast	84,785	78,239	92.3	13,034	16.7
Appalachian					
District 1	3,919	4,111	104.9	885	20.8
District 2	2,257	2,195	97.3	275	12.5
Ind., Ill., Kentucky	30,755	29,987	97.5	5,216	17.4
Minn., Wisc., N. & S. Dak.	9,618	9,116	94.8	2,191	24.0
Okla., Kansas, Mo.	12,651	12,489	98.7	4,373	35.0
Texas Inland	1,862	1,776	95.4	345	19.4
Texas Gulf	21,817	18,665	85.6	2,895	15.5
Louisiana Gulf	8,765	8,607	98.2	1,018	11.8
North La., Arkansas	4,050	3,908	96.5	1,797	46.0
New Mexico	316	255	80.7	132	51.8
Other Rocky Mountain	3,279	2,681	81.8	674	25.1
TOTAL U.S. Excluding West Coast, Alaska, & Hawaii	184,074	172,029	93.5	32,835	19.1
West Coast, Alaska, Hawaii	13,531	13,401	99.0	2,767	20.6
TOTAL U.S.	197,605	185,430	93.8	35,602	19.2

a/ Includes inventories at refineries, terminals, pipelines, and in transit thereto.
Excludes distillate component of jet fuels, and middle distillate cracking stock
(classified as an unfinished oil by Bureau of Mines)

b/ See map of Bureau of Mines refining districts (Appendix A).

c/ Total inventories excluding pipeline fill and in transit
(truck, tank car, barge, and tanker from domestic source).

TABLE IX

Available in Column 2 Total (6)	Percent (7)	Storage Capacity Reported to NPC (8)	Amount in Tanks ^{a/} (9)	Percent Full (10)
64,205	83.3	104,548	74,124	70.9
3,226	79.2	6,084	3,768	61.9
1,920	87.5	3,632	2,141	58.9
24,771	82.6	45,134	29,000	64.3
6,925	76.0	13,823	7,675	55.5
8,116	65.0	20,060	10,148	50.6
1,431	80.6	3,914	1,720	43.9
15,770	84.5	31,975	18,543	58.0
7,589	88.2	13,865	8,353	60.2
2,111	54.0	4,309	2,317	53.8
123	48.2	358	175	48.9
2,007	74.9	5,092	2,393	47.0
139,194	80.9	252,794	160,357	63.4
10,634	79.4	23,420	13,082	55.9
149,828	80.8	276,214	173,439	62.8

PART FOUR

RESIDUAL FUEL OIL
Summary of Findings

PART FOUR

RESIDUAL FUEL OIL - Summary of Findings

Table X sets forth comparisons representing the United States totals for items included as residual fuel oil in this survey.

Comparisons for residual fuel oil stocks for the 21-year period 1948-1969 are shown in Table XI.

Table XII shows all of the information included in Table X, broken down by Bureau of Mines Refining Districts.

Total inventories of residual fuel oil, as reported in the NPC survey, increased 5 million barrels (9.7%) between September 30, 1962, and September 30, 1969. It is interesting to note that the total "unavailable" inventory decreased 1.47 million barrels in this 7-year period, giving an increase of 6.53 million barrels in total "available" inventories.

The 1959 and 1963 NPC surveys originally included some 2 million barrels of "pitch" classified as residual. This material has been excluded from the 1970 report covering all three years to correspond to the Bureau of Mines reporting procedures.

TABLE X

RESIDUAL FUEL OILSummary of Inventories and Storage Capacity
(Thousands of Barrels)

	<u>1962</u> (September)	<u>1969</u> (September 30)
1. <u>TOTAL INVENTORIES:</u>		
Reported by Bureau of Mines	53,524 <u>a/</u>	63,592 <u>b/</u>
Reported to NPC	51,571 <u>a/</u>	56,634 <u>b/</u>
NPC Survey Represents (Percent)	96.4	89.1
2. <u>TOTAL UNAVAILABLE:</u>	10,649 <u>a/</u>	9,183
As Percent of Inventories Reported to NPC	20.6	16.2
3. <u>AVAILABLE FOR CURRENT SHIPMENT OR HELD AS SEASONAL DEMAND:</u>	40,922	47,451 <u>b/</u>
As Percent of Inventories Reported to NPC	79.4	83.8
4. <u>STORAGE CAPACITY:</u>	97,870 <u>c/</u>	97,715 <u>d/</u>
5. <u>AMOUNT IN TANKS:</u>	52,959	55,970
Percent Full	54.1	57.3

a/ Excludes 2,151,000 barrels of "pitch" reported for the Texas Inland District. This material subsequently dropped in Bureau of Mines reporting procedure after September 30, 1969.

b/ Excludes 2,001,000 barrels of "pitch" reported for the Texas Inland District.

c/ Includes about 26,500,000 barrels of reservoir storage in District V (California).

d/ Includes about 24,717,000 barrels of reservoir storage in District V (California) and 70,000 barrels in District IV (Rocky Mountain).

TABLE XI

Analysis of Residual Fuel Oil Inventories (1948-1969)
(Thousands of Barrels)

	March 31 1948	June 30 1950	March 31 1952	March 31 1954	March 31 1957	Sept. 30 1962	Sept. 30 1969
1. <u>TOTAL INVENTORIES HELD BY REPORTING COMPANIES:</u>	41,297	40,570	37,856	42,705	35,564 _{a/}	51,571 _{b/}	56,634 _{c/}
2. <u>UNAVAILABLE INVENTORIES:</u>							
Tank Bottoms	6,965	6,252	5,715	5,261	4,259	3,555	3,838
Unfinished at Refineries	4,112	1,148	1,515	1,529	1,365	_{d/}	_{d/}
Refinery Lines & Operating Equipment	602	534	603	569	382	1,076	111
One-Half Average Size Water Cargo Receipt	2,532	2,491	2,875	2,582	2,519	2,923	3,045
Other Unavailable Inventories	3,225	3,155	3,577	3,294	3,264 _{a/}	2,046 _{b/}	1,354
Pipeline Fill	123	121	108	94	74	44	49
Pipeline Operating Requirements In Transit--Truck, Tank Car, Barge & Tanker from Domestic Source	2,008	1,313	569	573	302	285	171
	<u>1,235</u>	<u>1,218</u>	<u>875</u>	<u>500</u>	<u>580</u>	<u>720</u>	<u>615</u>
3. <u>TOTAL UNAVAILABLE INVENTORIES:</u>	20,802	16,232	15,837	14,402	12,745 _{a/}	10,649 _{b/}	9,183
4. <u>UNAVAILABLE AS PERCENT OF TOTAL REPORTED TO NPC:</u>	50.4	40.0	41.8	33.7	35.8	20.6	16.2
5. <u>TOTAL AVAILABLE INVENTORIES:</u>	20,495	24,338	22,019	28,303	22,819	40,922	47,451 _{c/}

_{a/} Excludes 1,200,000 barrels of "pitch" in Texas Inland District.

_{b/} Excludes 2,151,000 barrels of "pitch" in Texas Inland District.

_{c/} Excludes 2,001,000 barrels of "pitch" in Texas Inland District.

_{d/} Unfinished at refineries has been omitted because of a change in Bureau of Mines method of reporting effective January 1, 1962.

RESIDUAL FUEL OIL

Analysis of Inventories ^{a/} and Storage Capacity As of September 30, 1969 (Thousands of Barrels)

BUREAU OF MINES REFINING DISTRICTS ^{b/}	Reported by Bureau of Mines	Reported to NPC Total	Percent	Unavailable in Column 2 Total	Percent
	(1)	(2)	(3)	(4)	(5)
East Coast	22,585	16,889	74.8	4,672	27.7
Appalachian					
District 1	358	337	94.1	33	9.8
District 2	122	136	111.5	31	22.8
Ind., Ill., Kentucky	5,737	5,548	96.7	1,401	25.3
Minn., Wisc., N. & S. Dak.	757	765	101.1	111	14.5
Okla., Kansas, Mo.	918	943	102.7	207	22.0
Texas Inland	185 ^{d/}	230 ^{d/}	124.3	29	12.6
Texas Gulf	4,130	3,721	90.1	514	13.8
Louisiana Gulf	1,478	1,348	91.2	128	9.5
North La., Arkansas	130	105	80.8	11	10.5
New Mexico	18	134	744.4	2	0.2
Other Rocky Mountain	607	491	80.9	54	11.0
TOTAL U.S. Excluding West Coast, Alaska, & Hawaii	37,025 ^{d/}	30,647 ^{d/}	82.8	7,193	22.0
West Coast, Alaska, Hawaii	26,567	25,987	97.8	1,990	7.7
TOTAL U.S.	63,592 ^{d/}	56,634 ^{d/}	89.1	9,183	16.2

^{a/} Includes inventories at refineries, terminals, pipelines, and in transit thereto.
Excludes heavy residual cracking stock that Bureau of Mines classifies as an unfinished oil.

^{b/} See map of Bureau of Mines refining districts (Appendix A).

^{c/} Total crude oil inventories excluding pipeline fill and in transit (truck, tank car, barge, and tanker from domestic source).

^{d/} Excludes 2,001,000 barrels of "pitch" reported for Texas Inland District.

^{e/} Includes about 24,717,000 barrels of reservoir storage capacity in PAD District V (California) and 70,000 barrels in PAD District IV (Rocky Mountain).

TABLE XII

Available in Column 2 Total (6)	Percent (7)	Storage Capacity Reported to NPC (8)	Amount in Tanks <u>e/</u> (9)	Percent Full (10)
12,217	72.3	28,173	16,299	57.9
304	90.2	778	333	42.8
105	77.2	323	136	42.1
4,147	74.7	8,821	5,517	62.5
654	85.5	1,630	765	46.9
736	78.0	2,139	934	43.7
201 <u>e/</u>	87.4	484	230	47.5
3,207	86.2	7,003	3,721	53.1
1,220	90.5	2,493	1,348	54.1
94	89.5	379	104	27.4
132	99.8	420	134	31.9
437	89.0	1,258	490	39.0
23,454 <u>d/</u>	78.0	53,901	30,011	55.7
23,997	92.3	43,814 <u>e/</u>	25,959	59.2
47,451 <u>d/</u>	83.8	97,715 <u>e/</u>	55,970	57.3

PART FIVE

PUERTO RICO
Summary of Findings

PART FIVE

PUERTO RICO - Summary of Findings

The U.S. Bureau of Mines does not collect petroleum inventory data for Puerto Rico. In a national emergency, however, the Emergency Petroleum and Gas Administration would assume directional control of crude and product supply in Puerto Rico. Therefore, in 1970, the NPC survey covered this area for the first time. The results are shown in Table XIII. These data are not included in Tables I-XII which cover only the 50 States.

TABLE XIII

SUMMARY OF INVENTORY AVAILABILITY & TANKAGE CAPACITY
PUERTO RICO

(Thousands of Barrels)

	Inventories			Tankage Capacity		
	Total Reported to N.P.C.	Percent Unavailable	Percent Available	At Refineries	At Bulk Terminals	Total
	(As of Sept. 30, 1969)			(As of Sept. 30, 1969)		
<u>CRUDE OIL</u>	1,025	20.1	79.9	1,764	---	1,764
<u>CLEAN PRODUCTS</u>						
Gasoline	1,389	20.4	79.6	1,982	248	2,230
Kerosine	193	13.0	87.0	139	227	366
Jet Fuel	295	10.2	89.8	245	---	245
Distillate Fuel Oil	547	11.0	89.0	1,030	221	1,251
<u>TOTAL CLEAN PRODUCTS</u>	2,424	25.0	75.0	3,396	696	4,092
<u>RESIDUAL FUEL OIL</u>	359	14.8	85.2	829	161	990

APPENDICES

- A. Study Request Letter
- B. Main Committee Membership
- C. Technical Subcommittee Membership
- D. (1) General Instructions
 - (2) Maps showing Bureau of Mines Refining Districts and Petroleum Administration for Defense Districts
 - (3) Sample Questionnaires showing Summary Results of Data Reported by Participating Companies

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

C
O
P
Y

April 12, 1969

Dear Mr. Abernathy:

The Petroleum Council has periodically prepared reports on availability of petroleum inventories and storage capacity. Such reports were prepared in 1948, 1950, 1952, 1957 and 1963. Thus, it has been about six years since the last report on this subject.

Published statistics on petroleum inventories are on a total inventory basis which includes inventories in pipeline fill, working stocks in refineries and pipeline terminals, tank bottoms and other similar inventories which are not available for use. Past reports by the National Petroleum Council have indicated a considerable change over the years in the proportion of total inventories which are readily available for use. Since the last report by the NPC there have been a number of large pipelines constructed including Colonial Pipeline and Capline. A current report on the availability of petroleum inventories and storage capacity is important to the Government especially in relation to emergency preparedness. This information will also be of value to the petroleum industry.

Therefore, it is requested that the National Petroleum Council create a committee to prepare a new report on available petroleum inventories. In view of Executive Order 11007 of February 26, 1962 which provides that industry advisory committees shall not discuss data showing current operations of identifiable business enterprises, we request that data used be about six months old. We do not believe this will materially effect the value of the report. The Office of Oil and Gas will supply further information, if desired, on the scope and details on the requested study.

Sincerely yours,

/s/ HOLLIS M. DOLE

Assistant Secretary of the Interior

Mr. Jack H. Abernathy
Chairman
National Petroleum Council
1625 K Street, N.W.
Washington, D.C. 20006

NATIONAL PETROLEUM COUNCIL
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Wilton E. Scott, President
Tenneco Oil Company

Forrest N. Shumway, President
The Signal Companies, Inc.

Wm. F. Kenny, Jr.
President
Meenan Oil Company, Inc.

Paul E. Taliaferro
Deputy Chairman
Sun Oil Company

Charles H. Murphy, Jr.
President
Murphy Oil Corporation

Everett F. Wells
Chairman of the Executive
Committee
Ashland Oil, Inc.

Glenn E. Nielson
Chairman of the Board
Husky Oil Company

John H. Williams, President
Williams Brothers Company

TECHNICAL SUBCOMMITTEE
OF THE
NATIONAL PETROLEUM COUNCIL'S
COMMITTEE ON PETROLEUM STORAGE CAPACITY

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Transportation Department
The Standard Oil Company (Ohio)

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U.S. Department of the Interior

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Meenan Oil Company, Inc.

T. A. Kirkley
General Manager
Supply Department
Humble Oil & Refining Company

James W. Winfrey
Production Department
Humble Oil & Refining Company

APPENDIX D

General Instructions Sent With Questionnaire Forms, Including Map of Bureau of Mines Districts and Petroleum Administration for Defense Districts (pages 43 to 47).

U.S. (Excluding West Coast, Alaska and Hawaii) - Total Fixed Unavailable Stocks of Crude Oil and Capacity of Crude Oil Tankage as of September 30, 1969 (p. 49).

U.S. (Excluding West Coast, Alaska and Hawaii) - Total Fixed Unavailable Stocks of Principal Refined Products as of September 30, 1969 (p. 50).

U.S. (Excluding West Coast, Alaska and Hawaii) - Capacity of Principal Refined Products Tankage as of September 30, 1969 (p. 51).

Total Fixed Unavailable Stocks of Crude Oil and Principal Refined Products as of September 30, 1969 (p. 52).

(p. 52 continued and) Capacity of Crude Oil and Principal Refined Products Tankage as of September 30, 1969 (p. 53).

NATIONAL PETROLEUM COUNCIL
COMMITTEE ON PETROLEUM STORAGE CAPACITY (1969)
REPORT ON UNAVAILABLE STOCKS
AS OF SEPTEMBER 30, 1969

GENERAL INSTRUCTIONS

(1) The basis of the accompanying questionnaires is the inventory information that you reported to the Bureau of Mines as of September 30, 1969.

The categories of stocks to be reported are only those at locations that you currently include in your regular monthly reports to the Bureau of Mines. Tankage and inventories at other locations are not to be considered. The questionnaires being sent to companies in the West Coast area go into more detail, since that is necessary there. An effort has been made to outline the questionnaires in such form as to permit the final derivation of figures indicating how much crude oil and products in storage are actually unavailable or necessary to the continuous operation of the industry's facilities. No effort is being made to measure seasonal requirements. Actual figures on inventories are requested only because it is thought desirable to have a known tie-in to some previously reported actual figure of stocks and also to assist you in remaining within the scope of the definitions pertaining to these questionnaires. No individual company figures will be published as such in the final report. District totals only will be used.

Different questionnaires for the U.S. (Excluding West Coast) and for the West Coast are being used because inventory figures are reported somewhat differently in the West Coast. If you receive U.S. (Excluding West Coast) forms only (Questionnaires Nos. 1-3), but carry on operations in the West Coast, please request West Coast forms (Questionnaires Nos. 4 and 5) from Maxwell S. McKnight, National Petroleum Council, 1625 K Street, N. W., Washington, D.C. 20006.

(2) In the case of all jointly owned tankage, the inventories and storage capacity for such tankage should be reported by the operating company (or custodian).

(3) It will be noticed on the questionnaires that the Bureau of Mines Appalachian refining area is broken up into District 1 and 2 portions. The same applies to the Bureau's Rocky Mountain refining area, which asks for New Mexico separately. The lines of separation are shown on the attached map, which also defines the Gulf Coastal and other Bureau of Mines refining areas. The Appalachian and Rocky Mountain separations are requested so that the figures may finally be compiled into the general supply and demand areas of the country. These, you will notice on the map, are also keyed to the five general supply and demand districts formerly in use by the Petroleum Administration for War, and by the Petroleum Administration for Defense. Detailed definitions of all Refining Districts appear on the reverse side of the maps.

Also please note that data in respect to Hawaii and Alaska should be shown separately from other West Coast information on the West Coast forms.

(4) Refinery process tankage should not be included as capacity in filling in Questionnaires #3 and #5, Capacity of Tankage.

INSTRUCTIONS WITH RESPECT TO CRUDE OIL

Item #1 of the Crude Oil Section of the questionnaire asks that you fill in there the crude oil inventory information you reported on September 30, 1969 to the Bureau of Mines in Section A of Form 6-1311-M.

Items #1a & b - "Oil content of tank bottoms and in refinery pipelines" and "the minimum quantity required to assure continuous processing, handling and blending various grades of crude" - are self-explanatory.

Item #1c - "Unavailable in transit." This should include all unavailable quantities in transit by truck, tank car, barge or tanker from domestic sources only. However, these should be claimed as an unavailable allowance only if you report such in-transit items to the Bureau of Mines and therefore only if the quantities are included in the figures that you reported as of September 30, 1969.

Foreign oil actually in storage, excluding bonded storage, should be considered as part of your inventories, but do not include crude oil in transit from foreign sources. This is for the reason that such material in transit from foreign areas is not included in your inventory reports to the Bureau of Mines until actually in unbonded storage on shore.

Item # 2 of the Crude Oil Section of the questionnaire is from Section B of Form 6-1311-M.

Item # 2a - "Pipeline fill" is self-explanatory.

Item #2b - Include only that amount in the tanks which is an integral part of the pipeline system and which is the absolute minimum necessary to assure continuous operation of the lines and below which you would get into operating difficulties. For the purpose of this survey, this allowance should not include any given number of days supply backing up refineries.

Item #2c - Crude oil in tank farms or terminal storage points (other than tanks determined to be a part of the pipeline system) should be considered as available, except for the tank-bottom allowances.

Lines pertaining to total unavailable and available are self-explanatory.

It will be noticed that for the purpose of this survey no information is asked for on Producers' (lease) stocks, which is Section C of Form 6-1311-M. This is because the total of these stocks as reported by the Bureau of Mines will be considered as unavailable.

INSTRUCTIONS WITH RESPECT TO THE PRINCIPAL REFINED PRODUCTS

Item #1 of the Principal Refined Products Sections should come from the aggregate of stocks of the products as shown on Forms 6-1300-M, 6-1302-M and 6-1303-M. Products at terminal storage locations (other than tanks determined to be a part of the pipeline system) should be considered as available except for the tank-bottom allowance.

Item # 2 - "Memo: Total tankage capacity in respective product service" - copy from Questionnaire #3 or #5, as appropriate.

Item #3a - Tank-bottom allowances of tankage capacity should be reported as you carry them on your own inventory statements.

Item #3b - "In refinery lines and refinery operating equipment" is self-explanatory.

Item #3c - "One-half of the average size of water cargo receipts." Each individual product and grade of product received at refineries or terminals should be calculated separately and the results totaled. For instance, Company A might have a refinery at Philadelphia and terminals at Providence, Baltimore and New York. The refinery receives unfinished gasoline for blending shipped from another district in tankers of, say, 100,000 barrels average capacity. The Baltimore terminal receives in vessels of 20,000 barrels average capacity; Providence, 30,000 barrels; and New York, 10,000 barrels. These figures total 160,000 barrels. That company should take credit for one-half of this total, or 80,000 barrels as representing one-half of the average size of the cargo usually delivered to each location and should consider each grade of product separately. This has nothing to do with the quantities in transit. The one-half average-size cargo was determined as such because a water receipt usually comes at a time when stock of a given product is at or near its low point. After the receipt of that cargo, that product stock is probably at its normal high point. An average between these two levels is the probable average condition of inventories of that individual product as affected by in-transit receipts. Actually an individual location may operate at an average level higher or lower than this theoretical mid-point but it is thought that an overall mid-point average of all locations would be a fair unavailable allowance for the inventories such locations must have on hand because of the size of the deliveries to them.

Item #3d - "Other Unavailable Stocks." This might, for example, in the case of residual fuel oil, include quantities definitely set aside as plant fuel or pipeline prime mover fuel.

"Unavailable unblended finished" should represent only that portion which would be left over were the different finished components to be blended as far as possible in accordance with existing formulas. For instance, a company might actually and physically have a large quantity of unblended gasoline in five components, each part itself finished.

The total quantity should not be considered unavailable but only that which would be left over after blending as far as possible to specifications.

Item #3e - "Pipeline fill" is self-explanatory.

Item #3f - Include only that amount in the tanks which is an integral part of the pipeline system and which is the absolute minimum necessary to assure continuous operation of the lines and below which you would get into operating difficulties. For the purpose of this survey this allowance should not include any given number of days supply backing up refineries.

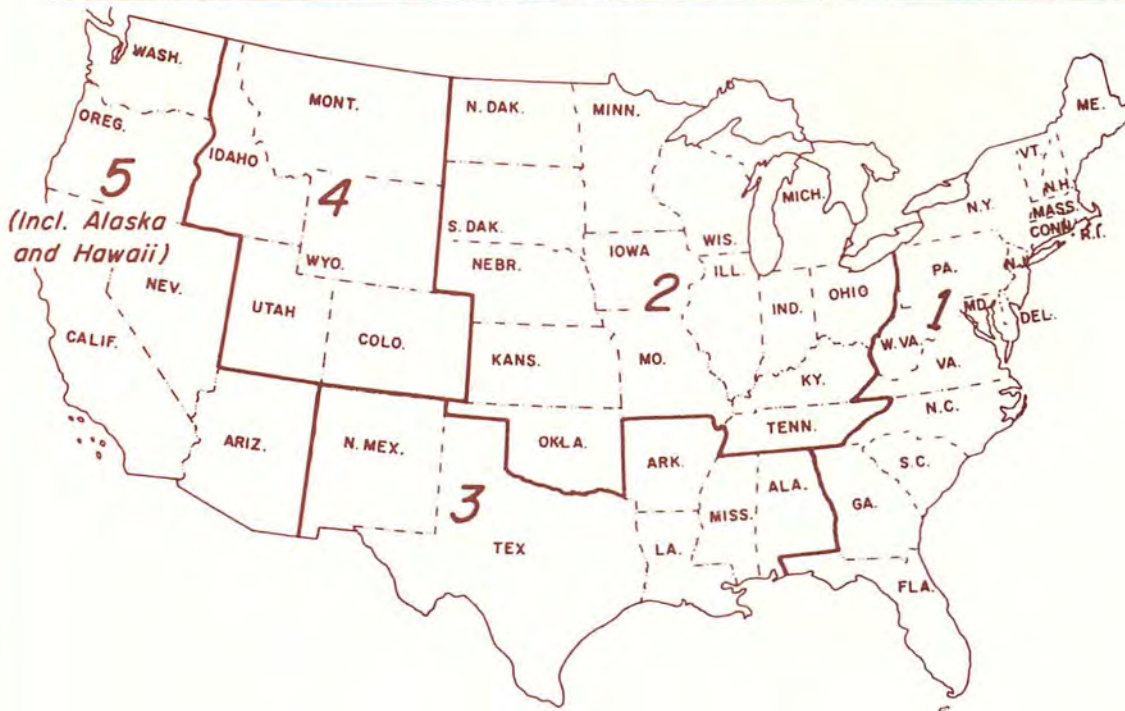
Item #3g - "Unavailable in transit." This should include all unavailable quantities in transit by truck, tank car, barge or tanker from domestic sources only, but these should be claimed as an unavailable allowance only if you report such in-transit items to the Bureau of Mines, and therefore only if the quantities are included in the figures that you reported as of September 30, 1969.

Foreign oil actually in storage, excluding bonded storage, should be considered as part of your inventories but do not include products in transit from foreign sources. This is for the reason that such material in transit from foreign areas is not included in your inventory reports to the Bureau of Mines until actually in unbonded storage on shore.

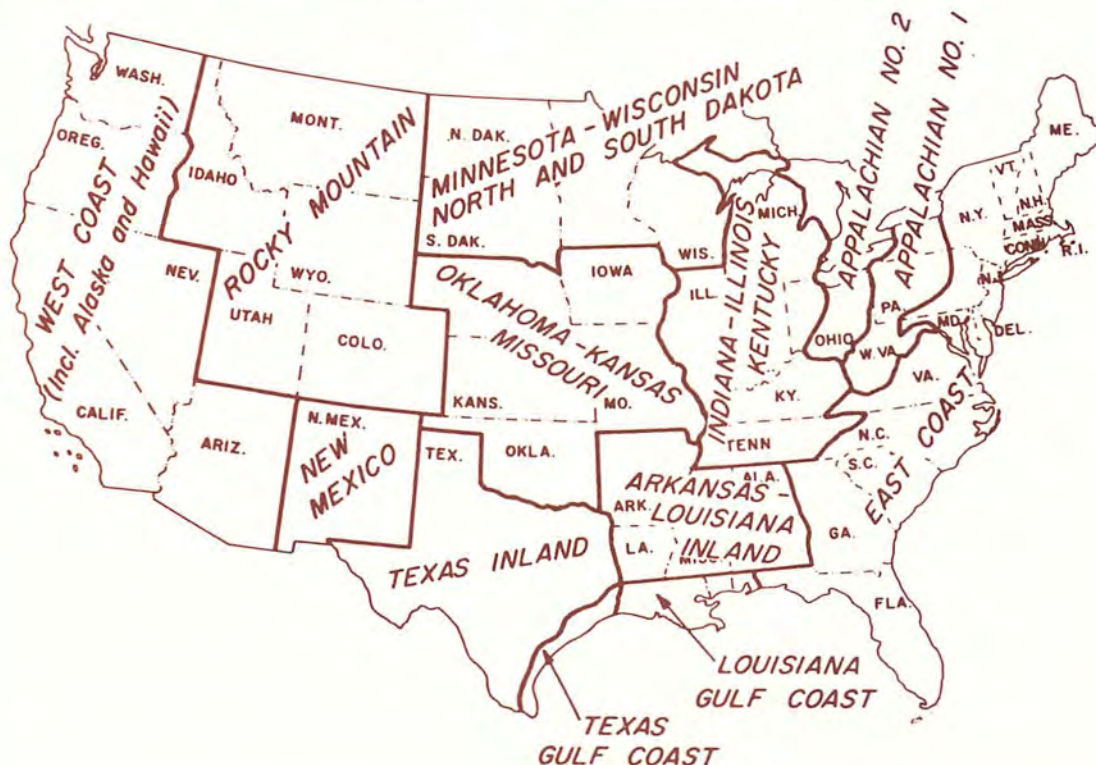
Total Available - Difference between Line 1 and Total Unavailable.

Note: With respect to Jet Fuel, as reported on Bureau of Mines Forms 6-1300-M, 6-1302-M, 6-1303-M, and 6-1320-M(B-1), please combine the kerosine-type jet fuel data with the kerosine data and report in the columns provided for kerosine. Show only naphtha-type jet fuel data in the columns provided for jet fuel.

PETROLEUM ADMINISTRATION FOR DEFENSE (PAD) DISTRICTS



BUREAU OF MINES REFINING DISTRICTS



BUREAU OF MINES PETROLEUM REFINING DISTRICTS AND PAD DISTRICTS

PAD District	Refining District
I	<p><u>EAST COAST</u> - District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung and all counties east and north thereof. Also the following Counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.</p> <p><u>APPALACHIAN #1</u> - The State of West Virginia, those parts of the States of Pennsylvania and New York not included in the East Coast District.</p>
II	<p><u>APPALACHIAN #2</u> - The following Counties of the State of Ohio: Erie, Huron, Crawford, Marion, Delaware, Franklin, Pickaway, Ross, Pike, Scioto, and all counties east thereof.</p> <p><u>INDIANA - ILLINOIS - KENTUCKY</u> - The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and that part of the State of Ohio not included in the Appalachian District.</p> <p><u>MINNESOTA - WISCONSIN - NORTH AND SOUTH DAKOTA</u> - The States of Minnesota, Wisconsin, North Dakota, and South Dakota.</p> <p><u>OKLAHOMA - KANSAS - MISSOURI</u> - The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.</p>
III	<p><u>TEXAS INLAND</u> - The State of Texas except the Texas Gulf Coast District.</p> <p><u>TEXAS GULF COAST</u> - The following Counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Particio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.</p> <p><u>LOUISIANA GULF COAST</u> - The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, W. Feliciana, E. Feliciana, Tangipahoa, Washington, and all parishes south thereof. Also the following Counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following Counties of the State of Alabama: Mobile and Baldwin.</p> <p><u>NORTH LOUISIANA - ARKANSAS</u> - The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.</p> <p><u>NEW MEXICO</u> - The State of New Mexico.</p>
IV	<u>ROCKY MOUNTAIN</u> - The States of Montana, Idaho, Wyoming, Utah, and Colorado.
V	<u>WEST COAST</u> - The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

NATIONAL PETROLEUM COUNCIL'S 1969 SURVEY OF PETROLEUM STORAGE CAPACITY AND INVENTORY AVAILABILITY

U.S. (EXCLUDING WEST COAST, ALASKA AND HAWAII)
TOTAL FIXED UNAVAILABLE STOCKS OF CRUDE OIL AND
CAPACITY OF CRUDE OIL TANKAGE AS OF SEPTEMBER 30, 1969

	East Coast	Appalachian		Indiana, Illinois, Kentucky, etc.	Minn., Wisc., No. Dak. and So. Dak.	Oklahoma, Kansas, Missouri, etc.	Texas Inland	Texas Gulf	Louisiana Gulf	Arkansas, Louisiana Inland, etc.	New Mexico	Rocky Mountain	Total U. S. (Excluding West Coast Alaska & Hawaii)
		District 1	District 2										
CRUDE OIL STOCKS													
Figures should include only those categories of stocks regularly reported to the Bureau of Mines. Include foreign oil actually in storage but not crude in transit from foreign sources.													
(Report all figures in Thousands of Barrels)													
1. Fill in here the amount of crude oil stocks you reported to the Bureau of Mines as of September 30, 1969 as at refineries or in transit thereto from domestic sources — Form 6-1311-M, Section A.	14,714	820	216	9,245	1,984	4,566	925	14,101	4,492	1,488	141	1,511	54,203
(a) Of the above quantity, how much was unavailable — such as oil content of tank bottoms and in refinery pipelines.	1,879	107	8	1,514	229	497	143	1,734	1,039	429	9	240	7,828
(b) The minimum quantity required to assure continuous processing, handling and blending various grades of crude.	6,766	377	189	5,010	755	1,583	469	7,455	2,230	514	74	740	26,162
(c) In transit to refineries by truck, tank car, barge or tanker from domestic sources.	3,364	0	0	292	0	0	1	845	245	26	0	0	4,773
Total Unavailable Crude at refineries and in transit thereto. (Sum of Item 1(a), (b) and (c) above.)	12,009	484	197	6,816	984	2,080	613	10,034	3,514	969	83	980	38,763
Total Available Refinery	2,705	336	19	2,429	1,000	2,486	312	4,067	978	519	58	531	15,440
2. Fill in here amount you reported to the Bureau of Mines as pipeline and tank-farm stocks of crude. Form 6-1311-M, Section B, as of September 30, 1969.	215	2,262	711	25,374	1,699	28,394	45,001	18,968	9,686	6,651	2,398	8,812	150,171
(a) Of the above quantity, how much was unavailable as pipeline fill.	31	483	327	8,927	1,041	12,876	16,423	3,532	4,086	4,625	1,251	3,886	57,488
(b) The minimum quantity required in tankage to assure continuous operation of pipelines. (This should reflect the absolute minimum below which you would get into operating difficulties.)	25	696	202	7,235	311	8,827	15,477	6,912	3,196	829	803	2,478	46,991
(c) Oil content of bottoms of tank-farm tanks if you include same in your reports to the Bureau of Mines.	0	95	0	312	179	797	1,216	98	313	54	73	367	3,504
Total Unavailable Crude in pipeline and tank-farm stocks. (Sum of Item 2(a), (b) and (c) above.)	56	1,274	529	16,474	1,531	22,500	33,116	10,542	7,595	5,508	2,127	6,731	107,983
Total Available Pipeline and tank farm.	159	988	182	8,900	168	5,894	11,885	8,426	2,091	1,143	271	2,081	42,188
NOTE: For the purpose of this survey Producers' (lease) stocks, Form 6-1311-M, Section C, will be considered as completely unavailable.													
CRUDE OIL TANKAGE													
Report all tankage available for storing crude oil as shown below, but deal only with the tankage that is located at the points (refineries, pipelines, tank farms and terminals) included in the stock figures you regularly report to the Bureau of Mines on Form 6-1311-M (except Producers' (lease) stocks). Do not include tankage at bulk plants, service stations, etc., the inventories of which you do not report to the Bureau of Mines. See NOTE (A).													
(Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries — Form 6-1311-M, Section A — as of September 30, 1969.	21,463	1,128	411	15,343	2,880	7,160	1,704	26,564	8,546	2,320	419	3,300	91,238
2. Capacity of tankage along pipelines and on tank farms—Form 6-1311-M, Section B.	246	2,069	566	28,001	1,363	40,690	65,360	34,439	12,106	4,906	3,408	16,981	210,135
3. Total Crude Oil Tankage Capacity. (Sum of Items 1 and 2 above.)	21,709	3,197	977	43,344	4,243	47,850	67,064	61,003	20,652	7,226	3,827	20,281	301,373
NOTE: Do not report tankage involved in Producers' (lease) stocks—Form 6-1311-M, Section C.													
NOTE (A): The figures to be shown here are NOT the actual stocks previously reported as of September 30, 1969, but the TOTAL TANKAGE CAPACITY assigned to those stocks and corresponding to the actual categories reported in the columns indicated.													

SPECIAL NOTICE: Please read again applicable items of enclosed Instructions before filling in these forms.

A separate Questionnaire Form will be used for companies reporting for West Coast, Alaska and Hawaii.

QUESTIONNAIRE FORM #2

CODE NO. SUMMARY

NATIONAL PETROLEUM COUNCIL'S 1969 SURVEY OF PETROLEUM
STORAGE CAPACITY AND INVENTORY AVAILABILITYU.S. (EXCLUDING WEST COAST, ALASKA AND HAWAII) - TOTAL FIXED UNAVAILABLE
STOCKS OF PRINCIPAL REFINED PRODUCTS AS OF SEPTEMBER 30, 1969(Figures should include only those categories of stocks regularly reported to the Bureau of Mines.
Include foreign oil actually in storage but not products in transit from foreign sources.)

	East Coast	Appalachian		Indiana, Illinois, Kentucky, etc.	Minn., Wisc., No. Dak. and So. Dak.	Oklahoma, Kansas, Missouri, etc.	Texas Inland	Texas Gulf	Louisiana Gulf	Arkansas, Louisiana Inland, etc.	New Mexico	Rocky Mountain	Total U. S. (Excluding West Coast Alaska & Hawaii)
		District 1	District 2										
GASOLINE (Motor and Aviation) Deal only with those inventories regularly reported to the Bureau of Mines on Forms 6-1300-M, 6-1302-M and 6-1303-M. (Report all figures in Thousands of Barrels)													
1. Fill in here aggregate amount of stocks you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Forms 6-1300-M, 6-1302-M and 6-1303-M.	48,215	5,451	3,352	30,715	6,069	17,020	6,559	21,029	13,580	7,249	619	4,748	164,606
2. Memo: Total Gasoline Tankage Capacity. (Copy from Questionnaire 3.)	87,815	8,838	6,104	56,785	12,878	28,095	14,959	40,770	22,139	10,547	1,080	10,390	300,400
3. Analysis of Unavailable Stocks included in Item 1 above:													
(a) Credit tank bottoms as you carry them in your own inventory statements.	4,000	381	246	3,683	635	1,376	1,027	2,174	1,328	353	42	548	15,793
(b) In refinery lines and refinery operating equipment.	63	3	3	64	4	66	21	74	18	5	1	35	357
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)	4,710	417	52	1,265	362	343	0	116	162	56	26	0	7,509
(d) Other Unavailable Stocks. (Include filter house naphtha and unavailable unblended finished.) (See instructions.)	717	228	22	1,407	82	230	51	1,503	383	35	18	398	5,074
(e) Pipeline fill.	4,936	461	463	3,160	728	4,223	1,177	1,046	1,517	2,950	77	886	21,624
(f) Pipeline operating requirements.	1,980	381	333	1,861	102	484	465	1,171	802	149	33	349	8,108
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (include only if you report these to the Bureau of Mines).	1,457	559	30	1,111	28	39	0	0	39	58	0	2	3,323
Total Unavailable Gasoline. (Sum of (a) to (g) above.)	17,863	2,430	1,149	12,551	1,941	6,759	2,741	6,084	4,249	3,606	197	2,218	61,788
Total Available Gasoline.	30,352	3,021	2,203	18,164	4,128	10,261	3,818	14,945	9,331	3,643	422	2,530	102,818
KEROSENE (Include kerosene-type jet fuel) Deal only with those inventories regularly reported to the Bureau of Mines on Forms 6-1300-M, 6-1302-M and 6-1303-M. (Report all figures in Thousands of Barrels)													
1. Fill in here aggregate amount of stocks you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Forms 6-1300-M, 6-1302-M and 6-1303-M.	14,960	933	583	8,223	2,036	2,995	1,161	6,666	2,787	1,269	127	1,078	42,818
2. Memo: Total Kerosene Tankage Capacity. (Copy from Questionnaire 3.)	26,180	1,575	1,074	12,918	2,802	3,998	1,719	10,903	6,390	1,681	198	1,880	71,318
3. Analysis of Unavailable Stocks included in Item 1 above:													
(a) Credit tank bottoms as you carry them in your own inventory statements.	937	55	45	807	81	121	80	344	194	34	7	127	2,832
(b) In refinery lines and refinery operating equipment.	54	1	1	15	1	4	1	16	4	0	0	1	98
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)	1,250	21	1	135	57	18	0	5	28	5	0	0	1,520
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)	41	10	21	13	0	10	0	13	14	0	4	4	130
(e) Pipeline fill.	664	15	12	260	104	198	135	107	33	547	13	61	2,149
(f) Pipeline operating requirements.	390	38	29	570	51	95	91	229	140	7	0	71	1,711
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (include only if you report these to the Bureau of Mines).	357	117	4	271	53	0	0	0	11	0	0	0	813
Total Unavailable Kerosene. (Sum of (a) to (g) above.)	3,693	257	113	2,071	347	446	307	714	424	593	24	264	9,253
Total Available Kerosene.	11,267	676	470	6,152	1,689	2,549	854	5,952	2,363	676	103	814	33,565
JET FUEL (Include naphtha-type jet fuel only) Deal only with those inventories regularly reported to the Bureau of Mines on Forms 6-1300-M, 6-1302-M and 6-1303-M. (Report all figures in Thousands of Barrels)													
1. Fill in here aggregate amount of stocks you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Forms 6-1300-M, 6-1302-M and 6-1303-M.	463	135	76	811	123	979	537	1,678	1,024	308	143	260	6,537
2. Memo: Total Jet Fuel Tankage Capacity. (Copy from Questionnaire 3.)	1,209	121	92	1,750	165	1,529	943	2,924	1,430	359	230	448	11,200
3. Analysis of Unavailable Stocks included in Item 1 above:													
(a) Credit tank bottoms as you carry them in your own inventory statements.	46	5	5	88	17	59	39	142	27	10	2	37	477
(b) In refinery lines and refinery operating equipment.	2	1	0	8	0	1	0	5	0	0	0	1	18
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)	10	0	0	4	0	0	0	0	0	0	0	0	14
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)	0	3	0	16	6	35	0	2	0	0	0	0	62
(e) Pipeline fill.	1	60	9	39	12	115	0	0	1	120	35	54	446
(f) Pipeline operating requirements.	80	0	0	0	0	5	2	1	0	0	33	10	131
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (include only if you report these to the Bureau of Mines).	0	0	0	19	0	0	0	0	0	0	0	0	19
Total Unavailable Jet Fuel. (Sum of (a) to (g) above.)	139	69	14	174	35	215	41	150	28	130	70	102	1,167
Total Available Jet Fuel.	324	66	62	637	88	764	496	1,528	996	178	73	158	5,370
DISTILLATE FUEL OIL Deal only with those inventories regularly reported to the Bureau of Mines on Forms 6-1300-M, 6-1302-M and 6-1303-M. (Report all figures in Thousands of Barrels)													
1. Fill in here aggregate amount of stocks you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Forms 6-1300-M, 6-1302-M and 6-1303-M.	78,239	4,111	2,195	29,987	9,116	12,489	1,776	18,665	8,607	3,908	255	2,681	172,029
2. Memo: Total Distillate Fuel Oil Tankage Capacity. (Copy from Questionnaire 3.)	104,548	6,084	3,632	45,134	13,823	20,060	3,914	31,975	13,865	4,309	358	5,092	252,794
3. Analysis of Unavailable Stocks included in Item 1 above:													
(a) Credit tank bottoms as you carry them in your own inventory statements.	4,235	267	138	2,567	426	915	195	1,086	430	130	12	184	10,904
(b) In refinery lines and refinery operating equipment.	82	1	0	46	1	37	3	49	16	3	0	5	243
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)	2,730	104	16	311	221	172	0	283	32	45	2	0	3,916
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)	668	33	13	363	28	402	0	860	6	0	5	25	2,403
(e) Pipeline fill.	3,000	232	54	802	1,391	2,309	56	93	254	1,541	80	277	10,089
(f) Pipeline operating requirements.	1,204	197	54	942	74	506	111	495	280	28	33	172	4,096
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (include only if you report these to the Bureau of Mines).	1,115	111	0	185	50	32	0	29	0	50	0	11	1,583
Total Unavailable Distillate Fuel Oil. (Sum of (a) to (g) above.)	13,034	885	275	5,216	2,191	4,373	345	2,895	1,018	1,797	132	674	32,835
Total Available Distillate Fuel Oil.	65,205	3,226	1,920	24,771	6,925	8,116	1,431	15,770	7,589	2,111	123	2,007	139,194
RESIDUAL FUEL OIL Deal only with those inventories regularly reported to the Bureau of Mines on Forms 6-1300-M and 6-1302-M. (Report all figures in Thousands of Barrels)													
1. Fill in here aggregate amount of stocks you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Forms 6-1300-M and 6-1302-M.	16,889	337	136	5,548	765	943	2,231*	3,721	1,348	105	134	491	32,648*
2. Memo: Total Residual Fuel Oil Tankage Capacity. (Copy from Questionnaire 3.)	28,173	778	323	8,821	1,630	2,139	484	7,003	2,493	379	420	1,258	53,901
3. Analysis of Unavailable Stocks included in Item 1 above:													
(a) Credit tank bottoms as you carry them in your own inventory statements.	1,432	19	16	701	98	95	15	411	118	6	1	39	2,951
(b) In refinery lines and refinery operating equipment.	43	2	0	11	2	2	1	19	2	4	0	4	90
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)	2,357	0	0	31	10	10	0	10	8	0	0	0	2,426
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)	250	8	15	626	1	89	13	62	0	0	1	10	1,075
(e) Pipeline fill.	23	0	0	1	0	0	0	0	0	0	0	0	24
(f) Pipeline operating requirements.	0	0	0	1	0	2	0	12	0	0	0	0	15
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (include only if you report these to the Bureau of Mines).	567	4	0	30	0	9	0	0	0	1	0	1	612
Total Unavailable Residual Fuel Oil. (Sum of (a) to (g) above.)	4,672	33	31	1,401	111	207	29	514	128	11	2	54	7,193
Total Available Residual Fuel Oil.	12,217	304	105	4,147	654	736	2,202*	3,207	1,220	94	132	437	25,455*

A separate Questionnaire Form will be used for companies reporting for West Coast, Alaska and Hawaii.

SPECIAL NOTICE: Please read again applicable items of enclosed instructions before filling in these forms.

U.S. (EXCLUDING WEST COAST, ALASKA AND HAWAII) - CAPACITY OF PRINCIPAL
REFINED PRODUCTS TANKAGE AS OF SEPTEMBER 30, 1969

(Report all tankage available for storing the principal refined products as shown below, but deal only with the tankage that is located at the points (refineries, pipelines, tank farms and terminals) included in the stock figures you regularly report to the Bureau of Mines on Forms 6-1300-M, 6-1302-M and 6-1303-M. Do not include tankage at bulk plants, service stations, etc., the inventories of which you do not report to the Bureau of Mines.) See NOTE.

	East Coast	Appalachian		Indiana, Illinois, Kentucky, etc.	Minn., Wisc., No. Dak. and So. Dak.	Oklahoma, Kansas, Missouri, etc.	Texas Inland	Texas Gulf	Louisiana Gulf	Arkansas, Louisiana Inland etc.	New Mexico	Rocky Mountain	Total U. S. (Excluding West Coast Alaska & Hawaii)
		District 1	District 2										
GASOLINE (Motor & Aviation) Deal only with the tankage at the locations of inventories you regularly report to the Bureau of Mines. (Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries as of September 30, 1969—Form 6-1300-M.	16,633	1,498	914	28,788	3,660	14,989	8,883	32,582	16,243	1,858	561	7,608	134,217
2. Capacity of tankage along pipelines and on tank farms (if any)—Form 6-1303-M.	17,773	1,071	1,451	4,951	2,826	7,551	1,205	5,634	4,275	4,670	66	999	52,477
3. Capacity of tankage at bulk terminals—Form 6-1302-M.	53,404	6,269	3,739	23,046	6,392	5,555	4,871	2,554	1,621	4,019	453	1,783	113,706
4. Total Gasoline Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	87,815	8,838	6,104	56,785	12,878	28,095	14,959	40,770	22,139	10,547	1,080	10,390	300,400
KEROSENE (Include kerosene-type jet fuel) Deal only with the tankage at the locations of inventories you regularly report to the Bureau of Mines. (Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries as of September 30, 1969—Form 6-1300-M.	3,464	283	135	6,877	617	2,722	819	8,015	5,000	1,102	92	1,361	30,487
2. Capacity of tankage along pipelines and on tank farms (if any)—Form 6-1303-M.	4,379	98	386	404	229	498	262	1,144	1,247	147	15	320	9,129
3. Capacity of tankage at bulk terminals—Form 6-1302-M.	18,337	1,194	553	5,637	1,956	778	638	1,744	143	432	91	199	31,702
4. Total Kerosene Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	26,180	1,575	1,074	12,918	2,802	3,998	1,719	10,903	6,390	1,681	198	1,880	71,318
JET FUEL (Include naphtha-type jet fuel only) Deal only with the tankage at the locations of inventories you regularly report to the Bureau of Mines. (Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries as of September 30, 1969—Form 6-1300-M.	655	97	6	1,146	109	1,101	682	2,914	1,321	330	200	427	8,988
2. Capacity of tankage along pipelines and on tank farms (if any)—Form 6-1303-M.	226	0	0	82	0	388	2	0	109	29	0	0	836
3. Capacity of tankage at bulk terminals—Form 6-1302-M.	328	24	86	522	56	40	259	10	0	0	30	21	1,376
4. Total Jet Fuel Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	1,209	121	92	1,750	165	1,529	943	2,924	1,430	359	230	448	11,200
DISTILLATE FUEL OIL Deal only with the tankage at the locations of inventories you regularly report to the Bureau of Mines. (Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries as of September 30, 1969—Form 6-1300-M.	19,299	1,428	477	25,429	2,859	10,402	2,148	24,957	11,317	2,506	213	3,542	104,557
2. Capacity of tankage along pipelines and on tank farms (if any)—Form 6-1303-M.	12,253	475	1,355	4,219	3,637	5,382	235	2,925	1,931	732	20	522	33,686
3. Capacity of tankage at bulk terminals—Form 6-1302-M.	72,996	4,181	1,800	15,486	7,327	4,276	1,531	4,113	617	1,071	125	1,028	114,551
4. Total Distillate Fuel Oil Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	104,548	6,084	3,632	45,134	13,823	20,060	3,914	31,975	13,865	4,309	358	5,092	252,794
RESIDUAL FUEL OIL Deal only with the tankage at the locations of inventories you regularly report to the Bureau of Mines. (Report all figures in Thousands of Barrels)													
1. Capacity of tankage at refineries as of September 30, 1969—Form 6-1300-M.	9,362	626	268	6,404	1,360	1,614	484	6,518	2,392	379	420	1,258	31,085
2. Capacity of tankage along pipelines and on tank farms (if any)—Form 6-1303-M.	0	0	0	47	0	215	0	0	19	0	0	0	281
3. Capacity of tankage at bulk terminals—Form 6-1302-M.	18,811	152	55	2,370	270	310	0	485	82	0	0	0	22,535
4. Total Residual Fuel Oil Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	28,173	778	323	8,821	1,630	2,139	484	7,003	2,493	379	420	1,258	53,901
5. Earthen and/or concrete reservoir storage capacity included in Item 4 above.	0	0	0	0	0	0	0	0	0	0	0	70	70

NOTE: The figures to be shown here are NOT the actual stocks previously reported as of September 30, 1969, but the TOTAL TANKAGE CAPACITY assigned to those stocks and corresponding to the actual categories reported in the columns indicated. Exclude tankage for marketing stocks and unfinished refinery stocks in order to correspond to Questionnaire # 2.

SPECIAL NOTICE: Please read again applicable items of enclosed instructions before filling in these forms.

A separate Questionnaire Form will be used for companies reporting for West Coast, Alaska and Hawaii.

**NATIONAL PETROLEUM COUNCIL'S 1969 SURVEY OF PETROLEUM
STORAGE CAPACITY AND INVENTORY AVAILABILITY**

QUESTIONNAIRE FORM #4
CODE NO. _____ SUMMARY _____

TOTAL FIXED UNAVAILABLE STOCKS OF CRUDE OIL AND PRINCIPAL REFINED PRODUCTS AS OF SEPTEMBER 30, 1969

DISTRICT 5—WEST COAST, ALASKA AND HAWAII

(Figures should include only those categories of stocks regularly reported to the Bureau of Mines.
Include foreign oil actually in storage but not crude or products in transit from foreign sources.)

CRUDE OIL (Report all figures in Thousands of Barrels)		WEST COAST (Total in 5 Pacific Coast States: Arizona, California, Nevada, Oregon & Washington)	ALASKA	HAWAII
1. Fill in here amount of crude oil stocks you reported to the Bureau of Mines as of September 30, 1969 as at refineries or in transit thereto from domestic sources—Form 6-1311 M, Section A or Form 6-1320-M(B-1), Column A, Line 21.		18,498	67	650
(a) Of the above quantity, how much was unavailable—such as oil content of tank bottoms and in refinery pipelines.		1,486	7	125
(b) The minimum quantity required to assure continuous processing, handling and blending various grades of crude. (Do not show volumes as unavailable in these categories unless reported as stocks on Form 6-1311 M or 6-1320-M(B-1).)		8,525	43	525
(c) In transit to refineries by truck, tank car, barge or tanker from domestic sources.		731	0	0
(d) Total Unavailable Crude at refineries and in transit thereto. (Sum of Item 1(a), (b) and (c) above.)		10,742	50	650
(e) Total Available as of September 30, 1969. (Lines (d) + (e) = Total shown in Line 1 above.)		7,756	17	0
2. Fill in here amount of crude oil stocks you reported to the Bureau of Mines as of September 30, 1969 as pipeline and tank farm stocks—Form 6-1311 M, Section B or Form 6-1320-M(B-1), Column A, Line 22 (minus Producers' lease) stocks, if any, included in Line 22. See Note (A) below.		16,186	566	0
(a) Of the above quantity, how much was unavailable as pipeline fill included in Item 2 above.		2,652	171	0
(b) The minimum required in tankage to assure continuous operation of pipelines. (This should reflect the absolute minimum below which you would get into operating difficulties.)		4,257	11	0
(c) Oil content of tank bottoms of tank farm tanks (if reported as stocks on Form 6-1311 M or 6-1320-M(B-1), Line 22).		708	2	0
(d) Total Unavailable Crude in pipeline and tank farm stocks. (Sum of Item 2(a), (b) and (c) above.)		7,617	184	0
(e) Total Available as of September 30, 1969 (Lines (d) + (e) = Total shown in Line 2 above.)		8,569	382	0
NOTE (A): For purposes of this survey Producers' (lease) stocks, Form 6-1311 M, Section C or that portion of Form 6-1320-M(B-1), Column A, Line 22, will be considered as completely unavailable. District 5 companies not using Form 6-1311 M probably have refinery stocks only. If there is any exception to this, be sure to segregate stocks reported on Form 6-1320-M(B-1), Column A, Line 22 so as to report only the portion called for in Item 2 above.				
GASOLINE (Motor & Aviation) Deal only with those inventories regularly reported on California Bureau of Mines Form 6-1320-M(B-1), Columns F and G, Lines 21 and 22. (Report all figures in Thousands of Barrels)				
1. Fill in here amount you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Form 6-1320-M(B-1), Columns F and G, Lines 21 and 22.		21,803	295	488
2. Memo: Total Tankage Capacity in designated gasoline service. (Copy from Questionnaire # 5.)		44,390	651	823
3. Analysis of Unavailable Stocks included in Item 1 above:				
(a) Credit tank bottoms as you carry them in your own inventory statements (if included in stocks reported on Form 6-1320-M(B-1), Columns F and G, Lines 21 and 22.)		2,531	21	48
(b) In refinery lines and refinery equipment (if included in stocks reported on Form 6-1320-M(B-1), Columns F and G, Lines 21 and 22.)		47	0	70
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)		693	93	75
(d) Other Unavailable Stocks. (Include filter house naphtha and unavailable unblended finished.) (See instructions.)		1,289	0	0
(e) Pipeline fill.		1,030	0	0
(f) Pipeline operating requirements.		917	0	0
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (if included in stocks reported on Form 6-1320-M(B-1), Columns F and G, Lines 21 and 22.)		250	0	0
(h) Total Unavailable Gasoline (Sum of (a) thru (g) above.)		6,757	114	193
(i) Total Available Gasoline as of September 30, 1969 (Lines (h) + (i) = Total shown in Line 1 above.)		15,046	181	295
KEROSENE (Include kerosine-type jet fuel) Deal only with those inventories regularly reported on California Bureau of Mines Form 6-1320-M(B-1), Columns J and K, Lines 21 and 22. (Report all figures in Thousands of Barrels)				
1. Fill in here amount you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Form 6-1320-M(B-1), Columns J and K, Lines 21 and 22.		4,697	195	232
2. Memo: Total Tankage Capacity in designated kerosine service. (Copy from Questionnaire # 5.)		7,679	419	422
3. Analysis of Unavailable Stocks included in Item 1 above:				
(a) Credit tank bottoms as you carry them in your own inventory statements (if included in stocks reported on Form 6-1320-M(B-1), Columns J and K, Lines 21 and 22.)		447	24	34
(b) In refinery lines and refinery operating equipment (if included in stocks reported on Form 6-1320-M(B-1), Columns J and K, Lines 21 and 22.)		15	0	34
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)		217	39	43
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)		373	0	0
(e) Pipeline fill.		197	0	1
(f) Pipeline operating requirements.		329	0	0
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (if included in stocks reported on Form 6-1320-M(B-1), Columns J and K, Lines 21 and 22.)		48	0	0
(h) Total Unavailable Kerosine (Sum of (a) thru (g) above.)		1,626	63	112
(i) Total Available Kerosine as of September 30, 1969 (Lines (h) + (i) = Total shown in Line 1 above.)		3,071	132	120
JET FUEL (Include naphtha-type jet fuel) Deal only with those inventories regularly reported on California Bureau of Mines Form 6-1320-M(B-1), Column I, Lines 21 and 22. (Report all figures in Thousands of Barrels)				
1. Fill in here amount you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Form 6-1320-M(B-1), Column I, Lines 21 and 22.		2,883	64	100
2. Memo: Total Tankage Capacity in designated jet fuel service. (Copy from Questionnaire # 5.)		2,987	80	384
3. Analysis of Unavailable Stocks included in Item 1 above:				
(a) Credit tank bottoms as you carry them in your own inventory statements (if included in stocks reported on Form 6-1320-M(B-1), Column I, Lines 21 and 22.)		96	7	25
(b) In refinery lines and refinery operating equipment (if included in stocks reported on Form 6-1320-M(B-1), Column I, Lines 21 and 22.)		4	0	0
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)		44	0	25
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)		1	0	0
(e) Pipeline fill.		113	0	0
(f) Pipeline operating requirements.		53	0	0
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (if included in stocks reported on Form 6-1320-M(B-1), Column I, Lines 21 and 22.)		0	0	0
(h) Total Unavailable Jet Fuel (Sum of (a) thru (g) above.)		311	7	48
(i) Total Available Jet Fuel as of September 30, 1969 (Lines (h) + (i) = Total shown in Line 1 above.)		2,572	57	52

NATIONAL PETROLEUM COUNCIL'S 1969 SURVEY OF PETROLEUM
STORAGE CAPACITY AND INVENTORY AVAILABILITYTOTAL FIXED UNAVAILABLE STOCKS OF CRUDE OIL
AND PRINCIPAL REFINED PRODUCTS AS OF SEPTEMBER 30, 1969

DISTRICT 5—WEST COAST, ALASKA AND HAWAII

(Figures should include only those categories of stocks regularly reported to the Bureau of Mines.
Include foreign oil actually in storage but not crude or products in transit from foreign sources.)

DISTILLATE FUEL OIL Deal only with those inventories regularly reported on California Bureau of Mines Form 6-1320-M(B-1), Column L, Lines 21 and 22. (Report all figures in Thousands of Barrels)		WEST COAST (Total in 5 Pacific Coast States: Arizona, California, Nevada, Oregon & Washington)	ALASKA	HAWAII
1. Fill in here amount you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Form 6-1320-M(B-1), Column L, Lines 21 and 22.		12,351	828	222
2. Memo: Total Tankage Capacity in designated distillate fuel oil (Stove Oil & Diesel Oil) service. (Copy from Questionnaire 5.)		21,450	1,278	692
3. Analysis of Unavailable Stocks included in Item 1 above:				
(a) Credit tank bottoms as you carry them in your own inventory statements (if included in stocks reported on Form 6-1320-M(B-1), Column L, Lines 21 and 22.)		905	28	10
(b) In refinery lines and refinery operating equipment (if included in stocks reported on Form 6-1320-M(B-1), Column L, Lines 21 and 22.)		43	0	0
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)		404	58	38
(d) Other Unavailable Stocks. (Include unavailable unblended finished.) (See instructions.)		656	0	0
(e) Pipeline fill.		205	0	0
(f) Pipeline operating requirements.		306	0	0
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (if included in stocks reported on Form 6-1320-M(B-1), Column L, Lines 21 and 22.)		114	0	0
(h) Total Unavailable Distillate Fuel Oil. (Sum of (a) thru (g) above.)		2,633	86	48
(i) Total Available Distillate Fuel Oil as of September 30, 1969 (Lines (h) + (i) = Total shown in Line 1 above.)		9,718	742	174
RESIDUAL FUEL OIL Deal only with those inventories regularly reported on California Bureau of Mines Form 6-1320-M(B-1), Column N, Lines 21 and 22. (Report all figures in Thousands of Barrels)				
1. Fill in here amount you reported to the Bureau of Mines as at refineries, at bulk terminals, or in pipelines or in transit thereto as of September 30, 1969 on Form 6-1320-M(B-1), Column N, Lines 21 and 22.		25,206	22	759
2. Memo: Total Tankage Capacity in designated residual fuel oil service. (Copy from Questionnaire 5.)		42,749	102	963
3. Analysis of Unavailable Stocks included in Item 1 above:				
(a) Credit tank bottoms for tanks and/or reservoirs as you carry them in your own inventory statements (if included in stocks reported on Form 6-1320-M(B-1), Column N, Lines 21 and 22.)		841	0	46
(b) In refinery lines and refinery operating equipment (if included in stocks reported on Form 6-1320-M(B-1), Column N, Lines 21 and 22.)		20	0	1
(c) One-half of the Average Size of Water Cargo Receipts. (Total of each individual grade calculated separately.) (See instructions.)		545	0	74
(d) Other Unavailable Stocks. (Example: plant fuel, etc.) (See instructions.)		274	0	5
(e) Pipeline fill.		8	0	17
(f) Pipeline operating requirements.		156	0	0
(g) Unavailable in transit by truck, tank car, barge or tanker from domestic sources (if included in stocks reported on Form 6-1320-M(B-1), Column N, Lines 21 and 22.)		3	0	0
(h) Total Unavailable Residual Fuel Oil. (Sum of (a) thru (g) above.)		1,847	0	143
(i) Total Available Residual Fuel Oil as of September 30, 1969 (Lines (h) + (i) = Total shown in Line 1 above.)		23,359	22	616

CAPACITY OF CRUDE OIL AND PRINCIPAL REFINED
PRODUCTS TANKAGE AS OF SEPTEMBER 30, 1969

DISTRICT 5—WEST COAST, ALASKA, AND HAWAII

(Report all tankage available for storing Crude Oil, Gasoline, Kerosine, Jet Fuel, Distillate Fuel Oil and Residual Fuel Oil, as shown below, but deal only with the tankage that is located
at the points (refineries, pipelines, tank farms and terminals) included in the stock figures you regularly report to the Bureau of Mines on Form 6-1311-M (except Producers' lease stocks) or on
Form 6-1320-M(B-1), Crude Oil Column A, Lines 21 and 22 (see Note (B) below); Gasoline Columns F and G, Lines 21 and 22; Jet Fuel Column I, Lines 21 and 22; Distillate Fuel Oil Column L,
Lines 21 and 22; and Residual Fuel Oil Column N, Lines 21 and 22. Do not include tankage at distributing stations, bulk plants, service stations, etc.)

(Report all figures in Thousands of Barrels)

	CRUDE OIL TANKAGE Form 6-1311-M, Sections A and B or Form 6-1320-M(B-1), Column A Lines 21 and 22 (See Note (A) and (B))			GASOLINE TANKAGE (Motor & Aviation) Form 6-1320-M(B-1), Columns F and G Lines 21 and 22 (See Note (A))			KEROSENE TANKAGE (Include kerosine type jet fuel) Form 6-1320-M(B-1), Columns J and K Lines 21 and 22 (See Note (A))		
	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii
1. Capacity of tankage at refineries as of September 30, 1969.	30,722	196	1,900	26,971	0	507	5,231	135	134
2. Capacity of tankage along pipelines and on tank farms.	32,674	20	0	3,157	0	0	771	0	61
3. Capacity of tankage at bulk terminals—(Not bulk plants).	3,441	0	0	14,262	651	316	1,677	284	227
4. Total Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	66,837	216	1,900	44,390	651	823	7,679	419	422
5. Earthen and/or concrete reservoir storage capacity included in Item 4 above.	3,446	0	0	0	0	0	0	0	0
	JET FUEL TANKAGE (Include naphtha-type jet fuel only) Form 6-1320-M(B-1), Column I Lines 21 and 22 (See Note (A))			DISTILLATE FUEL OIL TANKAGE Form 6-1320-M(B-1), Column L Lines 21 and 22 (See Note (A))			RESIDUAL FUEL OIL TANKAGE Form 6-1320-M(B-1), Column N Lines 21 and 22 (See Note (A))		
	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii	Total West Coast (5 Pacific Coast States)	Alaska	Hawaii
1. Capacity of tankage at refineries as of September 30, 1969.	2,385	80	210	11,782	200	467	35,521	0	502
2. Capacity of tankage along pipelines and on tank farms.	394	0	174	1,298	0	0	4,027	0	0
3. Capacity of tankage at bulk terminals—(Not bulk plants).	208	0	0	8,370	1,078	225	3,201	102	461
4. Total Tankage Capacity. (Sum of Items 1, 2 and 3 above.)	2,987	80	384	21,450	1,278	692	42,749	102	963
5. Earthen and/or concrete reservoir storage capacity included in Item 4 above.	0	0	0	0	0	0	24,717	0	0

NOTES (A) The figures to be shown here are NOT the actual stocks previously reported as of September 30, 1969, but the TOTAL TANKAGE CAPACITY assigned to these stocks
and corresponding to the actual categories reported in the columns indicated. Exclude tankage for marketing stocks and unfinished refinery stocks in order to correspond to Questionnaire 4.

(B) Producers' lease tankage, the actual stocks figures for which are reported on Form 6-1311-M, Section C or Form 6-1320-M(B-1), Column A, Line 22, should not be included. See Crude Oil Section, Questionnaire 4.

