Winter Fuels Report

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Released for printing: November 2, 1995

Cover: An artist's rendering of bulk terminal storage tanks.

Printed with soy ink on recycled paper

Winter Fuels Report

**Week Ending:
October 27, 1995**

**Energy Information Administration
Office of Oil and Gas
U.S. Department of Energy
Washington, DC 20585**

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Winter Fuels Report, propane and distillate highlights and distillate data updated Wednesday at 5:00 p.m. All other data updated Thursday at 5:00 p.m. (October through March)

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Contacts

The *Winter Fuels Report* is prepared by the Office of Oil and Gas, Energy Information Administration. General information about this document may be obtained from Diane W. Lique (202) 586-6401, Director of the Office of Oil and Gas or John S. Cook (202) 586-5214, Acting Director of the Petroleum Supply Division. Specific questions can be directed to:

Propane Supply	Dave Hinton Stacey Ungerleider	(202) 586-2990 (202) 586-5130
Distillate Oil Supply	Diana House	(202) 586-9667
Propane/Distillate Prices	Alice Lippert	(202) 586-9600
Natural Gas.....	Audrey Corley Eva Fleming	(202) 586-4804 (202) 586-6113

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Preface

The *Winter Fuels Report* is intended to provide concise, timely information to the industry, the press, policymakers, consumers, analysts, and State and local governments on the following topics:

distillate fuel oil net production, imports and stocks on a U.S. level and for all Petroleum Administration for Defense Districts (PADD) and product supplied on a U.S. level;

propane net production, imports and stocks on a U.S. level and for PADD's I, II, and III;

natural gas supply and disposition and underground storage for the U.S. and consumption for all PADD's; as well as selected National average prices.

residential and wholesale pricing data for heating oil and propane for those States participating in the joint Energy Information Administration (EIA)/State Heating Oil and Propane Program;

crude oil and petroleum price comparisons for the U. S. and selected cities; and

a 6-10 Day and 30-Day outlook for temperature and precipitation and U.S. total heating degree-days by city.

The distillate fuel oil and propane supply data are collected and published weekly. The data are based on company submissions for the week ending 7:00 a.m. for the preceding Friday. Weekly data for distillate fuel oil are also published in the *Weekly Petroleum Status Report*. Monthly data for distillate fuel oil and propane are published in the *Petroleum Supply Monthly*.

The residential pricing information is collected by the EIA and the State Energy Offices on a semimonthly basis for the EIA/State Heating Oil and Propane Program. The wholesale price comparison data are collected daily and are published weekly. Residential heating fuel prices are derived from price quotes for home delivery of No. 2 fuel oil and propane. As such, they reflect prices in effect on the dates shown. Wholesale heating oil and propane prices are estimates using a sample of terminal quotes to represent average State prices on the dates given. The Computer Petroleum Corporation, Inc., defines these prices to be prices f.o.b. terminal, excluding taxes, discounts, and hauling allowances. The crude oil and petroleum product prices are from various industries sources as referenced on each table.

The natural gas data are collected and published monthly in the *Natural Gas Monthly*.

This report will be published weekly by the EIA starting the second week in October 1995 and will continue until the second week in April 1996. The data will also be available electronically after 5:00 p.m. on Wednesday and Thursday during the heating season through the EIA Electronic Publication System (EPUB). See page ii for details.

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Feature Articles

Refinery worker makes his way around a towering storage tank to check the tank level.

Distillate Fuel Oil Assessment for Winter 1995-1996

by Alan Griffith and Mary Zitomer

Introduction

The outlook for distillate fuel oil this winter is for increased demand and a return to normal inventory patterns, assuming a resumption of normal, cooler weather than last winter. With industrial production expected to grow slightly from last winter's pace, overall consumption is projected to increase 3 percent from last winter, to 3.4 million barrels per day during the heating season (October 1, 1995-March 31, 1996). Much of the supply will come from stock drawdowns and refinery production (Table FE1). Estimates for the winter are from the Energy Information Administration's (EIA) *4th Quarter 1995 Short-Term Energy Outlook (STEO)* Mid-World Oil Price Case forecast. Inventories in place on September 30, 1995, of 132 million barrels were 9 percent below the unusually high year-earlier level. Inventories

of high-sulfur distillate fuel oil, the principal type used for heating, were 13 percent lower than a year earlier. Supply problems are not anticipated because refinery production and the ready availability of imports should be adequate to meet demand.

Residential heating oil prices are expected to be somewhat higher than last winter's, as the effects of lower crude oil prices are offset by lower distillate inventories. Heating oil is forecast to average \$0.92 per gallon, the highest price since the winter of 1992-93. Diesel fuel (including tax) is predicted to be slightly higher than last year at \$1.13 per gallon.

This article focuses on the winter assessment for distillate fuel oil, how well last year's *STEO* winter outlook compared to actual events, and expectations for the coming winter. Additional

Table FE1. Distillate Fuel Oil Demand and Supply Factors, Winter (October - March) 1992-93 Through 1995-96

Factor	History			STEO Mid Case Winter 1995-96
	Winter 1992-93	Winter 1993-94	Winter 1994-95	
Economic Growth (percent per year):				
Gross Domestic Product Growth Rate	3.44	3.38	4.06	1.86
Industrial Production Growth Rate.....	3.81	3.85	5.76	1.03
Average Prices:				
Imported Crude Oil (per barrel)	\$17.81	\$13.59	\$16.79	\$16.25
Retail Heating Oil (per gallon excluding tax)	\$0.95	\$0.89	\$0.87	\$0.92
Diesel Fuel Oil (per gallon including tax)	\$1.11	\$1.15	\$1.11	\$1.13
Heating Degree-Days:				
Number:				
U.S. Average	4,038	4,144	3,548	3,990
New England	5,801	5,953	4,995	5,575
Middle Atlantic	5,174	5,474	4,503	5,054
Percent Difference From Normal:				
U.S. Average	1.2	3.9	-11.1	0
New England	4.1	6.8	-10.4	0
Middle Atlantic	2.4	8.3	-10.9	0
Supply and Demand (million barrels per day except stocks):				
Refinery Production.....	3.06	3.26	3.15	3.20
Net Imports	-0.01	-0.08	-0.01	0.02
Stock Change	-0.17	-0.17	-0.16	-0.18
Demand.....	3.22	3.35	3.30	3.40
Stocks begin/end (million barrels)	128/97	131/99	145/115	132/99

Note: Negative stock change indicates an addition to supply; positive stock change indicates a removal from supply.

Sources: Energy Information Administration, 4th Quarter 1995 Short-Term Energy Forecasting System; *Petroleum Supply Annual 1994*, Volume 1, Table S5; *Petroleum Supply Monthly*, September 1995, Table S5; *Petroleum Marketing Monthly*, September 1995, Tables 1 and 16.

Unless otherwise referenced, data in this article are taken from the following: *Weekly Petroleum Status Report*, DOE/EIA-0208 (95-43) and predecessor reports; *Petroleum Supply Monthly*, October 1995, DOE/EIA-0109(95/10); *Petroleum Supply Annual 1994*, DOE/EIA-0340, Volumes 1 and 2 and predecessor reports; *Petroleum Marketing Monthly*, October 1995, DOE/EIA-0380(95/10); *Short-Term Energy Outlook*, DOE/EIA-0202(95/4Q) and 4th Quarter 1995 Short-Term Energy Forecasting System. All data through 1994 are considered final and are not subject to further revision.

analyses include regional low-sulfur and high-sulfur distillate supply, demand, and prices, and recent trends in distillate fuel oil inventories.

Supply and Demand Patterns Emerge for Low-Sulfur and High-Sulfur Distillates

Regulatory Effects on Highway Diesel Fuel

As the major component of distillate fuel oil demand in the United States, highway diesel fuel's visible and odorous characteristics made it a primary subject of the Clean Air Act Amendments (CAAA) of 1990. As a fuel subject to Federal excise taxes, it has also been a target of Internal Revenue Service efforts to reduce tax evasion. The CAAA required that the maximum sulfur level of highway diesel fuel be reduced 80 percent, from a maximum of 0.25 percent by weight to 0.05 percent by weight as of October 1, 1993. Additional regulations effective January 1, 1994, require that distillate fuel oil not federally taxed be dyed to distinguish it from the "clear" taxable fuel. Furthermore, the tax collection point was changed from the last point of wholesale to the terminal rack. This resulted in fewer taxpayers to monitor. As a result, tax evasion opportunities were significantly reduced, leading to an increase in reporting of on-highway diesel use to Federal and State officials in 1994.¹

Even before the 1994 regulations were implemented, recorded sales of highway diesel accounted for between 45 percent and 49 percent of U.S. distillate fuel oil demand between 1990 and 1993. In 1994, the first full year of the low-sulfur diesel fuel program and the dyeing regulations, the portion increased to 50 percent.

Regional Supply and Distribution of Low-Sulfur and High-Sulfur Distillates

Two years into the mandated low-sulfur diesel fuel program, supply and consumption patterns for low-sulfur and high-sulfur distillate fuel oil have emerged. These patterns became clear after the Department of Transportation's highway diesel fuel sales were determined for 1994, the first full year of the mandated program. Analysis of these data and of product supplied data from EIA's *Petroleum Supply Annual* indicate that much of the low-sulfur distillate is consumed as highway diesel fuel in the United States. Regional patterns vary considerably, however.

National sales of low-sulfur diesel fuel for highway use in 1994 represented 87 percent of total low-sulfur distillate demand.² Regionally, the low-sulfur material consumed was almost exclusively for highway use in Petroleum Administration for Defense (PAD) Districts I and II (Figure FE1). In other regions, low-sulfur distillates were used for other purposes in addition to

Figure FE1. Regional Highway Diesel as Part of Low-Sulfur Distillate Demand, 1994

Source: Energy Information Administration, *Fuel Oil and Kerosene Sales 1994*, Table 16, and *Petroleum Supply Annual 1994*, Volume 1, Tables 5, 7, 9, 11, and 13.

highway use. This was particularly true in the Rocky Mountain and West Coast areas. Consumption of low-sulfur distillate fuel oil for purposes other than as highway diesel fuel, such as farming, commercial and industrial uses, are not federally taxed.

The East Coast and Midwest each accounted for about one-third of the Nation's highway diesel fuel consumption in 1994. To meet demand, relatively low refinery production on the East Coast was largely supplemented through pipeline and water receipts from the Gulf Coast, and by direct imports from Canada and the Virgin Islands. Midwest supplies were primarily from indigenous production, supplemented by pipeline receipts from the Gulf Coast.

While low-sulfur distillate demand increased from year-earlier levels in all areas of the Nation except the Gulf Coast during the first 8 months of 1995, high-sulfur distillate demand declined in all regions except the West Coast. High-sulfur demand is also concentrated on the East Coast (Figure FE2), which accounted for 50 percent of U.S. high-sulfur demand during the first 8 months of 1995 (Table FE2). High-sulfur distillate is used primarily on the East Coast for residential and commercial heating and for industrial operations. Supplies from the Gulf Coast and imports from Canada, Virgin Islands, and Venezuela supplement East Coast production.

Monthly low-sulfur stocks in all areas except the Middle Atlantic States have remained close to levels established at the beginning of the low-sulfur diesel fuel program in October 1993. The 1994 Middle Atlantic low-sulfur summer stockbuild was related to transportation and storage uncertainties associated with the autumn 1994 shipments of reformulated gasoline. Such a buildup in low-sulfur distillate stocks was not repeated in 1995. In general,

¹For a detailed account of the changes in reporting of highway diesel fuel sales, see the Energy Information Administration report, *Fuel Oil and Kerosene Sales 1994*, p. 9.

²Energy Information Administration, *Fuel Oil and Kerosene Sales 1994*, Table 16, and *Petroleum Supply Annual 1994*, Volume 1, Table 3.

Table FE2. Regional Supply and Disposition of Low-Sulfur and High-Sulfur Distillate Fuel Oil, January - August 1995, and Demand and Ending Stocks, January - August 1994
(Thousand Barrels per Day Except Stocks)

PAD District	Item	January - August 1995							January - August 1994	
		Production	Imports	Net Receipts	Stock Change	Exports	Demand	Ending Stock (Million Barrels)	Demand	Ending Stock (Million Barrels)
I	Total.....	407	172	573	-33	5	1,179	58.1	1,200	64.7
	Low-Sulfur.....	155	63	305	-26	4	545	15.8	516	22.9
	High-Sulfur.....	251	109	268	-7	1	634	42.3	684	41.9
II	Total.....	752	4	204	-18	1	977	30.5	952	32.7
	Low-Sulfur.....	491	3	165	-15	(s)	673	20.1	569	21.6
	High-Sulfur.....	261	2	39	-2	1	304	10.4	384	11.1
III	Total.....	1,360	1	-796	(s)	77	489	28.2	523	28.1
	Low-Sulfur.....	784	0	-483	-2	20	282	14.9	308	14.0
	High-Sulfur.....	576	1	-312	1	57	206	13.3	215	14.1
IV	Total.....	130	5	4	-4	0	142	2.3	133	2.1
	Low-Sulfur.....	103	1	5	-2	0	110	1.9	97	1.7
	High-Sulfur.....	26	4	-1	-2	0	32	0.4	36	0.5
V	Total.....	439	3	15	-4	70	390	11.7	362	10.9
	Low-Sulfur.....	308	2	9	-1	14	306	8.0	298	7.3
	High-Sulfur.....	131	1	5	-3	56	85	3.7	64	3.6
U.S.	Total.....	3,087	184	-	-59	153	3,177	130.9	3,171	138.6
	Low-Sulfur.....	1,842	68	-	-45	38	1,917	60.8	1,788	67.4
	High-Sulfur.....	1,246	116	-	-13	114	1,261	70.1	1,383	71.1

Note: Totals may not equal sum of components due to independent rounding.

(s) = Less than 500 barrels per day.

Energy Information Administration, *Petroleum Supply Monthly*, October 1995, Tables 3 through 25, and *Petroleum Supply Annual 1994*, Volume 2, Tables 2 through 13.

Figure FE2. Regional Distillate Fuel Oil Demand, January-August 1995

Source: Energy Information Administration, *Petroleum Supply Monthly*, October 1995, Tables 9, 13, 17, 21, and 25.

Summer stock buildup is in high-sulfur distillate fuel oil in New England and the Middle Atlantic States.

The 1995 summer stockbuild in the New England States was similar to the 1993 and 1994 builds. Both low-sulfur and

high-sulfur stocks were built up at about the same rate as in the past. These rates were sufficient to bring the level of winter stocks high enough to withstand the frigid 1993-94 winter. New England temperatures at that time were 7 percent colder than normal. Should the area experience a similar freeze during the winter of 1995-96, supplies should be sufficient to accommodate a demand surge.

The high-sulfur distillate stockbuild in the Middle Atlantic States was considerably less aggressive during the summer of 1995 than during the 2 previous years. In anticipation of the introduction of low-sulfur diesel fuel in the fall of 1993, and of reformulated gasoline into the petroleum delivery system in autumn 1994, summer stockbuilds were uncommonly high both years. In fact, last year's exceptionally mild winter left total distillate stocks at the end of the heating season at the highest level since 1983 in the Middle Atlantic States. At the end of March 1995, there remained 30 million barrels of high-sulfur stocks in primary storage, compared to 21 million barrels a year earlier. Middle Atlantic stockbuilding from this higher base began in July 1995 (Figure FE3), when an 8-million barrel increase brought the level to within 4 percent of the high July 1994 level. Further summer stockbuilding was slight, however. By the end of September 1995, high-sulfur stocks of 26 million barrels were 6 million barrels lower than a year earlier.

Figure FE3. Summer High-Sulfur Distillate Stockbuild in New England and Middle Atlantic Regions, 1994-1995

Source: Energy Information Administration, *Weekly Petroleum Status Report*, April through October 1994 and 1995 issues, Table 14.

Price Patterns of Low-Sulfur and High-Sulfur Distillate Fuel Oil

The prices consumers pay for heating oil are structured differently than those for low-sulfur highway diesel. Seasonality and taxes affect the structure. Home heating oil is not federally taxed and seasonal, whereas highway (low-sulfur) diesel is consumed year-round and federally taxed, primarily as a means to pay for highway improvements. Since shortly after the onset of the low-sulfur diesel fuel program in October 1993, low-sulfur diesel fuel prices have been relatively steady throughout the year, with a tendency to fall slightly in mid-winter, when heating oil prices are climbing.

An array of problems combined to set the average U.S. low-sulfur diesel fuel price at a high level upon implementation of the low-sulfur diesel fuel program in October 1993. In particular, distillate fuel oil transportation and storage became more complicated because of the need to separate taxable highway diesel fuel from other low-sulfur and high-sulfur distillates that were subject to various dyeing specifications. There were also production problems at some refineries, and Midwest and West Coast stocks were relatively low. The Midwest was in the throes of a flood, which added to disruptions in getting product to customers. Shortages related to these and other problems ran the price up at first. The average retail U.S. low-sulfur diesel fuel

Recent Trends in Distillate Fuel Oil Inventories

Much has happened in the U.S. petroleum industry since 1989. The Clean Air Act Amendments of 1990 required fuel specification changes that affect all elements of the industry. Recent trends in distillate fuel oil inventories show how the new fuel specifications have impacted inventory managers.

- As of October 1993, on-highway diesel fuel specifications require a sulfur content of less than 0.05 percent by weight.
- As of January 1995, reformulated gasoline (RFG) was required in the nine most severe ozone non-attainment regions and regions that opted into the RFG program.
- Other regulations include gasoline vapor pressure limits and oxygenated gasoline requirements for carbon monoxide nonattainment areas.

These clean fuels requirements have created new ways of doing business throughout the domestic petroleum industry. The primary concern of inventory managers is the new, distinct specifications for distillate fuel oil and gasoline. The loss of fungibility in many fuels resulted in new inventory patterns in the last 5 years.

Trends in total primary distillate fuel oil inventories³ show strong seasonal patterns and a low point in 1989. The seasonal variations result from demand for residential heating oil, which accounted for 13.1 percent of total distillate fuel oil demand⁴ in 1994. In particular, PAD Districts I and II increase their demand for heating oil considerably during the winter heating season. Refiners typically begin to build primary distillate fuel oil inventories in July or August, in preparation for the heating season demand. Refiners can shift yield ratios from gasoline to distillate fuel oil before the heating season begins, with the higher distillate fuel oil production placed in inventory for the winter. As temperatures drop and refinery production does not fully meet demand, inventories fall throughout the winter.

A long-term trend shows that annual peak inventories were generally falling from 1981 to 1989. That trend reversed from 1989 through 1994. (Figure FE4) The downward trend in peak distillate fuel oil inventories occurred during petroleum industry downsizing. The number of refineries and the refinery distillation capacity decreased between 1981 and 1990. (Table FE3) The industry's size reduction and cost cutting measures resulted in more efficient inventory management.

³ Primary inventories are defined as the end-of-month inventories held at refineries, pipelines, and bulk terminals.

⁴ Energy Information Administration, *Fuel Oil and Kerosene Sales 1994*, Table 16.

Figure FE4. U.S. Primary Distillate Fuel Oil Inventories, January 1981 to September 1995.

Source: Energy Information Administration, 4th Quarter 1995 Short-Term Integrated Forecasting System; *Petroleum Supply Monthly*, March 1981 - September 1995, Table S5, and Weekly Petroleum Status Report, August and September 1995 issues, Table 14.

From 1990 to 1994, primary distillate fuel oil inventories increased despite continued industry rationalization. The increase occurred almost exclusively in refinery inventories in PAD District I. Since 1990, PAD District I refinery inventories have grown from about 20 percent to over 30 percent of total refinery inventory holdings during high inventory periods (Figure FE5). In other PAD Districts these inventories were flat or decreasing. The isolated inventory build up suggests a cause that is particular to PAD District I, not one that should affect all regions of the country.

A data submission change partially explains the PAD District I refinery inventory rise. Since passage of the Clean Air Act Amendments of 1990, bulk terminals that blend large volumes of gasoline report all submissions to the Energy Information Administration as refiners. Thus, some bulk terminal facilities report distillate fuel oil inventories as if they are at refineries. From 1990 to 1994, peak distillate fuel oil refinery inventories increased from 9.3 million barrels to 16.2 million barrels. The drop in peak bulk terminal inventories, 49.4 million barrels to 47.2 million barrels, partially offset the refinery inventory build.

Several market factors related to CAAA changes explain the remainder of the inventory increase. First, PAD District I distillate fuel oil production has increased and production peaks have been the highest since the winter of 1989-90. This is due to co-production with gasoline. Since the requirement of new clean fuels, motor gasoline production

Table FE3. Number and Operable Capacity of U.S. Petroleum Refineries As Of January 1, 1981 - 1995

Year	Number	Crude Oil Distillation Capacity (thousand barrels per calendar day)
1981.....	324	18,621
1982.....	301	17,890
1983.....	258	16,859
1984.....	247	16,137
1985.....	223	15,659
1986.....	216	15,459
1987.....	219	15,566
1988.....	213	15,915
1989.....	204	15,655
1990.....	205	15,572
1991.....	202	15,676
1992.....	199	15,696
1993.....	187	15,121
1994.....	175	15,082
1995.....	175	15,434

Source: Energy Information Administration, *Petroleum Supply Annual 1993 and 1994*, Volume 1, Table 36, and *Annual Energy Review 1994*, Table 5.9.

has been consistently high during and beyond the summer driving season. The winter oxygenated gasoline requirement has extended the gasoline production season. So, gasoline production continues beyond the summer driving season in order to meet oxygenated gasoline demand. The growth in motor gasoline production is accompanied by greater production of distillate fuel oil, which goes to inventory.

Second, more tankage is needed to accommodate both high and low sulfur distillate fuel oil. Distinct fuel specifications reduced storage efficiency because some tanks formerly used to store fungible products now must be designated for a segregated product.⁵ Therefore, inventories have expanded in order to meet a given demand for a greater variety of fuels.

Third, inventory managers must store more distillate fuel oil in one segment of primary inventory facilities (i.e. refiners) because other inventory capacity (i.e. bulk terminal capacity) must hold new gasoline products. PAD District I is a major recipient of conventional gasoline, RFG, and oxygenated RFG. Inventories of total gasoline have been much higher in 1992 through 1994 than in most of the preceding 4 years. In addition to total gasoline, inventory capacity has held 1 to 5 million barrels of oxygenates in a given month since January 1993. These fuels are not fungible and, therefore, must be stored separately. The likely storage facilities are bulk terminals because these supplies come primarily from PAD District III and imports.

All segments of the petroleum industry have adapted to the requirements of the Clean Air Act Amendments of 1990. These distillate fuel oil inventory shifts are one example of the adaptation by petroleum inventory managers which impacted a single region of the country.

⁵Energy Information Administration, *Petroleum Marketing Monthly*, "Distillate Fuel Oil Assessment for Winter 1994-95, System Flexibility Will Play Important Role," November 1994.

Figure FE5. U.S. Refinery Inventories of Distillate Fuel Oil, January 1981 to August 1995

Source: Energy Information Administration, *Petroleum Supply Annual*, Volume 2, 1981 - 1994, Table 18, and *Petroleum Supply Monthly*, March 1995 - October 1995, Table 30.

price averaged \$1.22 per gallon during October 1993. By the end of 1993, the average price was down to \$1.10 per gallon and has stayed within 2 cents per gallon of that price since.

Rises in residential heating oil prices during the winter heating season vary with the severity of the weather and with perceptions of supply adequacy. Two winter seasons ago, during the harsh January and February of 1994, the average residential heating oil price increased rapidly despite plentiful supplies. Frigid temperatures and precipitation put stress on local delivery systems, causing delivery costs to rise and delays in delivery of heating oil to consumers. The retail price rose from \$0.87 per gallon in December 1993 to \$0.93 per gallon in February 1994. Prices then fell each month, reaching a low of \$0.82 per gallon in August 1994. During the mild 1994-95 winter, the U.S. average retail heating oil price increased slightly, from \$0.87 in December 1994 to \$0.88 in February 1995, before drifting downward over the summer.

Review of Previous Winter's Distillate Fuel Oil Assessment

A comparison of last year's assessment and actual outcomes provides insight for forecast interpretation. As actual conditions differed from model assumptions, outcomes deviated from the forecast. During the last heating season, lower-than-expected

Table FE4. Comparison of Actual and Forecasted Crude Oil Prices for Winter 1994-1995

	Actual	Forecasted
October 1994	16.23	16.5
November 1994	16.46	16.5
December 1994	15.78	16.5
January 1995	16.56	16.5
February 1995	17.21	16.5
March 1995	17.22	16.5

Source: Energy Information Administration, *Petroleum Marketing Monthly*, June 1995, Table 1; Short-Term Integrated Forecasting System, 4th Quarter 1994.

crude oil prices, high inventories, and mild weather were the primary reasons for deviations from the STEO forecast.

In Winter 1994-95, consumers benefitted from retail heating oil prices that averaged 5.2 cents per gallon lower than expected. January and February 1995 showed the largest deviation from the expectations at 7.6 and 6.8 cents per gallon, respectively. (Figure FE6)

Differences between expected and actual crude oil prices and distillate fuel oil inventory levels created the deviations. Crude oil prices remained below the expected price level through the first half of the heating season. (Table FE4) A growing world crude oil supply, mostly from non-OPEC (Organization of Petroleum

Figure FE6. Comparison of Actual and Forecasted Retail Heating Oil Prices in Winter 1994-95.

Source: Energy Information Administration, *Petroleum Marketing Monthly*, December 1994 - June 1995, Table 37, and Short-Term Integrated Forecasting System, 4th Quarter 1994.

Exporting Countries) countries, kept a loose crude oil balance for the winter, which translated to lower crude oil prices.

The lower crude oil prices explain an equivalent price difference in heating oil prices. At most, crude oil prices accounted for 1.7 cents per gallon of the difference in distillate fuel oil prices⁶. High distillate fuel oil inventories and warmer than expected weather, which are intimately connected, account for the rest of the difference.

Actual distillate fuel oil inventories were lower than forecasted in the first 3 months of the heating season. By the first quarter of 1995, inventories were 5.5 million barrels higher than expected and higher than normal despite the February cold weather. The high first quarter distillate fuel oil inventories indicated a sufficient supply and resulted from warmer than expected weather. For example, the first half of the season recorded 174 heating degree-days below the expectation while the second half temperatures were slightly warmer than expected.

In short, low crude oil prices and mild weather kept prices down in the first half of the heating season. Then, even though crude oil prices increased in the second half of the season, high distillate fuel oil inventories indicated sufficient supplies for marketers. So, high distillate fuel oil inventories and normal weather kept prices well below expectations.

⁶This assumes a simple, complete pass through of crude oil cost savings.

Current Trends

Last winter was mild, with first quarter 1995 weather 10 percent warmer than the 30-year average. Nevertheless, distillate fuel oil demand (measured as product supplied) in the first 7 months of 1995 closely matched the high demand seen in the same months of 1994. (Figure FE7) The warmer weather suggests that the demand for space heating was not that high, so it is likely that much of the winter demand was driven by secondary and tertiary heating oil inventory rebuilding. Strong demand beyond the first 3 months of 1995 arose mostly from diesel fuel demand.

Production during the first 7 months of 1995 averaged 3.1 million barrels per day. This was higher than in 1991-93, but generally lower than 1994 (Figure FE8). As of August 1995, production was still 3.1 million barrels per day, but this is about the 5-year average.

Gasoline markets have impacted refinery decisions that led to production declines throughout the summer. Gasoline production increased through July 1995 to meet gasoline demand. Despite the strong gasoline production, gasoline inventories eroded through the summer and hit a new observed low level, in late August. This created a significant increase in gasoline prices relative to heating oil prices (Figure FE9). Higher gasoline prices produced an incentive to shift production from distillate fuel oil to gasoline.

Figure FE7. U.S. Distillate Fuel Oil Demand by Year

Source: Energy Information Administration, *Petroleum Supply Monthly*, March 1991 - September 1995, Table S5.

Figure FE8. U.S. Distillate Fuel Oil Production by Year

Source: Energy Information Administration, *Petroleum Supply Monthly*, March 1991 - September 1995, Table S5.

Figure FE9. Price Comparison of Crude Oil, Gasoline, and Heating Oil

¹Retail gasoline prices less taxes. Total monthly taxes from Energy Information Administration, Short-Term Integrated Forecasting System.

Source: Energy Information Administration, *Short-Term Integrated Forecasting System*, 4th Quarter 1995; *Petroleum Marketing Monthly*, November 1995, Tables 1 and 39; and *Weekly Petroleum Status Report*, Table 11.

Imports and exports have followed the pattern established in 1991. Foreign markets for U.S. distillate fuel oil, namely Central and South America and the Asia-Pacific Region, have demanded high enough prices to increase average levels of U.S. exports. The net result is that the United States is a net exporter as often as it is a net importer of distillate fuel oil.

The result of the interplay between supply, net imports, and demand is that inventories were above 3-year-average ranges from July 1994 to June 1995. The March 1995 inventory level of 115.5 million barrels was well above past end of winter levels of about 98 million barrels. A jump in March 1995 production, in reaction to a short cold spell in February, minimized the normal winter inventory drawdown. As production dropped back to average levels, the summer distillate fuel oil inventory builds slowed. The upward inventory trend, starting at 114.6 million barrels in April 1995, flattened out through the summer, unlike in previous years. Inventory managers may be drawing off the high inventory levels of the last several years. (See sidebar.)

Heating oil prices dropped through the summer (Figure FE9). Inventories within average levels and dropping crude oil prices since April 1995 provided the conditions for falling prices. Also, marketers' attention turned to gasoline during the high demand driving season.

Hurricane Opal blew through the U.S. Gulf Coast area during the week of October 2, 1995. The Class 4 hurricane made landfall on October 4. Oil and gas platforms in the Gulf of Mexico and Gulf Coast refineries had been shutdown, in precaution. As much as 383 thousand barrels per day of refinery capacity closed, while several refineries slowed production. All production restarted by the end of the week. Crude oil and No. 2 heating oil prices remained steady through the worst of the storm and then dropped the second half of the week. The calm in prices suggested marketers felt comfortable with the production and inventory levels going into the winter heating season.

Assessment for Winter 1995 - 1996

The fourth quarter STEO world crude oil mid-price case assumes crude oil prices will remain at \$16.50 per barrel during the fourth quarter 1995 then drop \$0.50 per barrel for the last half of the heating season. This crude oil price path means that upward pressure on distillate fuel oil prices will not come from crude oil prices. The mid-price case also assumes that weather should be normal⁷ throughout the heating season.

The crude oil price path results from a comfortable balance between world crude oil demand and supply. Crude oil demand

should rise through the heating season due to industrial production increases and worldwide heating fuels demand. World crude oil production should easily keep pace with demand as supplies from the North Sea and South America continue to grow.

In the normal weather assumption, heating degree-days, the best indicator of winter distillate demand, are assumed to follow normal winter patterns. Based upon this, demand should gradually increase through November as weather becomes colder in the Northeast and Middle Atlantic and heating oil customers stock up for the winter. As the coldest weather falls on the most populated parts of the country, demand is expected to reach its highest levels in January and February 1996, averaging 3.6 million barrels per day.

Distillate refinery production should increase gradually in the first half of the heating season. Typically, higher demand for No. 2 heating oil produces the best distillate refinery margins during that time. Actual deviations from crude oil price assumptions or distillate fuel oil price projections may provide incentives to alter production plans based upon refinery margins.

Price and inventory paths are determined by the interaction between demand, production, and net imports. Retail heating oil prices are expected to peak in January 1996 at about \$0.96 per gallon (Figure FE9). Prices may drop to near \$0.93 per gallon by March 1996 as demand wanes and producers turn refinery production toward gasoline. Distillate fuel oil inventories are expected to peak in November 1995 just under 141 million barrels. December inventories should drop as heating oil demand rises and refinery production falls just short of demand. After December, production should decline and inventory drawdowns will provide the incremental supply.

Currently, net exports are expected from December 1995 through February 1996. But imports should be an important source of incremental supply in response to cold winter weather. Although difficult to forecast, strong demand in the northeastern United States often produces sufficient price differentials to European markets that bring cargoes of heating oil into northern U.S. ports.

In summary, crude oil prices should not place upward pressure on distillate fuel oil prices. As cold weather moves into the most populous parts of the United States, demand should outpace supply from December 1995 through March 1996. This results in the gradual decrease in distillate fuel oil inventories in these same months. The demand peak in January 1996 should coincide with the winter price peak for residential heating oil of about \$0.96 per gallon.

⁷Normal weather (i.e. normal heating degree-days) is defined as a 30-year average of the heating degree days for a given month.

Propane Assessment for Winter 1995 - 1996

by David Hinton & John Zyren*

Summary

Propane demand for the 1995-1996 heating season (defined as October 1995 through March 1996) is expected to return to more normal levels compared with weak demand during last winter's heating season. Propane demand during the 1994-1995 heating season saw lower-than-normal heating demand, due to exceptionally mild winter temperatures, that was partially offset by unprecedented petrochemical feedstock

demand. However, United States and regional inventories of propane appear adequate to meet expected demand this winter, assuming normal weather. As of September 30, 1995 (beginning of the heating season), United States inventories totaled 56.9 million barrels, more than 3 million barrels below the 60-million-barrel level considered by some industry observers as the minimum needed to meet demand without disruption. (Figure FE1) However, unexpected variations in winter severity and/or demand components can significantly

*Michael Burdette, an industry analyst on contract to the Energy Information Administration's Office of Oil and Gas, also contributed to this article.

Figure FE1. U.S. Propane Stocks March 31 and September 30, 1989 - 1995

¹Average level and width of average range based on 3 years of monthly data, January 1992 through December 1994. The significance of the "average range" is to provide a comparison of actual maximum inventory data for the years shown compared to an average range of maximum inventory data for the most recent 3-year period.

²The Observed Minimum for propane stocks is based on final monthly data for the last 36-month period and was 21.8 million barrels, occurring in March 1993. The significance of the Observed Minimum is to provide a comparison of actual minimum inventory data for the years shown compared to a historical minimum level of inventory data.

Sources: Data for 1989 through 1994, Energy Information Administration (EIA), *Petroleum Supply Annual 1989 through 1994*, DOE/EIA-0340(89-94), Volume 1, Table 2; data for January through July 1995, EIA, *Petroleum Supply Monthly 1995*, DOE/EIA-0109(95/03-09), Table 2; and data for August through September 1995, EIA, Form EIA-807 "Propane Telephone Survey."

Unless otherwise referenced, data in this article are taken from the following: *Petroleum Supply Monthly*, July 1995; DOE/EIA-0109 (95/09); *Petroleum Supply Annual 1994*, DOE/EIA-0340, Volumes 1 and 2 and predecessor reports; *Petroleum Marketing Annual*, July 1994, DOE/EIA-0487 (94); *Winter Fuels Report*, Week Ending October 6, 1995, DOE/EIA-0538 (95/96-1), and predecessor reports; and *Short-Term Energy Outlook*, DOE/EIA-0202 (95/3Q) and predecessor reports. All data through 1994 are considered final and are not subject to further revision.

Table FE1. Average¹ Propane Supply and Price
(Million Barrels per Day Except Where Noted)

Category	Winter 1992-1993	Winter 1993-1994	Winter 1994-1995
Production	0.96	0.93	0.99
Imports	0.09	0.12	0.12
Stocks Change	0.21	0.20	0.19
Total Propane Supply ²	1.27	1.25	1.31
Residential Propane Prices (Cents per Gallon)	91.8	88.8	87.0

¹Averages are calculated using monthly data for the winter heating season months October through March.

²Total propane supply is equal to domestic production, imports, and stock change, as reported in various issues of *Petroleum Supply Annual*, DOE/EIA-0340, Table 2. Total propane supply overstates product supplied due to the exclusion of exports and refinery inputs.

Sources: Energy Information Administration, *Petroleum Supply Annual 1994*, DOE/EIA-0240(94), Volume 2, and predecessor reports; and *Winter Fuels Report*, Week Ending: October 6, 1995, DOE/EIA-0538 (95/96-1), Table 8, and predecessor reports.

Note: Totals may not equal sum of components due to independent rounding.

alter the projections and the likelihood of the scenarios discussed in this assessment.

Based on pre-season inventory levels, and assuming normal weather and typical crop-drying demand, U.S. propane stocks are expected to decline gradually over the course of the heating season, ending at about 25 million barrels on March 31, 1996. This projection represents a stock draw of 32 million barrels, less than that seen in the last three seasons, but slightly more than the 5-year average. Given the same conditions, average residential prices would be expected to rise from about 88 cents per gallon in September to a peak of approximately 97 cents in January, before falling to end the season at about 87 cents.

The most significant determinant of winter propane demand is the severity of winter weather. Under two hypothetical alternative scenarios, each including 10-percent-colder-than-normal weather, but spread differently over the 6-month period, supplies remain adequate throughout the heating season. Although inventories would decline more rapidly and end at significantly lower levels under these scenarios, price impacts would be moderate, with peak prices only about 1 cent higher, and slower price declines late in the season, to ending prices about 2 to 6 cents higher.

Evaluating the accuracy of last year's assessment of propane supplies, based on the same three scenarios, the "Base Assessment" scenario¹ was the closest to actual weather conditions during the 1994-1995 winter heating season. In this scenario, average winter weather occurred throughout the Nation and the heating season, with primary stocks ending at approximately 32 million barrels. Comparatively, last winter's actual temperatures were moderately warmer than normal throughout the United States. However, a large stock draw in October 1994, due to strong petrochemical feedstock demand for propane, dropped inventories below the expected path, where they remained throughout the season, ending at about 26

million barrels at the end of March. Residential price increases were much less than anticipated early in the season, but also fell less rapidly, ending the heating season at 88 cents per gallon compared with a projected price of 84 cents per gallon.

This article reviews the major components of propane supply and demand in the United States and their status entering the 1995-1996 heating season. Other influences on prices are also discussed. Finally, a base case and two adverse scenarios are described for the heating season assessment, focusing on inventory levels and residential prices.

Supply

Demand for propane is met from domestic production, inventory withdrawals, and imports. While domestic production accounts for the largest share of propane supply, inventory withdrawals and imports are also important sources of supply, particularly during peak demand periods in the heating season (Table FE1). Over the last 3 years, domestic production from natural gas processing facilities and refineries has averaged about three-fourths share of U.S. supply of propane during the winter heating season. During this same period, inventory drawdowns and imports, which provided the remainder of U.S. propane supply, accounted for shares of 16 percent and 9 percent, respectively.

The supply of propane from domestic production has shown phenomenal growth during 1995. Through July 1995, domestic production was up by 7.2 percent compared with the same period last year. This contrasts sharply with recent year growth rates which have averaged less than 3 percent a year since 1990. Both natural gas plants and refineries reported higher production volumes during 1995, although most of the year-to-date 1995 increase was attributed to higher production at refineries. Moreover, gas plant production and refinery production are now roughly equivalent, in contrast to prior

¹ Energy Information Administration, *Winter Fuels Report*, Week Ending October 21, 1994, DOE/EIA-0538 (94/95-3) "Propane Assessment for Winter 1994-1995."

years when gas plant production was dominant. The increase in refinery production of propane was primarily attributable to higher crude runs at refineries in association with the increase in production of some products such as motor gasoline. Since propane is essentially a byproduct of other refinery operations, higher refinery production of products such as motor gasoline promotes higher production of propane. The modest increase in gas plant production of propane was partly attributable to the practice away from ethane rejection² that occurred during 1994.

Inventory withdrawals³ provide the second largest source of propane during the winter. Because demand is strongest during the winter heating season, primary stockholders build up their inventories during the spring and summer months as a source of supplemental supply. Although peak inventory levels have varied over the years, industry observers generally look for 60 million barrels at the start of the heating season as the minimum needed to meet demand without disruption. As of September 30, 1995, U.S. inventories stood at an estimated 56.9 million barrels, a level that was well within the average range of the last 3 years.

Inventory withdrawals totaled more than 34 million barrels during the 1994-1995 heating season, or about 15 percent of total propane supply. Both the level of inventory withdrawals and their share of total propane supply were slightly above their average ranges compared with recent years despite winter weather that was the third mildest this century. Nonetheless, inventories finished the heating season at 26.1 million barrels by the end of March 1995, a level within the average range of recent years and the highest end-of-March level since 1992. Conversely, U.S. stocks of propane were built up at an above average 30.9 million barrels between April and September 30, 1995, despite downward pressure exerted by unprecedented petrochemical feedstock demand and lackluster waterborne imports. However, the 1995 stockbuild contrasted sharply from prior years because most of the build occurred relatively late in the build cycle. This situation was cause for concern during the spring and early summer months when stocks trailed historical norms by as much as 5 million barrels. However, strong stockbuilds during July and August moved U.S. inventories within the normal range which eased industry concerns over low stock levels.

The smallest component of U.S. supply of propane is from imports.⁴ Imports provide a vital source of supply when consumption rates exceed the rates of available supplies of propane from domestic production and inventories.

²"Ethane rejection" generally occurs when natural gas prices are high in relation to natural gas liquids (NGL) prices and gas plant operators, in order to maximize their profit margins, leave (reject) the ethane in the natural gas stream. However, ethane rejection also lowers the content of the NGL stream which is reflected in lower propane production from gas plant operations.

³"Inventory withdrawals" is the same as "Stock Change" as reported in the *Petroleum Supply Annual*, DOE/EIA-0340, Table 2.

⁴Gross imports, rather than net imports, are used in assessing the adequacy of propane supply data due to the relatively small volumes of exports which are mostly destined for Mexico.

⁵Propane imports by country of origin are derived from Form EIA-814.

⁶The National Energy Board of Canada reports propane inventories as "specification" grade (pure propane) and "mix" grade (propane mixed with ethane and/or butane).

Moreover, imports provide an important source for incremental supplies during the stockbuilding period, which typically lasts from April to September. Imports accounted for 9 percent of total propane supply during the 1994-1995 heating season, about average compared with recent years. During the first 7 months of 1995, propane imports averaged 94 thousand barrels per day, down nearly 18 percent from the same period last year. The 1995 decline in imports was the result of low demand, due to the mild winter and high domestic production, which partially offset the need for additional imports.

Imports of propane are primarily of two origins, Canada and waterborne supplies from offshore countries such as Algeria, Saudi Arabia, Venezuela, Norway, and the United Kingdom.⁵ The leading exporter of propane to the United States is Canada, since the country consumes only about half of its supply of propane and generally exports the remainder to the United States.

During the first 7 months of 1995, Canadian imports totaled 64 million barrels, relatively unchanged from the same period last year. However, Canada accounted for nearly 68 percent of all propane imports through July 1995, up from about 55 percent during the first 7 months of 1994. Although Canadian inventories of specification⁶ propane were down about 8 percent as of September 1, 1995, compared with the same period a year earlier, Canadian imports are expected to remain an important source for incremental supplies of propane throughout the 1995-1996 heating season.

Non-Canadian imports are waterborne supplies mostly from countries in the Persian Gulf, North Africa, the North Sea, and South America. The most significant development this year has been the sharp drop in the volume of waterborne imports of propane compared with 1994. Through July 1995, waterborne imports measured 30 million barrels, down 40 percent compared with the same period last year. Part of the decline in overall imports can be attributed to strong domestic production and a mild winter, which combined to reduce the need for additional imports during 1995. However, the decline in waterborne imports reflects in part the virtual absence of imports from Saudi Arabia during 1995, due to its shift away from a crude oil based pricing policy.

Regionally, propane inventories as of September 30, 1995, are either within or above their respective normal ranges for this time of year. East Coast (PAD District I) propane markets, particularly the Northeast, are most susceptible to supply

Figure FE2. Propane Stocks of Major Petroleum Administration for Defense (PAD) Districts, September 30, 1993-1995

Sources: Energy Information Administration (EIA), *Petroleum Supply Annual 1994*, DOE/EIA-0340(94)/2, Volume 2, and predecessor reports; and *Winter Fuels Report*, Week Ending: October 6, 1995, DOE/EIA-0538 (95/96-1).

disruptions because of its end-of-the-pipeline location, limited refinery production, and its reliance on waterborne imports for supplemental supplies. Because of these drawbacks, East Coast markets have the lowest concentration of residential households using propane as their main heating fuel. As of the end of September, East Coast inventories of propane stood at 5.1 million barrels, about 3 percent higher than the year earlier and above its average range for this time of year (Figure FE2). Propane stocks at the East Coast, including the Northeast, are expected to be adequate for this winter.

Because of their close proximity to the major supply centers, Midwest propane markets are less vulnerable to supply disruptions than are East Coast markets. However, the Midwest region contains the highest concentration of residential heating customers of any region. Midwest stocks, at 23.0 million barrels as of September 30, were below last year's level at this time but were well within the normal range of recent years. Assuming brisk pre-buy activity by residential/commercial users and normal weather, no major supply disruptions or transportation problems are anticipated in the Midwest region during the upcoming winter heating season.

The Gulf Coast region produces far in excess of the region's demand for propane and contains the vast majority of the Nation's propane storage capacity. The region also contains the highest concentration of petrochemical plants in the United States. Petrochemical plants are the largest consumers of propane. Consequently, the Gulf Coast region is considered the Nation's primary supply hub. As of September 30, Gulf Coast stocks were 27.5 million barrels, about 2 percent above last year's level at this time and were within the normal range for this time of year.

Demand

Propane markets have continued to show steady growth throughout much of the 1990's. Between 1990 and 1994, propane demand averaged a growth rate of more than 4 percent per year. Through July 1995, propane demand was up by more than 6 percent over the same period last year despite low heating demand due to mild winter temperatures.

The primary factors that affect propane demand in the United States are crude oil and natural gas prices, macroeconomic

growth, and weather. Propane enjoys a wide variety of end use markets, including residential/commercial, industrial, petrochemical, agricultural, transportation, and utility. The percentage breakdown of propane demand by consuming sectors includes: residential/commercial (33 percent), petrochemical (42 percent), agricultural (9 percent),⁷ and industrial, utility and other end use sectors (16 percent).

Residential/commercial markets consume propane for space heating, water heating, cooking, and clothes drying. Because of the predominance of space heating requirements, compared with other end-uses, residential/commercial demand for propane is concentrated during the winter months. Furthermore, the primary space heating customers are located in the Northeast (PAD District I) and the Midwest regions (PAD District II). For this reason, residential/commercial demand for propane is extremely weather-dependent. Although severe weather in prior years has caused supply problems, increased use of residential/commercial storage capacity can be very effective in minimizing the potential for propane market disruptions. Vulnerability to disruptions could be reduced significantly by increased use of the "keep full" contract (customer is refilled on a regular basis), rather than the traditional "cash basis" contract (customer is refilled upon request).

The petrochemical industry constitutes the largest market for propane and is primarily concentrated on the Gulf Coast region (PAD District III). Petrochemical plants use propane primarily as a feedstock in the manufacture of plastics and chemicals. Moreover, propane competes with other feedstocks on the basis of price and availability.

Petrochemical feedstock demand for propane has grown significantly over the past several years. Through September 1995, petrochemical feedstock consumption of propane averaged 361 thousand barrels per day. For 1993 and 1994, feedstock consumption of propane averaged 284 thousand barrels per day and 327 thousand barrels per day, respectively.⁸ Most of this growth has been in response to continued strong domestic demand for petrochemical products, recent capacity expansions at petrochemical plants, and the low dollar exchange rates with foreign currencies that have contributed to support a strong export market for U.S. chemical products abroad. If these market trends continue into the heating season and adverse weather patterns are experienced over the major space heating regions of the Nation, the potential risk for spot shortages and/or supply disruptions is greater. However, recent market activity suggests a softening of demand for petrochemical feedstock use for propane which, over the course

of the heating season, may ease some of the downward pressure on inventories in the Gulf Coast region.

Agricultural demand for propane accounts for the smallest market share of propane. Typical applications include crop drying, flame weeding, tobacco curing, defoliation, poultry brooding, frost protection, and use as a fuel to power farm equipment and irrigation pumps. Agricultural sector demand is primarily concentrated in the Midwest States of Iowa, Illinois, Nebraska, Minnesota, and Ohio (PAD District II) and is usually heaviest between late summer and early winter. The major component of agricultural sector demand is for crop drying, which can vary greatly from year to year depending on crop size, moisture content, and weather. Although small in comparison to other end use markets, agricultural demand has caused minor supply problems in past years. Generally, a combination of factors needs to occur for this to happen, such as during the fall of 1992 when heavy rains produced a near record corn crop that was both extremely wet and later than usual. These conditions caused the crop drying season to overlap the beginning of the residential heating season which caused stocks in the Midwest region to be drawn down much faster than normal.

United States corn production in 1995 is projected at 7.8 billion bushels according to the U.S. Department of Agriculture's latest 1995 forecast.⁹ This level is 22 percent below last year's record 10.1 billion bushels and reflects a 10-percent drop in planted acreage and an expected 9-percent drop in yield.¹⁰ With PAD District II inventories of propane at above average levels for this time of year, and assuming normal weather through the harvest season, crop drying demand is not expected to impact the heating fuels market this winter.

Prices

Market prices for propane are influenced by many factors, including prices for crude oil, natural gas, and competing products, and the propane supply/demand balance. In the United States, the benchmark prices for propane throughout the industry are the daily spot market quotations at Mont Belvieu, Texas, and Conway, Kansas, and the NYMEX futures prices, also for delivery at Mont Belvieu. Mont Belvieu is a storage and distribution hub for the Gulf Coast area, especially serving the petrochemical industry, while Conway serves the same function in the mid-continent area. Both centers are connected to the pipeline networks serving residential and commercial markets throughout the eastern United States. However, limited pipeline capacity between the two centers sometimes leads to price disparities during high-demand periods.

⁷ American Petroleum Institute, *Sales of Natural Gas Liquids and Liquefied Refinery Gases*, October 1994, Table 4. pp. 6 and 7.

⁸ The Current U.S. Butadiene Situation and Steam Cracker Operations, Hodson & Company Inc., Houston, Texas, September 1995 Newsletter, Volume XIX, Number 8; and predecessor issues.

⁹ *Crop Production Report*, National Agricultural Statistics Service, U.S. Department of Agriculture, CrPr 2-2(9-95), p. A-4.

¹⁰ *Agricultural Outlook*, Economic Research Service, U.S. Department of Agriculture, September 1995, AO-222, p. 4.

U.S. propane prices have been relatively stable throughout 1995, except for a brief spike in Conway prices at the beginning of March. Spot prices¹¹ at both Mont Belvieu and Conway have traded between 29 and 34 cents per gallon since the end of the 1994-1995 heating season. By contrast, West Texas Intermediate (WTI) crude oil prices climbed to over \$20.50 per barrel in late April 1995, then fell to barely \$17 in July, and began the heating season below \$18. Spot prices for natural gas, the other major source of propane, have been well below last year's levels throughout 1995.

Assessment Scenarios

Starting from the known supply, demand, and price levels for propane at the beginning of the heating season, the expected conditions over the course of the season can be estimated based on assumptions about the variables that affect propane markets. For the purposes of this assessment, Scenario 1 (base assessment) assumes winter temperatures (as measured by heating degree-days)¹² equal to the historical (1961-1990) average, and all other non-weather-related demand and supply factors remaining at typical historical levels. In order to test the responsiveness of propane markets and supplies to various

conditions, two alternative scenarios were considered. Scenario 2 (cold season) assumes uniformly colder temperatures (10 percent more heating degree-days) for the entire October through March heating season. Scenario 3 (cold winter) assumes a concentration of extreme winter temperatures (17 percent more heating degree-days) during the second half (January through March) of the heating season.

Based on current inventory levels and projected supply and demand, the expectation for the 1995-1996 winter heating season is for adequate supplies and moderate prices, given normal weather and the absence of any major supply problems. Although total U.S. inventories ended the previous heating season at a relatively low 26.1 million barrels, stocks had been rebuilt to a typical historical level of 56.9 million barrels by the end of September. Assuming average temperatures and typical crop drying demand, stocks are projected to gradually decline over the course of the season, reaching a level of about 25 million barrels by the end of March 1996¹³ (Figure FE3). That ending level would be slightly below the last two winters', but above that reached in 1993. Under this projection, the total propane stockdraw over the heating season would be about 32 million barrels, near the average of the past 5 years. Residential prices would be expected to increase seasonally from about 88

¹¹Spot prices quoted are from Reuters Information Services, Inc.

¹²Heating degree-days are the number of degrees that the daily average temperature falls below 65 degrees Fahrenheit.

¹³To evaluate the scenarios, the Propane Market Model (DOE/EIA-M055) was used to forecast the retail price and demand (product supplied) of propane. The model uses historical monthly data series covering the January 1989 through July 1994 time period, and also uses EIA forecasts of imported crude oil price for its projections. The model consists of a two-equation system estimated by ordinary least squares with correction for autocorrelation and a provision for the calculation of end-of-month stock levels.

Figure FE3. Effect of Alternative Weather Scenarios on Propane Stock Assessment

Sources: September 1995; Energy Information Administration, Form EIA-807, "Propane Telephone Survey", October 1995 - March 1996; Estimates derived from the Propane Market Model (DOE/EIA-M055).

cents per gallon in September to a peak of 97 cents in January, then fall to about 87 cents by the end of March (Figure FE4). These prices are significantly above those seen last winter, when temperatures were warmer-than-normal, due to the expected return to average levels.

If, instead of average temperatures, the weather is moderately colder (10 percent more heating degree-days) throughout the heating season and the Nation, propane supplies and prices in the United States would be significantly affected, but would remain adequate. Inventories would decline at a faster rate over the entire season, and would end March at about 19 million barrels, about 6 million barrels lower than with normal weather and slightly below the 1993 level. Residential propane prices would reach a peak only about 1 cent higher, at 98 cents in February, and would end the season about 2 cents higher, at 89 cents per gallon.

Under a different severe weather scenario, the colder weather is concentrated in a 3-month period, rather than spread evenly throughout the heating season. The 10-percent increase in heating degree-days for the season, applied entirely to the months of January through March (representing a 17-percent increase for those months), would actually result in a slightly lower end-of-season inventory level. U.S. propane stocks would be projected to end the season at under 19 million barrels, due to the shorter period of time available for production and imports to respond to the higher demand during the peak winter months. The impact of this scenario on residential prices would be more significant. With colder weather concentrated in the second half of the season, the projected result would be a slower decline and a higher season-ending price of nearly 93 cents per gallon.

Figure FE4. Effect of Alternative Weather Scenarios on Residential Propane Price Assessment

Sources: September 1995; Energy Information Administration, Forms EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report", and EIA-782B, "Resellers'/Retailers' Monthly Petroleum Product Sales Report," October 1995 - March 1996; Estimates derived from the Propane Market Model (DOE/EIA-M055).

Highlights

Liquefied petroleum gases are stored in pressurized tanks while other products are stored in conventional tanks.

Highlights

DISTILLATE FUEL OIL

Although distillation stocks decreased to 128.7 million barrels (MMB), stocks rose in PAD I. Stocks dipped by 1.4 MMB in PAD III. Stocks are 17.1 MMB less than a year ago and down by 2.9 MMB from last week. Stocks are below the three-year average range and have declined over the last two weeks. Imports declined by 59 percent from the previous week.

Distillate production remained at 3.2 million barrels per day (MMBD), and demand jumped to 3.6 MMBD.

Table H1. Distillate Fuel Oil
(Thousand Barrels per Day, Except Where Noted)

	Week Ending		
	10/27/94	10/20/95	10/27/95
Production	3,203	3,164	3,199
Imports	159	205	85
Product Supplied	3,066	3,422	3,614
Ending Stocks (million barrels)			
East Coast (PADD I)	70.4	60.1	60.7
Midwest (PADD II)	30.1	29.6	28.2
Gulf Coast (PADD III)	30.9	28.2	26.8
U.S. Total	145.8	131.6	128.7

Source: Energy Information Administration (EIA),

PROPANE

The nation's supply of propane for the week ending October 27, 1995, was 56.4 million barrels (MMB), a modest gain of 0.4 MMB from the prior reporting period. This level remains within its normal range for this time of year.

Regionally, inventory levels rose in East Coast and Midwest regions by 0.1 MMB and 0.3 MMB, respectively, while in the Gulf Coast stocks declined by 0.1 MMB. Inventories for the East Coast and Midwest regions moved above their respective normal ranges for this time of year but remain below the normal range in the Gulf Coast region.

**Table H2. Propane/Propylene Stocks by Petroleum Administration for Defense Districts (PADD) I, II, and III
(Thousand Barrels)**

PAD Districts	September 1994	October 1994	Week Ending				
			10/06/95	10/13/95	10/20/95	10/27/95	11/03/95
East Coast (PADD I)	4,926	5,386	^E 4,719	^E 4,857	^E 4,962	^E 5,076	
Midwest (PADD II)	26,383	23,630	^E 22,898	^E 23,128	^E 22,275	^E 22,596	
Gulf Coast (PADD III)	26,977	23,721	^E 27,904	^E 27,716	^E 26,992	^E 26,899	
Total (PADD I-III)	58,286	52,737	^E 55,521	^E 55,701	^E 54,229	^E 54,571	
U.S. Total	60,416	54,980	^E 57,415	^E 57,601	^E 56,080	^E 56,433	

^E= Estimated data.

Source: Energy Information Administration (EIA), Monthly Petroleum Supply Reporting System and Form EIA-807, "Propane Telephone Survey."

NATURAL GAS

Supply and Disposition

The Energy Information Administration (EIA) estimates that total gas supply available for disposition in August 1995 was an estimated 1,795 billion cubic feet, almost the same as in August 1994. The August 1995 total includes 10 billion cubic feet of supplemental fuel supplies, 235 billion cubic feet of imported gas, and 80 billion cubic feet withdrawn from storage.

On the disposition side, the August 1995 consumption of 1,502 billion cubic feet was 6 percent greater than in August 1994. Total disposition included 276 billion cubic feet of gas injected into underground storage reservoirs and exports of 16 billion cubic feet.

Consumption

Data for the four major end-use sectors indicate that the total amount of gas delivered to all consumers increased from 1,256 billion cubic feet in June 1995 to 1,356 billion cubic feet in July 1995. Consumption in the industrial sector increased from 666 billion cubic feet in June 1995 to 685 billion cubic feet in July 1995, an increase of 3 percent.

The electric utility sector consumed 405 billion cubic feet in July 1995, which is a 36-percent increase from June 1995 and a 12-percent increase from July 1994.

The residential sector consumed 134 billion cubic feet and the commercial sector consumed 132 billion cubic feet in July 1995.

Natural Gas Prices

In July 1995, major interstate pipeline companies paid an average of \$1.91 per thousand cubic feet for gas purchased from domestic producers, a decrease from the \$2.03 total in June 1995. In July 1995, these pipeline companies paid \$1.10 per thousand cubic feet for imported gas. Distributors paid an average of \$2.88 per thousand cubic feet for gas at the city gate in July 1995.

PRICES

Wholesale and residential heating oil prices showed little movement during the two-week period ending October 16, 1995. Mixed spot prices and seasonal stock builds helped keep distillate prices stable. Wholesale heating oil prices stood at 51.2 cents per gallon, a drop of 0.2 cent from October 2, 1995. Residential heating oil prices showed a reverse trend, increasing 0.3 cent, to 90.2 cents per gallon.

Similar to heating oil, residential and wholesale propane prices remained relatively stable during the fortnight. The average wholesale propane price increased 0.4 cent, to 37.4 cents per gallon, while the residential price remained unchanged at 88.5 cents per gallon.

Table H3. Residential Heating Oil Prices by Petroleum Administration for Defense Districts
(Cents per Gallon)

PAD Districts	October 1994	November 1994	Week Ending	
			10/02/95	10/16/95 ^P
Average	90.3	91.2	89.9	90.2
East Coast	91.3	92.1	90.9	91.2
New England	84.9	85.9	85.0	85.3
Central Atlantic	96.1	96.8	95.5	95.9
Lower Atlantic	88.7	89.5	88.4	88.0
Midwest	82.8	84.0	82.5	82.3

P=Preliminary data.

Source: Based on data collected by State Energy Offices.

Table H4. Residential Propane Prices by Petroleum Administration for Defense Districts
(Cents per Gallon)

PAD Districts	October 1994	November 1994	Week Ending	
			10/02/95	10/16/95 ^P
Average	84.6	85.6	88.5	88.5
East Coast	113.4	115.1	112.8	113.0
New England	113.7	113.6	115.2	116.1
Central Atlantic	118.4	121.4	114.9	114.8
Lower Atlantic	104.2	105.3	104.2	104.4
Midwest	71.4	72.4	73.5	74.2

P=Preliminary data.

Source: Based on data collected by State Energy Offices.

Distillate Fuel Oil

Overall view of a typical bulk terminal facility.

Table 1. Monthly and Weekly Net Production, Imports, and Stocks of Distillate Fuel Oil by Petroleum Administration for Defense District (PADD) and Product Supplied for the United States
(Thousand Barrels per Day, Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total U.S.												
Net Production^a												
1993	2,914	2,815	2,919	3,047	2,994	3,093	3,186	3,100	3,205	3,432	3,474	3,382
1994	3,114	3,018	3,096	3,249	3,317	3,285	3,191	3,187	3,285	3,203	3,270	3,232
1995	3,055	2,954	3,156	3,125	3,111	3,114	3,041	3,130				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	3,296	3,264	3,371	3,238	3,369	3,289	3,260	3,164	3,199			
0.05% Sulf & Under	2,095	2,077	2,173	2,151	2,166	2,048	2,047	2,010	2,025			
Greater than 0.05%	1,201	1,187	1,198	1,087	1,203	1,241	1,213	1,154	1,174			
Imports												
1993	182	224	235	209	153	168	130	159	137	242	214	160
1994	161	276	318	226	202	182	164	211	193	159	166	187
1995	270	287	188	125	108	176	157	171				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	63	227	63	109	203	81	214	205	85			
0.05% Sulf & Under	27	55	25	44	125	72	107	56	34			
Greater than 0.05%	36	172	38	65	78	9	107	149	51			
Stocks (Million Barrels)												
1993	130.7	110.4	97.3	99.5	102.8	110.0	120.7	128.2	131.3	145.3	149.2	140.9
1994	117.5	102.9	99.4	102.6	112.4	119.5	134.2	138.6	144.7	146.0	147.3	145.2
1995	140.4	121.9	115.5	114.6	118.8	114.8	125.1	130.9				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	127.3	129.9	133.6	131.7	132.0	131.4	133.5	131.6	128.7			
0.05% Sulf & Under	61.1	62.3	64.4	63.6	63.9	63.5	63.5	62.9	61.6			
Greater than 0.05%	66.2	67.6	69.3	68.1	68.1	68.0	70.0	68.7	67.1			
Product Supplied												
1993	3,128	3,465	3,420	2,943	2,685	2,863	2,674	2,820	2,973	2,983	3,218	3,357
1994	3,698	3,581	3,307	3,116	2,912	3,062	2,663	3,063	3,133	3,066	3,180	3,203
1995	3,335	3,689	3,336	3,108	2,883	3,284	2,718	3,031				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	2,720	2,908	2,689	3,413	3,303	3,234	2,957	3,422	3,614			
East Coast (PADD I)												
Net Production^a												
1993	374	335	335	410	381	426	417	372	390	465	453	436
1994	377	424	375	346	427	475	408	408	379	408	426	391
1995	417	416	444	390	354	389	405	437				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	398	385	451	454	494	412	447	454	411			
0.05% Sulf & Under	162	146	193	182	235	177	189	166	178			
Greater than 0.05%	236	239	258	272	259	235	258	288	233			
Stocks (Million Barrels)												
1993	58.8	43.3	32.6	35.3	37.7	43.3	51.6	59.1	63.8	72.1	69.5	62.5
1994	41.9	35.1	33.3	33.4	39.3	48.7	57.5	64.7	69.3	70.6	69.8	66.3
1995	63.4	50.6	45.9	42.2	42.1	43.9	51.6	58.1				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	54.1	56.5	56.6	57.5	58.8	57.5	60.8	60.1	60.7			
0.05% Sulf & Under	14.5	15.1	14.8	15.5	15.9	15.8	17.0	16.5	17.9			
Greater than 0.05%	39.6	41.4	41.8	42.0	42.9	41.7	43.8	43.6	42.8			

See footnotes at end of table.

Table 1. Monthly and Weekly Net Production, Imports, and Stocks of Distillate Fuel Oil by Petroleum Administration for Defense District (PADD) and Product Supplied for the United States (Continued)
(Thousand Barrels per Day, Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
New England (PADD IX)												
Stocks (Million Barrels)												
1993	10.1	8.1	5.2	5.3	5.5	7.6	8.9	10.6	10.6	12.9	11.7	10.6
1994	7.2	5.8	5.3	4.3	4.8	8.3	12.3	13.1	14.5	14.3	13.2	11.9
1995	11.5	9.0	7.8	7.1	8.0	8.5	11.7	13.1				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	11.8	12.2	12.7	12.7	13.2	13.3	14.0	13.3	13.5			
0.05% Sulf & Under	2.0	2.0	2.2	2.0	2.3	2.6	2.9	2.6	2.7			
Greater than 0.05%	9.8	10.3	10.5	10.7	11.0	10.7	11.1	10.7	10.7			
Central Atlantic (PADD IV)												
Stocks (Million Barrels)												
1993	34.9	24.1	16.8	20.2	21.6	25.1	31.1	37.4	40.8	45.1	43.3	37.6
1994	22.7	18.7	17.7	17.3	22.0	28.5	32.4	39.4	43.4	44.3	43.5	40.3
1995	38.9	29.8	26.1	23.8	22.4	23.7	28.1	32.1				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	31.6	32.3	32.9	32.5	33.0	33.3	34.1	34.3	35.1			
0.05% Sulf & Under	6.6	6.6	6.7	6.5	7.2	7.2	7.3	7.1	7.6			
Greater than 0.05%	25.1	25.7	26.2	26.0	25.8	26.1	26.8	27.2	27.5			
Lower Atlantic (PADD IZ)												
Stocks (Million Barrels)												
1993	13.8	11.1	10.6	9.7	10.6	10.5	11.6	11.1	12.3	14.1	14.5	14.3
1994	12.0	10.6	10.3	11.8	12.5	11.9	12.8	12.1	11.3	12.0	13.0	14.2
1995	13.1	11.8	12.0	11.4	11.7	11.6	11.8	12.9				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	10.7	12.0	11.1	12.3	12.5	11.0	12.7	12.5	12.2			
0.05% Sulf & Under	5.9	6.6	5.9	7.0	6.4	6.0	6.8	6.8	7.6			
Greater than 0.05%	4.7	5.4	5.2	5.3	6.1	4.9	5.9	5.7	4.6			
Midwest (PADD II)												
Net Production^a												
1993	760	694	723	732	738	751	756	707	757	863	875	831
1994	745	729	775	829	783	782	791	802	799	785	813	854
1995	796	703	733	763	742	750	754	773				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	818	768	785	835	836	848	774	727	770			
0.05% Sulf & Under	586	537	566	604	570	540	504	449	452			
Greater than 0.05%	232	231	219	231	266	308	270	278	318			
Stocks (Million Barrels)												
1993	32.5	29.8	29.3	28.4	27.3	28.1	29.0	27.5	27.7	30.5	33.8	34.4
1994	31.7	28.8	27.3	30.6	30.9	30.4	33.6	32.7	32.0	30.8	31.4	34.7
1995	34.9	31.2	30.5	32.6	33.4	29.6	31.4	30.5				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	31.2	31.8	31.8	32.3	32.3	31.4	31.2	29.6	28.2			
0.05% Sulf & Under	20.7	21.4	21.6	22.1	22.1	21.1	20.6	20.2	18.4			
Greater than 0.05%	10.4	10.4	10.2	10.2	10.1	10.3	10.6	9.4	9.8			

See footnotes at end of table.

Table 1. Monthly and Weekly Net Production, Imports, and Stocks of Distillate Fuel Oil by Petroleum Administration for Defense District (PADD) and Product Supplied for the United States (Continued)
(Thousand Barrels per Day, Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gulf Coast (PADD III)												
Net Production^a												
1993	1,299	1,271	1,316	1,349	1,281	1,342	1,430	1,476	1,444	1,488	1,525	1,554
1994	1,460	1,341	1,399	1,472	1,510	1,437	1,413	1,412	1,521	1,419	1,438	1,412
1995	1,329	1,319	1,409	1,387	1,387	1,395	1,324	1,329				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	1,473	1,470	1,496	1,359	1,435	1,426	1,422	1,355	1,438			
0.05% Sulf & Under	882	898	935	891	913	887	881	907	940			
Greater than 0.05%	591	572	561	468	522	539	541	448	498			
Stocks (Million Barrels)												
1993	27.0	24.8	23.2	23.6	24.3	25.4	26.8	29.4	28.6	29.8	30.9	29.0
1994	29.7	25.5	25.4	24.6	27.3	26.2	28.7	28.1	31.0	30.9	30.2	28.3
1995	26.5	25.8	25.3	25.8	28.0	27.1	27.8	28.2				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	28.1	27.4	30.8	28.1	27.8	29.6	28.2	28.2	26.8			
0.05% Sulf & Under	15.7	15.3	17.1	15.8	16.1	17.0	16.0	16.2	15.8			
Greater than 0.05%	12.4	12.0	13.7	12.4	11.6	12.6	12.2	12.0	11.1			
Rocky Mountain (PADD IV)												
Net Production^a												
1993	103	109	113	109	132	125	121	124	149	134	141	125
1994	123	122	115	130	141	136	127	127	132	128	130	131
1995	121	121	127	124	135	140	132	135				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	132	137	141	110	127	114	116	118	120			
0.05% Sulf & Under	104	109	112	97	96	98	92	104	101			
Greater than 0.05%	28	28	29	13	31	16	24	14	19			
Stocks (Million Barrels)												
1993	2.5	2.4	2.4	2.0	2.4	2.3	2.4	2.1	2.2	2.1	2.7	2.8
1994	3.0	3.1	2.5	2.6	3.0	2.7	2.6	2.1	2.3	2.5	2.7	3.2
1995	3.1	2.8	2.7	2.3	2.6	2.9	2.9	2.3				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	2.5	2.7	2.6	2.6	2.5	2.5	2.3	2.2	2.2			
0.05% Sulf & Under	2.1	2.2	2.1	2.1	2.0	2.0	1.9	1.8	1.9			
Greater than 0.05%	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3			
West Coast (PADD V)												
Net Production^a												
1993	378	406	433	446	462	450	461	420	465	482	479	437
1994	409	402	431	472	455	454	452	439	453	463	464	445
1995	392	396	443	460	494	440	425	457				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	475	504	498	480	477	489	501	510	460			
0.05% Sulf & Under	361	387	367	377	352	346	381	384	354			
Greater than 0.05%	114	117	131	103	125	143	120	126	106			
Stocks (Million Barrels)												
1993	10.0	10.1	9.9	10.2	11.0	10.9	10.9	10.0	9.0	10.8	12.2	12.2
1994	11.3	10.5	10.9	11.4	12.0	11.4	11.7	10.9	10.2	11.3	13.2	12.7
1995	12.5	11.5	11.0	11.6	12.6	11.3	11.5	11.7				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
Total	11.5	11.5	11.6	11.1	10.7	10.4	11.0	11.5	10.8			
0.05% Sulf & Under	8.1	8.3	8.7	8.1	7.8	7.5	8.0	8.2	7.7			
Greater than 0.05%	3.4	3.2	3.0	3.0	2.9	2.9	3.0	3.3	3.1			

^a Net production equals gross production minus input. Negative production will occur when the amount of product produced during the month is less than the amount of that same product reprocessed (input) or reclassified to become another product during the same month.

Notes: • Totals may not equal sum of components due to independent rounding. • Sum of PADD's IX, IV, and IZ may not equal PADD I because of independent estimation.

Source: Energy Information Administration, Weekly and Monthly Petroleum Supply Reporting Systems. Magnitudes of revisions to monthly data are published in Appendix C of the *Petroleum Supply Monthly*.

Figure 1. U.S. Distillate Fuel Oil Production

Source: • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Production: Estimates based on weekly data collected on Form EIA-800.

Figure 2. U.S. Distillate Fuel Oil Imports

Source: • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Imports: Estimates based on weekly data collected on Form EIA-804.

Figure 3. U.S. Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 97.3 million barrels, occurring in March 1993.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Figure 4. PADD I (East Coast) Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 32.6 million barrels, occurring in March 1993.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

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Figure 5. PADD II (Midwest) Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 27.3 million barrels, occurring in both May 1993 and March 1994.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Figure 6. PADD III (Gulf Coast) Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 23.2 million barrels, occurring in March 1993.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Figure 7. PADD IV (Rocky Mountain) Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 2.0 million barrels, occurring in September 1992.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Figure 8. PADD V (West Coast) Distillate Fuel Oil Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992-June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for distillate fuel oil stocks in the last 36 month period was 9.0 million barrels, occurring in September 1993.

Source: • Data for Ranges and Seasonal Patterns: 1988-1994, Energy Information Administration (EIA), *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*. • Monthly Data: 1994, EIA, *Petroleum Supply Annual*; 1995, *Petroleum Supply Monthly*. • Week-Ending Stocks: Estimates based on weekly data collected on Forms EIA-800, -801, and -802.

Propane

Spherical tanks are used to store liquefied petroleum gases under pressure.

Table 2. Monthly and Weekly Net Production, Imports, and Stocks of Propane/Propylene by Petroleum Administration for Defense Districts (PADD) I, II, and III
(Thousand Barrels per Day, Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total U.S.												
Net Production ^a												
1993	968	964	966	980	951	967	963	960	969	954	963	953
1994	889	905	939	978	976	978	977	980	1008	954	1002	1034
1995	1002	983	1013	1029	1042	1038	1011	1009				
Imports												
1993	79	82	85	108	96	75	118	116	132	107	138	102
1994	141	128	87	83	90	117	151	135	133	164	137	127
1995	108	94	90	107	73	114	73	107				
Stocks (Million Barrels)												
1993	32.3	25.2	21.8	29.0	37.2	45.1	53.1	58.6	61.4	61.0	57.3	51.2
1994	33.6	25.0	25.4	31.1	40.6	48.0	54.8	58.1	60.4	55.0	53.7	46.5
1995	35.7	25.6	26.1	30.8	37.2	42.8	50.1	55.5	E 56.9			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 57.4	E 57.6	E 56.1	E 56.4			
East Coast (PADD I)												
Net Production ^a												
1993	57	54	52	56	55	58	56	54	56	60	55	54
1994	46	55	54	53	55	54	54	57	48	57	60	59
1995	57	56	58	53	54	61	56	56				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 34	E 39	E 65	E 70			
Imports												
1993	23	25	17	23	4	17	8	4	18	14	22	24
1994	45	54	29	5	17	5	21	4	23	6	29	29
1995	31	26	24	14	5	11	9	17				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 8	E 7	E 7	E 6			
Stocks (Million Barrels)												
1993	3.2	1.9	1.6	2.2	2.7	3.8	4.3	4.2	4.4	4.5	4.3	3.7
1994	1.9	2.2	2.4	2.8	3.6	4.1	5.3	5.0	4.9	5.4	5.8	5.5
1995	4.1	2.6	2.0	2.1	2.8	3.0	4.1	5.1	E 5.1			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 4.7	E 4.9	E 5.0	E 5.1			

See footnotes at end of table.

Table 2. Monthly and Weekly Net Production, Imports, and Stocks of Propane/Propylene by Petroleum Administration for Defense Districts (PADD) I, II, and III (Continued)
(Thousand Barrels per Day Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
New England (PADD 1X)												
Net Production ^a												
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 0	E 0	E 0	E 0			
Imports												
1993	10	11	5	14	2	15	2	2	15	2	15	13
1994	26	31	13	2	14	2	14	2	16	2	17	17
1995	17	16	16	9	2	2	8	15				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 2	E 2	E 2	E 2			
Stocks (Million Barrels)												
1993	0.5	0.3	0.1	0.4	0.2	0.7	0.5	0.2	0.6	0.3	0.3	0.5
1994	0.3	0.6	0.4	0.4	0.5	0.4	0.6	0.4	0.4	0.6	0.6	0.7
1995	0.5	0.5	0.5	0.4	0.6	0.2	0.2	0.8	E 0.7			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 0.6	E 0.5	E 0.5	E 0.4			
Central Atlantic (PADD 1Y)												
Net Production ^a												
1993	46	42	40	45	47	47	45	42	44	48	44	43
1994	36	43	43	41	45	45	43	47	36	45	48	47
1995	45	45	46	42	44	49	46	47				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 27	E 32	E 58	E 63			
Imports												
1993	12	14	12	4	3	2	2	2	2	5	7	7
1994	12	10	8	3	3	3	2	2	3	4	7	6
1995	9	10	8	4	3	2	2	2				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 6	E 5	E 5	E 4			
Stocks (Million Barrels)												
1993	1.2	0.6	0.6	0.7	1.3	1.8	2.2	2.2	2.1	2.3	2.2	1.9
1994	0.9	0.7	0.8	0.9	1.5	2.0	2.5	2.6	2.6	2.7	3.0	2.7
1995	1.9	1.1	0.8	0.8	1.2	1.7	2.0	2.5	E 2.3			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 2.1	E 2.3	E 2.4	E 2.5			

See footnotes at end of table.

Table 2. Monthly and Weekly Net Production, Imports, and Stocks of Propane/Propylene by Petroleum Administration for Defense Districts (PADD) I, II, and III (Continued)
(Thousand Barrels per Day Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lower Atlantic (PADD 1Z)												
Net Production ^a												
1993	12	12	12	11	8	11	11	12	12	12	11	11
1994	10	12	11	11	10	9	11	10	12	12	12	12
1995	12	11	12	12	11	11	10	8				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 6	E 7	E 7	E 7			
Imports												
1993	0	0	0	5	0	0	5	0	0	6	0	3
1994	7	13	8	0	0	0	4	0	4	0	5	7
1995	5	1	0	0	0	8	0	0				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 0	E 0	E 0	E 0			
Stocks (Million Barrels)												
1993	1.5	1.0	0.9	1.1	1.3	1.4	1.6	1.7	1.7	1.9	1.8	1.3
1994	0.7	0.9	1.2	1.5	1.6	1.7	2.2	2.0	1.9	2.1	2.2	2.1
1995	1.7	1.0	0.7	0.9	1.1	1.2	1.9	1.9	E 2.1			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 2.0	E 2.1	E 2.1	E 2.2			
Midwest (PADD II)												
Net Production ^a												
1993	229	214	217	226	209	222	207	221	220	212	222	224
1994	208	214	212	225	224	217	208	209	224	199	220	229
1995	235	229	222	228	238	223	217	217				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 185	E 224	E 261	E 269			
Imports												
1993	50	46	47	37	41	29	45	48	45	58	60	59
1994	77	68	52	41	41	40	39	45	50	64	58	63
1995	69	63	49	49	41	42	36	45				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 46	E 61	E 57	E 48			
Stocks (Million Barrels)												
1993	10.6	7.6	7.4	9.9	12.8	16.0	19.4	21.4	22.7	21.5	20.6	19.0
1994	12.5	8.6	9.2	11.4	16.0	20.0	23.1	24.9	26.4	23.6	22.1	17.8
1995	13.1	8.9	8.5	10.8	12.9	16.0	19.8	22.7	E 23.0			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 22.9	E 23.1	E 22.3	E 22.6			

See footnotes at end of table.

Table 2. Monthly and Weekly Net Production, Imports, and Stocks of Propane/Propylene by Petroleum Administration for Defense Districts (PADD) I, II, and III (Continued)
(Thousand Barrels per Day Except Where Noted)

District/Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gulf Coast (PADD III)												
Net Production ^a												
1993	578	594	591	596	588	589	602	586	589	582	582	571
1994	537	541	575	601	595	603	611	608	628	593	612	634
1995	603	593	624	637	636	645	633	633				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 475	E 621	E 602	E 604			
Imports												
1993	0	7	19	45	48	27	63	61	65	31	50	9
1994	13	0	0	34	30	70	89	83	55	90	43	26
1995	0	0	13	41	25	59	26	40				
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 65	E 4	E 4	E 4			
Stocks (Million Barrels)												
1993	17.6	14.9	12.2	16.2	20.7	24.3	28.0	31.3	32.4	33.1	30.6	27.0
1994	18.0	13.2	13.1	16.0	19.9	22.6	24.7	26.2	27.0	23.7	23.9	21.6
1995	17.4	13.2	14.8	17.1	20.5	22.7	24.8	26.1	E 27.5			
Week Ending												
1995	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27			
	NA	NA	NA	NA	NA	E 27.9	E 27.7	E 27.0	E 26.9			

^a Net production equals gross production minus input. Negative production will occur when the amount of product produced during the month is less than the amount of that same product reprocessed (input) or reclassified to become another product during the same month.

E=Estimated data.

Note: • This table presents weekly data, derived from a cut-off sample of refineries and fractionators that produce propane and from companies that import or store propane, which have been extrapolated to the universe of companies reporting in PADD's I, II, and III. • Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), Monthly Petroleum Supply Reporting System and data collected on Form EIA-807, "Propane Telephone Survey." Magnitudes of revisions to monthly data are published in Appendix C of the *Petroleum Supply Monthly*.

Figure 9. U.S. Propane/Propylene Production

Source: 1994, EIA, *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*.

Figure 10. U.S. Propane/Propylene Imports

Source: 1994, EIA, *Petroleum Supply Annual*; 1995, EIA, *Petroleum Supply Monthly*.

Figure 11. U.S. Propane/Propylene Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992 - June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for propane stocks in the last 36 month period was 21.8 million barrels, occurring in March 1993.

Sources: • Data for Average Range: 1992-1994, Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA); 1995, EIA, *Petroleum Supply Monthly* (PSM). • Data for Seasonal Patterns: 1988-1994, EIA, PSA; • Monthly Data: 1994, EIA, PSA; 1995, EIA, PSM. • Week-Ending Stocks: Estimates based on data from Table H1.

Figure 12. PADD I (East Coast) Propane/Propylene Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992 - June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for propane stocks in the last 36 month period was 1.6 million barrels, occurring in March 1993.

Sources: • Data for Average Range: 1992-1994, Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA); 1995, EIA, *Petroleum Supply Monthly* (PSM). • Data for Seasonal Patterns: 1988-1994, EIA, PSA; • Monthly Data: 1994, EIA, PSA; 1995, EIA, PSM. • Week-Ending Stocks: Estimates based on data collected on Form EIA-807, "Propane Telephone Survey."

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Figure 13. PADD II (Midwest) Propane/Propylene Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992 - June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for propane stocks in the last 36 month period was 7.4 million barrels, occurring in March 1993.

Sources: • Data for Average Range: 1992-1994, Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA); 1995, EIA, *Petroleum Supply Monthly* (PSM). • Data for Seasonal Patterns: 1988-1994, EIA, PSA; • Monthly Data: 1994, EIA, PSA; 1995, EIA, PSM. • Week-Ending Stocks: Estimates based on data collected on Form EIA-807, "Propane Telephone Survey."

Figure 14. PADD III (Gulf Coast) Propane/Propylene Stocks

¹ Average level and width of average range are based on 3 years of monthly data: July 1992 - June 1995. The seasonal pattern is based on 7 years of monthly data.

² The Observed Minimum for propane stocks in the last 36 month period was 12.2 million barrels, occurring in March 1993.

Sources: • Data for Average Range: 1992-1994, Energy Information Administration (EIA), *Petroleum Supply Annual* (PSA); 1995, EIA, *Petroleum Supply Monthly* (PSM). • Data for Seasonal Patterns: 1988-1994, EIA, PSA; • Monthly Data: 1994, EIA, PSA; 1995, EIA, PSM. • Week-Ending Stocks: Estimates based on data collected on Form EIA-807, "Propane Telephone Survey."

Natural Gas

Pipelines carry natural gas across geographic regions.

Table 3. Supply and Disposition of Dry Natural Gas in the United States
(Billion Cubic Feet)

Year and Month	Supply					Total Supply/Disposition ^c	Disposition		
	Total Dry Gas Production	Withdrawals from Storage ^a	Supplemental Gaseous Fuels	Imports	Balancing Item ^b		Additions to Storage ^a	Exports	Consumption ^d
1989 Total	17,311	2,854	107	1,382	-218	21,435	2,528	107	18,801
1990 Total	17,810	1,986	123	1,532	-149	21,302	2,499	86	18,716
1991 Total	17,698	2,752	113	1,773	-500	21,836	2,672	129	19,035
1992 Total	17,840	2,772	118	2,138	-508	22,360	2,599	216	19,544
1993									
January	1,581	614	13	200	-63	2,346	37	17	2,292
February	1,421	591	11	191	-5	2,209	22	12	2,175
March	1,561	395	12	204	69	2,242	79	16	2,146
April	1,481	103	10	189	129	1,912	216	11	1,685
May	1,511	30	7	171	66	1,786	471	11	1,303
June	1,457	36	9	182	44	1,727	424	11	1,293
July	1,501	35	8	195	24	1,762	398	13	1,352
August	1,502	45	8	197	2	1,755	375	11	1,369
September	1,476	26	8	194	-23	1,681	391	10	1,280
October	1,552	103	10	192	-93	1,764	262	9	1,493
November	1,561	311	11	210	-206	1,887	106	10	1,771
December	1,639	510	13	225	-188	2,198	54	10	2,134
Total	18,244	2,799	119	2,350	-244	23,268	2,835	140	20,293
1994									
January	1,623	757	14	241	-65	2,570	33	11	2,526
February	1,462	543	12	199	140	2,357	49	13	2,295
March	1,614	236	11	223	74	2,158	103	19	2,036
April	1,552	68	10	212	85	1,926	280	9	1,638
May	1,598	25	10	206	-4	1,834	417	8	1,409
June	1,531	33	9	201	7	1,781	375	13	1,393
July	1,582	24	10	221	-37	1,800	403	11	1,386
August	1,570	29	9	219	-37	1,790	364	14	1,413
September	1,519	21	10	210	-52	1,708	335	14	1,359
October	1,563	53	10	222	-148	1,700	215	13	1,472
November	^E 1,599	196	^E 11	226	-199	1,833	98	19	1,716
December	^E 1,638	422	^E 13	245	-161	2,157	54	18	^E 2,085
Total	18,852	2,408	129	2,624	-399	23,614	2,726	162	20,727
1995									
January	1,646	620	14	251	-69	2,461	41	14	2,407
February	1,477	543	12	228	5	2,265	42	13	2,210
March	1,611	314	12	250	25	2,213	101	15	2,098
April	1,574	121	9	199	76	1,980	168	14	1,797
May	1,620	31	10	217	63	1,941	351	13	1,577
June	1,587	37	10	217	-41	1,810	390	16	1,403
July	^E 1,566	50	^E 10	^E 234	0	1,860	342	^E 13	1,505
August	^E 1,569	80	^E 10	^E 235	-99	1,795	276	^E 16	^E 1,502
1995 YTD	12,651	1,797	87	1,831	-40	16,325	1,712	114	14,499
1994 YTD	12,532	1,716	85	1,721	162	16,216	2,024	98	14,095
1993 YTD	12,015	1,853	78	1,529	276	15,751	2,035	102	13,614

^a Monthly and annual data for 1988 through 1993 include underground storage and liquefied natural gas storage. Data for January 1994 forward include underground storage only. See Appendix A, Explanatory Note 7 of *Natural Gas Monthly* (NGM) for discussion of computation procedures.

^b Represents quantities lost and imbalances in data due to differences among data sources. See Appendix A, Explanatory Note 10 of the NGM for full discussion.

^c Total data for 1988 through 1993 do not equal equivalent data in Table 1 of the *Natural Gas Annual* (NGA) 1993 due to the exclusion of intransit receipts and deliveries in the NGM.

^d Consists of pipeline fuel use, lease and plant fuel use, and deliveries to consuming sectors as shown in Table 3 of the NGM.

^E = Estimated data.

Notes: • Data for 1988 through 1993 are final. All other data are preliminary unless otherwise indicated. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Sources: • Total Dry Gas Production: EIA, *Natural Gas Annual*, 1988 through 1993; IOGCC, MMS reporting, and EIA estimates, January 1994 through current month. See Appendix A, Explanatory Note 3 of the *Natural Gas Monthly* for estimation procedures and revision policy. • Withdrawals from and Additions to Storage: EIA, *Natural Gas Annual*, 1988 through 1993; Form EIA-191, January 1994 through current month. • Supplemental Gaseous Fuels: EIA, *Natural Gas Annual*, 1988 through 1993; and EIA computations, January 1994 through current month. See Appendix A, Explanatory Note 2 of the *Natural Gas Monthly* for discussion of procedures and revision policy. • Imports and Exports: Form FPC-14, 1988 through 1993; and estimates, January 1994 through the current month. See Appendix A, Explanatory Note 4 of the *Natural Gas Monthly* for discussion of procedures and revision policy. • Consumption and Balancing Item: EIA, *Natural Gas Annual*, 1988 through 1993; and EIA computations, January 1994 through current month. See Appendix A, Explanatory Notes 5 and 10 of the *Natural Gas Monthly* for discussion of computation procedures and revision policy.

Table 4. Underground Natural Gas Storage in the United States (All Operators)
(Billion Cubic Feet)

Year and Month	Natural Gas in Underground Storage at End of Period			Change In Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	With draws ^c	Net ^c
1989 Total ^a	3,812	2,513	6,325	-337	-11.8	2,491	2,804	-313
1990 Total ^a	3,868	3,068	6,936	555	22.1	2,433	1,934	499
1991 Total ^a	3,954	2,824	6,778	-244	-8.0	2,608	2,689	-80
1992 Total ^a	4,044	2,597	6,641	-227	-8.0	2,555	2,724	-168
1993								
January	4,259	1,827	6,085	-389	-17.6	37	592	-555
February	4,231	1,303	5,533	-535	-29.1	22	569	-547
March	4,204	1,029	5,233	-516	-33.4	79	383	-304
April	4,219	1,120	5,340	-453	-28.8	212	103	109
May	4,244	1,521	5,765	-327	-17.7	456	30	426
June	4,257	1,895	6,151	-258	-12.0	410	36	374
July	4,256	2,240	6,497	-219	-8.9	385	35	350
August	4,263	2,554	6,817	-207	-7.5	364	45	319
September	4,256	2,884	7,140	-160	-5.3	378	26	353
October	4,315	2,978	7,292	-245	-7.6	256	103	153
November	4,326	2,762	7,088	-292	-9.5	106	303	-197
December	4,327	2,322	6,649	-275	-10.6	54	492	-439
Total	—	—	—	—	—	2,760	2,717	43
1994								
January	4,348	1,579	5,927	-247	-13.5	33	757	-724
February	4,337	1,091	5,428	-212	-16.3	49	543	-494
March	4,343	958	5,301	-71	-6.9	103	236	-133
April	4,345	1,172	5,517	52	4.6	280	68	212
May	4,352	1,554	5,906	33	2.2	417	25	392
June	4,352	1,896	6,248	2	0.1	375	33	342
July	4,355	2,273	6,629	33	1.5	403	24	379
August	4,355	2,607	6,962	53	2.1	364	29	334
September	4,353	2,912	7,265	28	1.0	335	21	313
October	4,354	3,075	7,429	97	3.3	215	53	161
November	4,353	2,978	7,331	216	7.8	98	196	-98
December	4,360	2,606	6,966	284	12.2	54	422	-368
Total	—	—	—	—	—	2,726	2,408	317
1995								
January	4,356	2,032	6,388	453	28.7	41	620	-579
February	4,359	1,531	5,890	440	40.4	42	543	-501
March	4,353	1,323	5,676	366	38.2	101	314	-214
April	4,351	1,371	5,723	199	17.0	168	121	47
May	4,384	1,661	6,045	106	6.8	351	31	320
June	4,390	2,011	6,401	114	6.0	390	37	354
July	4,323	2,302	6,625	28	1.2	342	50	293
August	4,322	2,500	6,821	-107	-4.1	276	80	196

Estimates of Working Gas in Underground Storage for the Week Ending:

08/25	09/01	09/08	09/15	09/22	09/29	10/06	10/13	10/20	10/27
2,416	2,467	2,543	2,614	2,683	2,750	2,798	2,868	2,920	2,954

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1988, and 1989 - 8,124; 1990 - 8,125; 1991 - 7,993; 1992 - 7,932; and 1993 - 7,989.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

— = Not Applicable.

Notes : • Data for 1988 through 1993 are final. All other data are preliminary unless otherwise noted. See Appendix A, Explanatory Note 7 of the *Natural Gas Monthly* for discussion of revision policy. • See Appendix B, Note 4 for discussion of weekly data. • Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. • Totals may not equal sum of components because of independent rounding. • Geographic coverage is the 50 States and the District of Columbia.

Source : Form EIA-191, Form FERC-8, and Form EIA-176. Weekly Estimates: American Gas Association Weekly Storage Survey.

Figure 15. Underground Natural Gas Storage in the United States, 1994 - 1996

Sources: Energy Information Administration (EIA), Form EIA-191, "Underground Natural Gas Storage Report"; American Gas Association, "Report of Estimated U. S. Working Gas Levels in Underground Storage".

**Table 5. Natural Gas Consumption by Petroleum Administration for Defense District (PADD)
(Billion Cubic Feet)**

Year and Month	New England				Central Atlantic			
	Residential	Commercial	Industrial	Electric Utilities	Residential	Commercial	Industrial	Electric Utilities
1993								
January	30	16	14	0	147	75	63	12
February	32	17	14	0	157	80	62	13
March	29	16	15	3	150	77	64	16
April	20	11	13	4	93	51	57	16
May	11	7	13	3	44	28	50	14
June	7	5	14	3	31	24	49	26
July	5	4	13	5	23	22	47	42
August	5	5	17	5	22	20	48	33
September	5	4	16	3	24	22	48	21
October	10	7	18	2	48	31	53	18
November	16	11	18	2	83	47	58	14
December	23	13	18	1	127	68	59	8
Total	193	117	185	30	951	547	659	233
1994								
January	34	20	15	0	189	90	61	6
February	35	21	13	0	176	86	54	5
March	29	20	15	2	143	76	63	10
April	18	11	13	2	85	51	56	11
May	10	9	13	2	49	31	53	16
June	7	8	14	5	31	24	55	35
July	5	7	14	7	24	23	50	49
August	5	8	15	7	23	22	54	38
September	5	7	13	7	25	23	53	27
October	8	9	15	7	44	32	58	25
November	12	12	16	7	67	42	58	24
December	21	15	15	1	114	63	66	22
Total	191	148	172	49	969	564	680	268
1995								
January	26	18	16	2	145	78	74	21
February	28	20	16	2	158	83	72	19
March	25	18	17	6	127	70	74	26
April	18	14	17	8	88	51	69	22
May	10	13	15	10	51	34	62	26
June	6	7	14	11	30	25	58	36
July	4	6	15	13	23	25	60	56

See footnotes at end of table.

Table 5. Natural Gas Consumption by Petroleum Administration for Defense District (PADD) (Continued)
(Billion Cubic Feet)

Year and Month	Lower Atlantic				PAD District I			
	Residential	Commercial	Industrial	Electric Utilities	Residential	Commercial	Industrial	Electric Utilities
1993								
January	48	30	51	13	225	121	128	25
February	50	31	49	14	239	128	125	27
March	46	30	51	14	225	123	130	33
April	28	21	48	14	141	83	118	34
May	12	14	46	17	67	49	109	34
June	8	11	47	21	46	40	110	50
July	7	11	49	25	35	37	109	72
August	7	11	51	24	34	36	116	62
September	7	11	44	21	36	37	108	45
October	14	14	49	15	72	52	120	35
November	28	20	49	12	127	78	125	28
December	48	27	46	12	198	108	123	21
Total	303	231	580	202	1,447	895	1,424	465
1994								
January	67	37	46	13	290	147	122	19
February	52	31	47	10	263	138	114	15
March	38	26	52	12	210	122	130	24
April	19	17	49	14	122	79	118	27
May	12	14	50	19	71	54	116	37
June	9	12	55	20	47	44	124	60
July	7	11	51	22	36	41	115	78
August	7	12	54	22	35	42	123	67
September	7	12	54	21	37	42	120	55
October	13	14	58	18	65	55	131	50
November	23	18	55	19	102	72	129	50
December	39	25	58	17	174	103	139	40
Total	294	228	628	205	1,454	940	1,480	522
1995								
January	54	32	56	16	225	128	146	39
February	55	33	50	15	241	136	138	36
March	36	25	58	29	188	113	149	61
April	21	18	58	31	127	83	144	61
May	13	14	57	34	74	61	134	70
June	8	12	57	35	44	44	129	82
July	7	11	58	38	34	42	133	107

See footnotes at end of table.

Table 5. Natural Gas Consumption by Petroleum Administration for Defense District (PADD) (Continued)
(Billion Cubic Feet)

Year and Month	PAD District II				PAD District III			
	Residential	Commercial	Industrial	Electric Utilities	Residential	Commercial	Industrial	Electric Utilities
1993								
January	367	179	203	14	77	39	277	77
February	333	166	201	14	67	35	255	73
March	312	156	202	15	59	32	274	95
April	197	101	173	14	39	26	272	88
May	91	49	154	14	21	20	253	94
June	62	36	149	20	15	19	266	146
July	45	33	139	34	14	19	279	188
August	41	32	146	40	13	18	283	197
September	56	37	148	18	13	16	269	143
October	118	64	170	19	20	18	288	124
November	209	109	183	17	44	26	275	105
December	312	151	203	16	64	34	282	80
Total	2,144	1,111	2,072	234	446	303	3,274	1,410
1994								
January	442	213	222	16	85	44	283	82
February	377	190	212	13	75	42	273	74
March	271	139	208	14	52	33	255	96
April	170	90	173	17	32	25	254	105
May	99	53	162	19	19	21	259	116
June	53	39	156	33	15	21	259	171
July	44	35	148	34	14	19	249	182
August	43	38	157	32	13	21	251	189
September	48	37	156	26	14	16	290	138
October	94	56	180	23	17	20	256	123
November	165	94	197	17	30	24	254	105
December	274	142	212	18	52	30	264	91
Total	2,080	1,126	2,184	264	417	315	3,148	1,470
1995								
January	368	183	239	15	73	37	282	96
February	341	176	214	15	64	34	259	82
March	261	137	209	21	53	31	276	124
April	182	94	192	20	30	25	287	114
May	102	59	172	20	21	22	298	142
June	55	38	160	30	15	16	272	159
July	47	36	152	49	13	19	292	196

See footnotes at end of table.

Table 5. Natural Gas Consumption by Petroleum Administration for Defense District (PADD) (Continued)
(Billion Cubic Feet)

Year and Month	PAD District IV				PAD District V			
	Residential	Commercial	Industrial	Electric Utilities	Residential	Commercial	Industrial	Electric Utilities
1993								
January	48	28	27	1	115	47	73	47
February	41	25	25	1	87	48	75	48
March	37	22	25	1	69	37	79	49
April	25	15	23	1	48	30	73	37
May	15	9	22	1	38	27	75	24
June	9	6	21	1	31	23	71	37
July	7	5	21	2	28	25	83	39
August	6	5	21	2	27	21	75	56
September	8	6	22	1	28	23	79	51
October	13	8	23	1	32	27	88	54
November	26	16	25	1	51	31	81	57
December	39	23	26	1	93	46	83	57
Total	274	169	281	16	647	386	934	557
1994								
January	45	27	28	1	96	47	78	52
February	42	25	25	1	85	42	75	46
March	32	19	24	1	71	38	76	51
April	23	14	23	1	47	30	80	53
May	14	9	21	1	45	32	70	43
June	8	6	20	2	33	26	82	54
July	6	5	20	1	29	33	84	67
August	6	5	21	2	27	20	83	92
September	7	5	21	2	26	21	79	75
October	13	9	27	1	33	26	79	66
November	25	16	25	2	71	38	84	58
December	38	23	29	2	102	45	80	57
Total	258	163	285	17	665	398	951	715
1995								
January	44	28	28	1	108	51	85	47
February	37	22	26	1	71	42	76	35
March	32	19	26	1	70	39	80	39
April	24	15	26	1	58	37	86	32
May	19	12	24	1	48	35	83	25
June	11	8	24	1	35	27	82	25
July	9	7	23	1	30	28	84	52

Notes: • Data for 1987 through 1993 are final. All other data are preliminary unless otherwise indicated. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components because of independent rounding.

Sources: All data except electric utility: EIA, *Natural Gas Annual*, 1991 through 1993; and Form EIA-857 and computations January 1994 through the current month. See Appendix A, Explanatory Note 5 of the *Natural Gas Monthly* for computation procedures and revision policy. Electric utility data: Form EIA-759, "Monthly Power Plant Report" (formerly Form FPC-4).

Figure 16. Natural Gas Deliveries to Consumers in the United States, 1991 - 1995

Sources: Energy Information Administration (EIA), Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers", Form EIA-759, "Monthly Power Plant Report", Natural Gas Annual and Natural Gas Monthly.

Table 6. Selected National Average Natural Gas Prices in the United States
(Dollars per Thousand Cubic Feet)

Year and Month	Wellhead Price ^a	Major Interstate Pipeline Companies		City Gate	Delivered to Consumers			
		Imports ^b	Purchased from Producers ^b		Residential	Commercial	Industrial	Electric Utilities ^c
1990 Annual Average	1.71	2.03	2.19	3.03	5.80	4.83	2.93	2.38
1991 Annual Average	1.64	2.02	1.92	2.90	5.82	4.81	2.69	2.18
1992 Annual Average	1.74	1.97	2.09	3.01	5.89	4.88	2.84	2.36
1993								
January	1.95	2.04	2.17	3.11	5.73	5.23	3.15	2.70
February	1.76	1.91	1.94	2.94	5.73	5.14	3.02	2.54
March	1.94	1.78	2.21	3.06	5.67	5.10	2.98	2.61
April	2.09	2.15	2.27	3.24	6.02	5.19	3.04	2.75
May	2.35	2.13	2.63	3.58	6.78	5.31	3.14	2.90
June	1.91	1.95	2.02	3.44	7.37	5.40	2.86	2.48
July	1.94	1.78	2.03	3.34	7.85	5.14	2.62	2.45
August	2.04	2.25	2.36	3.35	8.13	5.34	2.76	2.60
September	2.19	2.07	2.59	3.54	7.75	5.35	2.95	2.69
October	1.96	1.96	2.05	3.15	6.79	5.18	2.77	2.45
November	1.96	1.85	2.27	3.15	6.17	5.21	3.02	2.59
December	2.24	2.25	2.69	3.27	6.06	5.33	3.28	2.76
Annual Average	2.03	2.01	2.27	3.21	6.16	5.22	3.07	2.61
1994								
January	2.00	2.09	2.70	3.03	5.95	5.50	3.54	2.67
February	2.13	1.81	3.34	3.27	6.05	5.59	3.50	2.80
March	2.12	2.04	2.76	3.33	6.30	5.66	3.59	2.67
April	1.91	2.06	2.44	3.15	6.61	5.59	3.08	2.44
May	1.94	1.53	2.62	3.18	6.84	5.44	3.00	2.46
June	1.75	1.90	2.45	3.20	7.66	5.36	2.78	2.25
July	1.84	1.50	2.25	3.12	8.08	5.22	2.84	2.27
August	1.74	1.79	2.33	3.16	8.20	5.28	2.75	2.16
September	1.56	1.39	2.08	2.92	7.83	5.34	2.60	2.00
October	1.48	1.28	1.79	2.82	6.87	5.09	2.51	1.95
November	1.68	1.25	1.46	2.85	6.25	5.18	2.88	2.10
December	1.72	1.58	2.85	2.86	6.07	5.23	3.03	2.17
Annual Average	1.83	1.69	2.42	3.08	6.41	5.43	3.05	2.28
1995								
January	1.65	1.42	1.22	2.79	5.82	5.20	2.91	2.13
February	1.46	1.07	2.52	2.71	5.74	5.11	2.96	1.99
March	1.48	1.00	1.72	2.74	5.82	5.07	2.76	1.91
April	1.48	0.76	1.83	2.70	6.04	5.04	2.59	1.96
May	1.63	1.20	1.61	2.75	6.51	4.99	2.52	2.05
June	1.66	1.27	2.03	2.90	7.46	5.11	2.44	2.05
July	^E 1.49	1.04	1.91	2.88	7.68	5.04	2.37	NA
1994 YTD	1.96	1.85	2.65	3.18	6.34	5.53	3.23	2.50
1993 YTD	1.99	1.96	2.18	3.18	6.00	5.19	2.98	2.65
1995 YTD	1.55	1.11	1.84	2.77	6.05	5.10	2.67	2.01

^a See Appendix A, Explanatory Note 8 of the *Natural Gas Monthly* for discussion of wellhead price.

^b See Appendix A, Explanatory Note 9 of the *Natural Gas Monthly* for discussion of major interstate pipeline company data.

^c See Table Notes and Sources for explanation of break in series for consumer prices in 1988.

^E = Estimated data.

NA = Not Available.

Notes: • Data for 1988 through 1993 are final. All other data are preliminary unless otherwise indicated. • Geographic coverage is the 50 States and the District of Columbia. • Price for gas delivered to industrial consumers for 1988 imputed average for volumes of gas delivered for the account of others. From 1988 on, prices reflect on-system sales prices only. The change in series in 1988 affects the commercial, industrial sector prices.

Sources: • Average wellhead price: EIA, *Natural Gas Annual*, 1993, 1988 through 1993; and EIA estimates, January 1994 through current month. See Appendix A, Explanatory Note 8 of the *Natural Gas Monthly* for estimation procedures and revision policy. • Imports and Interstate Pipeline Company Purchases: Form FERC-11. • Average City Gate, Residential, Commercial and Industrial average prices for 1988 through current month from Form EIA-857. See Appendix A, Explanatory Note 5 of the *Natural Gas Monthly* for discussion of revision policy. • Electric Utilities averages from Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Figure 17. Average Price of Natural Gas Delivered to Consumers in the United States, 1991 - 1995

Sources: Energy Information Administration (EIA), Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers", Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants", Natural Gas Annual.

Figure 18. Average Price of Natural Gas in the United States, 1991 - 1995

Sources: Energy Information Administration (EIA), Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers", Form FERC-11, "Natural Gas Pipeline Company Monthly Statement", Natural Gas Annual.

Prices

Distillate fuel oil and propane are two sources of residential heating in the United States.

Table 7. Residential Heating Oil Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season					
	October	November	December	January	February	March
Average	90.3	91.2	91.7	92.7	92.9	92.6
East Coast (PADD I)	91.3	92.1	92.8	93.9	94.3	93.9
New England (PADD IX)	84.9	85.9	86.6	87.8	88.0	87.4
Central Atlantic (PADD IY)	96.1	96.8	97.8	98.9	99.3	99.0
Lower Atlantic (PADD IZ)	88.7	89.5	89.7	90.0	90.1	89.8
Midwest (PADD II)	82.8	84.0	83.3	82.9	82.7	82.6

Region/State	1995/96 Heating Season											
	10/02	10/16 ^P	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	89.9	90.2										
East Coast (PADD I)	90.9	91.2										
New England (PADD IX)	85.0	85.3										
Connecticut	86.7	86.7										
Maine	75.8	75.2										
Massachusetts	86.9	88.1										
New Hampshire	80.0	79.9										
Rhode Island	88.2	87.7										
Vermont	86.6	86.0										
Central Atlantic (PADD IY)	95.5	95.9										
Delaware	83.8	84.1										
District of Columbia	101.6	102.2										
Maryland	96.3	96.5										
New Jersey	92.1	91.9										
New York	105.1	105.7										
Pennsylvania	78.5	78.9										
Lower Atlantic (PADD IZ)	88.4	88.0										
North Carolina	88.6	88.5										
Virginia	88.2	87.5										
Midwest (PADD II)	82.5	82.3										
Indiana	81.9	81.8										
Iowa	77.5	77.2										
Kentucky	77.2	77.4										
Michigan	85.4	85.3										
Minnesota	84.7	84.5										
Ohio	79.3	79.1										
Wisconsin	82.9	83.1										

NA=Not available.

P=Preliminary data.

Source: Based on data collected by State Energy Offices.

Figure 19. Residential Heating Oil Prices, New England

Source: Based on data collected by State Energy Offices.

Figure 20. Residential Heating Oil Prices, Central Atlantic

Source: Based on data collected by State Energy Offices.

Figure 21. Residential Heating Oil Prices, Lower Atlantic

Source: Based on data collected by State Energy Offices.

Figure 22. Residential Heating Oil Prices, Midwest

Source: Based on data collected by State Energy Offices.

Table 8. Residential Propane Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season					
	October	November	December	January	February	March
Average	84.6	85.6	86.7	88.0	89.2	89.8
East Coast (PADD I)	113.4	115.1	115.2	116.3	116.9	116.4
New England (PADD IX)	113.7	113.6	114.7	115.5	115.9	116.6
Central Atlantic (PADD IY)	118.4	121.4	120.1	121.6	122.2	120.5
Lower Atlantic (PADD IZ)	104.2	105.3	105.9	106.5	107.4	107.1
Midwest (PADD II)	71.4	72.4	73.8	75.3	76.2	76.6

Region/State	1995/96 Heating Season											
	10/02	10/16 ^P	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	88.5	88.5										
East Coast (PADD I)	112.8	113.0										
New England (PADD IX)	115.2	116.1										
Connecticut	116.9	117.6										
Maine	124.1	126.3										
Massachusetts	115.1	115.1										
New Hampshire	114.3	113.8										
Rhode Island	134.6	135.0										
Vermont	108.4	109.6										
Central Atlantic (PADD IY)	114.9	114.8										
Delaware	117.2	117.5										
Maryland	120.9	121.3										
New Jersey	122.3	122.0										
New York	116.7	116.4										
Pennsylvania	109.5	109.5										
Lower Atlantic (PADD IZ)	104.2	104.4										
North Carolina	101.8	102.2										
Virginia	109.3	109.2										
Midwest (PADD II)	73.5	74.2										
Indiana	81.9	82.2										
Iowa	58.0	57.7										
Kentucky	92.6	93.9										
Michigan	79.6	80.4										
Minnesota	74.1	75.5										
Missouri	66.6	69.1										
North Dakota	59.3	59.9										
Ohio	86.9	87.6										
South Dakota	61.1	61.8										
Wisconsin	74.8	75.6										

NA=Not available.

P=Preliminary data.

Source: Based on data collected by State Energy Offices.

Figure 23. Residential Propane Prices, New England

Source: Based on data collected by State Energy Offices.

Figure 24. Residential Propane Prices, Central Atlantic

Source: Based on data collected by State Energy Offices.

Figure 25. Residential Propane Prices, Lower Atlantic

Source: Based on data collected by State Energy Offices.

Figure 26. Residential Propane Prices, Midwest

Source: Based on data collected by State Energy Offices.

Table 9. Wholesale Heating Oil Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season					
	October	November	December	January	February	March
Average	52.1	52.6	50.5	51.0	50.4	49.7
East Coast (PADD I)	51.2	52.2	50.7	51.8	50.8	49.0
New England (PADD IX)	51.8	52.8	51.7	53.2	51.8	49.9
Central Atlantic (PADD IV)	51.1	52.0	50.7	51.6	50.8	49.0
Lower Atlantic (PADD IZ)	50.6	51.6	49.4	50.6	50.0	48.2
Midwest (PADD II)	53.3	53.1	50.2	49.9	49.8	50.5

Region/State	1995/96 Heating Season											
	10/02	10/16 ^P	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	51.4	51.2										
East Coast (PADD I)	50.8	50.9										
New England (PADD IX)	51.4	51.6										
Connecticut	51.2	51.2										
Maine	52.8	52.8										
Massachusetts	51.1	51.6										
New Hampshire	51.9	52.0										
Rhode Island	50.6	50.9										
Central Atlantic (PADD IV)	50.7	50.8										
Delaware	49.6	49.9										
District of Columbia	51.1	51.0										
Maryland	49.4	49.6										
New Jersey	50.2	50.2										
New York	51.7	51.9										
Pennsylvania	50.9	50.8										
Lower Atlantic (PADD IZ)	50.2	50.3										
North Carolina	50.9	50.8										
Virginia	49.6	49.8										
Midwest (PADD II)	52.2	51.8										
Illinois	50.0	49.5										
Indiana	50.4	50.3										
Iowa	55.7	54.8										
Kansas	55.3	53.9										
Kentucky	51.3	50.9										
Michigan	50.2	49.9										
Minnesota	56.8	55.6										
Missouri	50.4	50.1										
North Dakota	57.9	56.5										
Ohio	52.2	50.9										
South Dakota	55.8	54.8										
Wisconsin	52.4	51.9										

P=Preliminary data.

Source: Based on terminal quotes collected by the Computer Petroleum Corporation, Inc.

Figure 27. Wholesale Heating Oil Prices, New England

Source: Based on terminal quotes collected by the Computer Petroleum Corporation, Inc.

Figure 28. Wholesale Heating Oil Prices, Central Atlantic

Source: Based on terminal quotes collected by the Computer Petroleum Corporation, Inc.

Figure 29. Wholesale Heating Oil Prices, Lower Atlantic

Source: Based on terminal quotes collected by the Computer Petroleum Corporation, Inc.

Figure 30. Wholesale Heating Oil Prices, Midwest

Source: Based on terminal quotes collected by the Computer Petroleum Corporation, Inc.

Table 10. Wholesale Propane Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season					
	October	November	December	January	February	March
Average	35.8	37.1	37.3	36.5	35.1	38.1
East Coast (PADD I)	40.1	42.1	42.7	42.0	40.5	41.7
Central Atlantic (PADD IY)	40.9	43.1	43.6	43.0	40.7	42.6
Lower Atlantic (PADD IZ)	38.8	40.6	41.6	40.8	40.2	40.5
Midwest (PADD II)	34.6	35.8	35.9	35.0	33.7	37.1

Region/State	1995/96 Heating Season											
	10/02	10/16 ^P	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	37.0	37.4										
East Coast (PADD I)	38.8	39.2										
Central Atlantic (PADD IY)	39.5	40.1										
New York	39.9	40.3										
Pennsylvania	39.2	39.9										
Lower Atlantic (PADD IZ)	38.0	38.0										
North Carolina	38.0	38.0										
Midwest (PADD II)	36.5	36.9										
Illinois	37.7	37.8										
Indiana	37.4	37.7										
Iowa	36.9	36.9										
Kansas	34.1	34.1										
Minnesota	37.1	37.1										
Missouri	36.6	36.8										
North Dakota	35.4	35.6										
Ohio	37.7	38.2										
South Dakota	37.9	37.9										
Wisconsin	37.7	40.4										

P=Preliminary data.

Source: These data are average prices collected by the Computer Petroleum Corporation, Inc.

Figure 31. Wholesale Propane Prices, Central Atlantic

Source: Based on data collected by the Computer Petroleum Corporation, Inc.

Figure 32. Wholesale Propane Prices, Lower Atlantic

Source: Based on data collected by the Computer Petroleum Corporation, Inc.

Figure 33. Wholesale Propane Prices, Midwest

Source: Based on data collected by the Computer Petroleum Corporation, Inc.

Table 11. U.S. Crude Oil and Petroleum Product Prices
(Cents per Gallon, Except Where Noted)

Report Period	Crude WTI (Dollars per Barrel)	No. 2 Distillate				Propane		
		Spot	Terminal	Residential	Diesel Retail	Spot	Terminal	Residential
Monthly								
10/94	17.72	48.2	52.2	90.3	112.2	32.4	35.5	84.6
11/94	18.07	49.5	53.1	91.2	113.1	34.5	36.6	85.6
12/94	17.16	48.3	52.3	91.7	111.3	33.3	36.7	86.7
01/95	18.03	48.1	52.5	92.7	109.8	32.7	36.3	88.0
02/95	18.59	47.6	51.5	92.9	108.8	31.6	35.3	89.2
03/95	18.54	45.8	49.9	92.6	108.8	32.7	36.1	89.8
04/95	19.90	49.4	53.1	NA	110.4	32.3	35.2	NA
05/95	19.70	50.0	54.1	NA	112.5	32.7	36.0	NA
06/95	18.45	47.6	51.3	NA	112.0	31.8	35.7	NA
07/95	17.33	46.5	49.8	NA	110.0	30.8	35.4	NA
08/95	18.02	49.1	52.0	NA	110.5	31.3	36.8	NA
09/95	18.23	50.1	53.6	NA	111.9	31.3	37.1	NA
Week Ending								
09/08/95	18.37	51.62	54.5	NA	111.5	31.3	36.9	NA
09/15/95	18.72	51.09	54.5	NA	111.9	31.2	36.8	NA
09/22/95	18.32	49.33	53.7	NA	112.2	31.6	37.3	NA
09/29/95	17.55	48.64	52.2	NA	112.1	31.2	37.3	NA
10/06/95	17.29	48.20	52.2	89.9	111.7	31.2	37.1	88.5
10/13/95	17.28	48.25	51.7	NA	111.7	31.1	37.3	NA
10/20/95	17.51	48.22	52.3	90.2	111.7	30.7	37.1	88.5
10/27/95	17.56	49.54	52.8	NA	111.4	30.6	37.0	NA
Daily								
10/10/95	17.29	47.9	51.8	NA	NA	31.4	37.3	NA
10/11/95	17.28	48.4	51.7	NA	NA	31.1	37.3	NA
10/12/95	17.08	48.1	51.8	NA	NA	31.0	37.3	NA
10/13/95	17.38	48.5	51.8	NA	NA	30.9	37.3	NA
10/16/95	17.60	48.5	52.1	90.2	111.7	30.9	37.2	88.5
10/17/95	17.59	48.3	52.5	NA	NA	30.9	37.2	NA
10/18/95	17.57	48.1	52.5	NA	NA	30.9	37.1	NA
10/19/95	17.34	47.9	52.3	NA	NA	30.4	36.9	NA
10/20/95	17.44	48.3	52.2	NA	NA	30.4	36.9	NA
10/23/95	17.48	48.7	52.3	NA	111.4	30.4	36.9	NA
10/24/95	17.61	49.3	52.2	NA	NA	30.6	36.9	NA
10/25/95	17.58	49.4	52.8	NA	NA	30.6	37.0	NA
10/26/95	17.61	50.2	52.8	NA	NA	30.6	37.0	NA
10/27/95	17.54	50.1	53.7	NA	NA	30.9	37.1	NA
10/30/95	17.67	50.4	53.7	NA	111.0	30.9	37.2	NA

NA=Not available.

Source: • Spot West Texas Intermediate (WTI) at Cushing, Oklahoma; No. 2 distillate in New York Harbor from Reuters. • Computer Petroleum Corp. rack (terminal) prices. • Residential No. 2 distillate and propane prices from State Heating Oil and Propane Program. • Diesel Retail prices from Energy Information Administration, Form EIA-888, "On-Highway Diesel Fuel Price Survey," • Mt. Belvieu, Texas, spot propane prices from *Platts' Oilgram Price Report*.

Table 12. Petroleum Product Prices for Selected Cities
(Cents per Gallon)

Report Period	Chicago			Houston		
	No. 2 Distillate		Propane	No. 2 Distillate		Propane
	Spot	Terminal	Terminal	Spot	Terminal	Terminal
Monthly						
10/94	50.2	52.0	35.1	46.6	50.6	35.2
11/94	49.4	51.2	36.0	47.8	50.9	36.7
12/94	46.4	48.1	35.9	46.3	49.1	36.3
01/95	44.9	46.3	35.2	45.7	49.0	36.2
02/95	46.4	47.1	34.6	46.0	48.4	34.8
03/95	46.9	48.7	36.0	43.7	46.8	35.6
04/95	51.2	52.4	34.7	47.8	50.3	34.8
05/95	51.8	53.5	35.8	49.0	53.0	35.5
06/95	47.3	49.4	35.9	45.8	49.9	34.3
07/95	46.4	47.9	35.5	44.5	48.4	33.8
08/95	49.6	51.1	37.5	47.1	51.5	34.1
09/95	97.3	51.8	37.4	46.9	52.4	34.1
Week Ending						
09/08/95	52.0	53.5	37.5	49.5	53.7	34.2
09/15/95	50.6	53.0	37.4	44.5	53.3	34.2
09/22/95	48.6	51.5	37.2	47.4	52.4	33.5
09/29/95	47.6	49.5	37.5	46.5	50.5	34.5
10/06/95	47.4	49.2	38.2	46.2	50.6	34.4
10/13/95	47.2	48.6	38.0	46.2	49.7	34.1
10/20/95	47.3	48.7	37.8	46.2	49.9	34.2
10/27/95	49.5	49.9	37.5	47.4	50.9	33.9
Daily						
10/10/95	46.9	48.8	38.0	46.2	49.8	34.3
10/11/95	46.8	48.7	38.0	46.3	49.8	34.4
10/12/95	46.3	48.7	38.0	46.0	49.8	34.4
10/13/95	48.7	48.4	38.0	46.4	49.6	34.4
10/16/95	47.5	48.8	38.0	46.4	49.8	34.4
10/17/95	47.4	48.9	38.0	46.4	49.9	34.3
10/18/95	47.0	48.9	37.8	46.0	50.1	34.3
10/19/95	46.8	48.7	37.7	45.8	49.9	34.3
10/20/95	47.7	48.4	37.4	46.4	49.9	34.1
10/23/95	48.1	48.7	37.4	46.6	50.3	33.9
10/24/95	48.7	49.4	37.4	46.9	50.4	33.9
10/25/95	49.0	49.8	37.5	47.3	51.1	33.9
10/26/95	49.8	50.2	37.6	48.2	51.1	34.2
10/27/95	51.7	51.4	37.7	48.0	51.7	33.9
10/30/95	51.9	52.3	37.8	48.1	51.7	33.9

See footnotes at end of table.

Table 12. Petroleum Product Prices for Selected Cities (Continued)
(Cents per Gallon)

Report Period	Los Angeles			New York		
	No. 2 Distillate		Propane	No. 2 Distillate		Propane
	Spot	Terminal	Terminal	Spot	Terminal	Terminal
Monthly						
10/94	55.7	NA	39.7	48.2	52.2	42.0
11/94	54.9	NA	44.0	49.5	53.1	44.1
12/94	46.6	NA	46.1	48.3	52.3	44.4
01/95	49.8	NA	48.0	48.1	52.5	44.3
02/95	51.9	NA	42.2	47.6	51.5	41.9
03/95	52.9	NA	42.0	45.8	49.9	43.2
04/95	55.8	NA	40.9	49.4	53.1	41.5
05/95	53.7	NA	40.2	50.0	54.1	42.2
06/95	52.8	NA	40.0	47.6	51.3	41.2
07/95	53.5	NA	37.6	46.5	49.8	40.4
08/95	54.9	NA	36.9	49.1	52.0	40.6
09/95	55.4	NA	39.2	50.1	53.6	40.6
Week Ending						
09/08/95	54.3	NA	39.0	51.6	54.5	40.5
09/15/95	54.9	NA	39.0	51.1	54.5	40.5
09/22/95	55.7	NA	39.0	49.3	53.7	40.5
09/29/95	57.0	NA	39.6	48.6	52.2	40.8
10/06/95	56.4	NA	42.0	48.2	52.2	41.0
10/13/95	56.9	NA	42.2	48.3	51.7	41.2
10/20/95	57.5	NA	44.2	48.2	52.3	41.0
10/27/95	57.9	NA	45.0	49.5	52.8	40.9
Daily						
10/10/95	56.5	NA	42.0	47.9	51.8	41.2
10/11/95	57.0	NA	42.0	48.4	51.7	41.2
10/12/95	57.6	NA	42.0	48.1	51.8	41.1
10/13/95	57.8	NA	43.0	48.5	51.8	41.2
10/16/95	57.0	NA	44.0	48.5	52.1	41.2
10/17/95	57.6	NA	44.0	48.3	52.5	41.1
10/18/95	60.5	NA	44.0	48.1	52.5	41.0
10/19/95	56.3	NA	44.0	47.9	52.3	41.0
10/20/95	56.3	NA	45.0	48.3	52.2	40.9
10/23/95	57.0	NA	45.0	48.7	52.3	40.9
10/24/95	57.9	NA	45.0	49.3	52.2	40.9
10/25/95	57.9	NA	45.0	49.4	52.8	40.9
10/26/95	58.4	NA	45.0	50.2	52.8	40.9
10/27/95	58.4	NA	45.0	50.1	53.7	40.9
10/30/95	59.1	NA	45.0	50.4	53.7	41.0

NA=Not available.

Source: • No. 2 distillate spot prices in Chicago, Houston, and Los Angeles, are from Telerate; New York spot prices are from Reuters. • No. 2 distillate terminal prices in Chicago, Houston, Los Angeles, and New York are from Computer Petroleum Corp. • Propane terminal prices in Lemont, Illinois; Mt. Belvieu, Texas; Los Angeles, California; and Selkirk, New York are from Computer Petroleum Corp.

Weather Summary

Weather conditions continue to have a strong effect on U.S. petroleum supply and demand.

United States Weather Summary

6-10 Day Outlook - November 5 Through November 9, 1995

Above normal temperatures are expected over extreme southwest Texas and a portion of southern New Mexico, from southern New York and southwestern Connecticut southward to the northern and western portions of the Carolinas and southwestward through the eastern and middle portions of the Ohio and Tennessee Valleys to southeastern Louisiana, Mississippi, Alabama and northwestern Georgia. Much above normal temperatures are indicated for southeastern North Carolina, most of South Carolina and Georgia and all of Florida excluding the extreme western panhandle. Near normal temperatures are expected along the entire immediate Pacific Coast, over much of New Mexico, along most of the Rio Grande Valley, from southeastern Texas and the northwestern half of Louisiana northeastward through the middle Mississippi Valley and Indiana to southeastern Michigan and northwestern Ohio, as well as over northeastern New York and most of New England. Much below normal temperatures are indicated for most of the northern and central Intermountain region as far south as northern Arizona, over all but the extreme southern Rockies, the northern and central Great Plains extending as far south as the Texas panhandle and as far east as the central portions of Minnesota and Iowa. In unspecified areas below normal temperatures are expected.

Little or no precipitation is indicated for interior Southern California, extreme southwestern Arizona, western Nevada, southern and central New Mexico and along most of the Rio Grande Valley of Texas, from extreme southeastern Louisiana eastward through extreme southern Mississippi, Alabama, Georgia and all of Florida. Below median totals are expected over the western two-thirds of Washington and adjacent portions of Oregon. Near median precipitation totals are expected for most of Oregon and Idaho, extreme western Montana, most of northern California and extreme northern Nevada, from southeastern Texas eastward through most of Louisiana, central Mississippi, from Alabama and Georgia and northeastward along the Atlantic Coastal Plains of the Carolinas, as well as over Maine and northeastern New Hampshire. Above median precipitation totals are anticipated for unspecified areas which includes over half the nation.

(Refer to Figures 34 and 35).

30 Day Outlook - October 1995

There is a greater than average chance for temperatures over Florida and in central California to be above average normals. In Utah, Wyoming and Colorado there is an increased chance for temperatures to be below the average normal of each region.

(Refer to Figure 36).

Source: National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Figure 34. 6 - 10 Day Temperature Outlook for November 5 Through November 9, 1995

Source: National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Figure 35. 6 - 10 Day Precipitation Outlook for November 5 Through November 9, 1995

Source: National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Figure 36. 30 Day Temperature Outlook October 1995

Source: National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Table 13. U.S. Total Heating Degree Days by City
(Population Weighted Heating Degree-Days¹, Except Where Noted)

Location	Current 07/01/95 thru 10/28/95	Previous 07/01/94 thru 10/28/94	Normal 07/01 thru 10/28	Percent Change	
				Current vs. Previous	Current vs. Normal
U.S. Total, Population-Weighted	319	340	323	-6	-1
Cities					
Albuquerque	174	226	235	-23	-26
Amarillo	283	208	215	36	32
Asheville	252	311	324	-19	-22
Atlanta	120	69	127	74	-6
Billings	665	523	728	27	-9
Boise	516	420	544	23	-5
Boston	282	342	356	-18	-21
Buffalo	456	523	527	-13	-13
Cheyenne	815	639	814	28	0
Chicago	437	366	440	19	-1
Cincinnati	326	288	333	13	-2
Cleveland	327	395	446	-17	-27
Columbia, SC	62	93	122	-33	-49
Denver	615	385	515	60	19
Des Moines	442	320	401	38	10
Detroit	376	388	496	-3	-24
Fargo	804	600	824	34	-2
Hartford	359	440	447	-18	-20
Houston	11	21	22	***	***
Jacksonville, FL	14	12	25	***	***
Kansas City	312	282	298	11	5
Las Vegas	22	28	48	***	***
Los Angeles	6	12	52	***	***
Memphis	74	116	119	-36	-38
Miami	0	0	0	***	***
Milwaukee	480	322	559	49	-14
Minneapolis	635	478	634	33	0
Montgomery	62	48	76	***	***
New York	114	199	244	-43	-53
Oklahoma City	182	146	126	25	44
Omaha	417	329	408	27	2
Philadelphia	141	238	275	-41	-49
Phoenix	0	14	12	***	***
Pittsburgh	304	412	462	-26	-34
Portland, ME	626	681	688	-8	-9
Providence	299	389	410	-23	-27
Raleigh	111	194	170	-43	-35
Richmond	157	235	223	-33	-30
St. Louis	206	165	221	25	-7
Salem, OR	412	390	557	6	-26
Salt Lake City	447	356	429	26	4
San Francisco	272	307	354	-11	-23
Seattle	464	387	609	20	-24
Shreveport	48	72	51	***	***
Washington, DC	142	190	179	-25	-21

¹See Glossary.

***=Normal heating degree-days 100 or less, or ratio incalculable.

Note: The weather for the Nation, as measured by population-weighted heating degree-days from July 1, 1995, through October 28, 1995, has been 6 percent warmer than last year and 1 percent warmer than normal. • The total heating degree-days for the previous heating season (July 1, 1994 - June 30, 1995) was 4,240 and the normal is 4,575. • A new method for calculating heating/cooling degree days was implemented by the Climate Analysis Center in October 1993, with further refinements implemented in November 1993. The routines incorporate 1981-1990 normals supplied by the National Climatic Data Center, and 1990 census data for calculation of population weighted degree days.

Source: Weather data reported in the *Winter Fuels Report* are taken directly from a computerized system implemented by the National Oceanic and Atmospheric Administration, Department of Commerce. The National Oceanic and Atmospheric Administration (NOAA)/NWS, as a U.S. Government Agency, does not endorse any consumer information services.

Appendix A

District Descriptions and Maps

Tank trucks are used to distribute heating oil to remote areas.

Appendix A

District Descriptions and Maps

The following are the Petroleum Administration for Defense (PAD) Districts.

PAD District I

East Coast: 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.

Appalachian No. 1: The State of West Virginia and those parts of the States of Pennsylvania and New York not included in the East Coast District.

Sub-PAD District I

New England (PADD 1X): The States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Central Atlantic (PADD 1Y): The District of Columbia and the States of Delaware, Maryland, New Jersey, New York, and Pennsylvania.

Lower Atlantic (PADD 1Z): The States of Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.

PAD District II

Indiana-Illinois-Kentucky: The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and Ohio.

Minnesota-Wisconsin-North and South Dakota: The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

Oklahoma-Kansas-Missouri: The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

PAD District III

Texas Inland: The State of Texas except the Texas Gulf Coast District.

Texas Gulf Coast: 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 Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

Louisiana Gulf Coast: The following parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, 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.

North Louisiana-Arkansas: The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

New Mexico: The State of New Mexico.

PAD District IV

Rocky Mountain: The States of Montana, Idaho, Wyoming, Utah, and Colorado.

PAD District V

West Coast: The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

Petroleum Administration for Defense (PAD) Districts

Appendix B

Explanatory
Notes

The cluster of pipes and valves that control the flow of oil at the mouth of an oil well is what oilmen call a "Christmas Tree."

Explanatory Notes

The following Explanatory Notes are provided to assist in understanding and interpreting the data presented in this publication.

- Note 1. Distillate Fuel Oil
- Note 2. Propane
- Note 3. Figures
- Note 4. Natural Gas
- Note 5. Prices
- Note 6. Provisions Regarding Confidentiality of Information

Note 1. Distillate Fuel Oil

Data on distillate fuel oil are collected within two time frames: weekly and monthly. Data from the Weekly Petroleum Supply Reporting System (WPSRS) are used to develop estimates for distillate fuel oil on a weekly basis. The forms that comprise the WPSRS are:

Form Number	Name
EIA-800	<i>Weekly Refinery Report</i>
EIA-801	<i>Weekly Bulk Terminal Report</i>
EIA-802	<i>Weekly Product Pipeline Report</i>
EIA-803	<i>Weekly Crude Oil Report</i>
EIA-804	<i>Weekly Imports Report</i>

Monthly data are extracted from selected surveys in the Monthly Petroleum Supply Reporting System (MPSRS). The forms that comprise the MPSRS are:

Form Number	Name
EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-814	<i>Monthly Imports Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>

Refer to Explanatory Note 2 in the *Petroleum Supply Monthly* for a detailed discussion of the MPSRS.

Sample Frame

A sample of all petroleum companies report weekly data to the Energy Information Administration (EIA) on crude oil and petroleum product stocks, refinery inputs and production, and crude oil and petroleum product imports. The sample of companies that report weekly is selected from the universe of companies that report on the comparable monthly surveys.

Sampling

The sampling procedure used for the weekly system is the cut-off method. In the cut-off method, companies are ranked from largest to smallest on the basis of the quantities reported during some previous period. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers about 90 percent of the total, for each item and each geographic region for which weekly data are published.

Collection Methods

Data are collected by mail, mailgram, telephone, Telex, Telefax, and electronic transmission on a weekly basis. All canvassed firms must file by 5:00 p.m. on the Monday following the close of the report week, 7:00 a.m. Friday.

Resubmissions

During the processing week, company corrections of the prior week's data are also entered. This revised data is used to edit the current processing week's data.

Estimation and Imputation

After the company reports have been checked and entered into the weekly data base, explicit imputation is done for companies which have not yet responded. The imputed values are exponentially smoothed means of recent weekly reported values for this specific company. The imputed values are treated like reported values in the estimation procedure, which calculates ratio estimates of the weekly totals. First, the current week's data for a given product reported by companies in a geographic region are summed. (Call this weekly sum, W_s .) Next, the most recent month's data for the product reported by those same companies are summed. (Call this monthly sum, M_s .) Finally, let M_t be the sum of most recent month's data for the product as reported by all companies. Then, the current week's ratio estimate for that product for all companies, W_t , is given by:

$$W_t = \frac{M_t}{M_s} \cdot W_s$$

This procedure is used directly to estimate total weekly inputs to refineries and production. To estimate stocks of finished products, the preceding procedure is followed separately for refineries, bulk terminals, and pipelines. Total estimates are formed by summing over establishment types.

Weekly imports data are highly variable on a company-by-company basis or a week-by-week basis. Therefore, an exponentially smoothed ratio has been developed. The estimate of total weekly imports is the product of the smoothed ratio and the sum of the weekly reported values and imputed values.

Response Rates

The response rate as of the day after the filing deadline is about 80 percent for the EIA-800, 75 percent for the EIA-801, 95 percent for the EIA-802, 80 percent for the EIA-803, and greater than 95 percent for the EIA-804. However, more forms are received the next day, bringing the final response rates up. Late respondents are contacted by telephone. Nearly all of the major companies report on time. The nonresponse rate for the published estimate is usually between 1 percent and 2 percent.

Note 2. Propane

The Form EIA-807, "Propane Telephone Survey," was implemented in April 1990 as the result of the 1989 propane supply disruption. The hardships experienced by propane users during the December 1989 cold-snap in the Northeast and Mid-Continent areas made the need for timely supply information imperative. During 1990, propane data was collected and provided to Congress and others upon request. Because of the overwhelming demand for continuous monitoring of propane supply, the *Winter Fuels Report* was implemented in September 1990. This report publishes weekly data on propane as well as other heating fuels.

Respondent Frame

The Form EIA-807, "Propane Telephone Survey," collects data on production, stocks, and imports of propane. The sample of companies that report weekly is selected from the universe of companies that report on the comparable monthly surveys. These surveys are:

Form Number	Name
EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-814	<i>Monthly Imports Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>

Sampling

The sampling procedure used for the EIA-807 is the cut-off method. In the cut-off method, facilities are ranked from largest to smallest on the basis of quantities reported for propane production, imports, and stocks. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers about 90 percent of the total for each item and each geographic region (Petroleum Administration for

Defense Districts I (IX, IY, IZ), II and III) for which data are published. A bench mark factor is used to capture the remaining 10 percent of the propane industry.

The sample frame for the EIA-807 is re-evaluated on an annual basis to assure 90 percent coverage of the total for each item collected and each geographic region. However, when necessary the sample frame is updated more frequently.

Collection Methods

Data are collected by telephone or facsimile. No written confirmation of the data submission is necessary. For weekly data collections, telephone calls to the respondents start on the Monday following the end of the report period. For monthly data collections, telephone calls to respondents start on the third working day following the end of the report period.

Resubmissions

Resubmissions are any changes to originally submitted data. A determination is made on whether to process the resubmissions based on the magnitude of the revision. Cell entries on publication tables are marked with an "R" for revised.

Revision Error

Summary information on the revision error between preliminary weekly data and final monthly data will be incorporated in the feature article in the *Petroleum Supply Monthly* entitled, "Timeliness and Accuracy of Petroleum Supply Data." The last article was published in the October 1994 issue and evaluated the accuracy of the data for 1993 compared with previous years.

From October 1992 through March 1993, the difference between preliminary and final data for propane stocks remained within six percent. No difference in preliminary and final data was found for imports and production of propane.

Estimation and Imputation

After the company reports have been checked and entered into the EIA-807 data base, imputation is done for companies which have not yet responded. The imputed values are equal to the latest reported data for a particular reporting unit. Response rates are over 90 percent so very little imputation is done.

After the data files have been edited and corrected, aggregation is done for net production, imports, and stocks by each geographic region. Estimation factors, which were derived from 1992 reported data, are then applied to each cell to generate published estimates.

Response Rate

The response rate is generally 95 to 100 percent. Chronic nonrespondents and late filing respondents are contacted by telephone and reminded of their requirement to report. Nearly

all of the major companies report on time. The nonresponse rate for the published estimate is usually between 1 percent and 2 percent.

Note 3. Figures

The national inventory (stocks) graphs for distillate fuel oil and propane include features to assist in comparing current inventory levels with past inventory levels and with judgments of critical levels. Methods used in developing the average inventory levels and minimum operating levels are described below.

Average Inventory Levels

The charts displaying inventory levels of distillate fuel oil and propane (Figures 1 through 14) provide the reader with actual inventory data compared to an "average range" for the most recent 3-year period running from January through December or from July through June. The ranges also reflect seasonal variation for the past 7 years.

The seasonal factors, which determine the shape of the upper and lower curves, are estimated with a seasonal adjustment technique developed at the Bureau of Census (Census X-11). The seasonal factors are assumed to be stable (i.e., unchanging from year to year) and additive (i.e., the series is deseasonalized by subtracting the seasonal factor for the appropriate month from the reported inventory levels.) The intent of deseasonalization is to remove only annual variation from the data. Thus, deseasonalized series would contain the same trends, cyclical components, and irregularities as the original data. The seasonal factors are updated annually in October, using the 7 most recent years' final monthly data.

The seasonal factors are used to deseasonalize data from the most recent 3-year period (January-December or July-June). The average of the deseasonalized 36-month series determines the midpoint of the "average range." The standard deviation of the deseasonalized 36 months is then calculated after adjusting for extreme data points. The upper curve of the "average range" is defined as average plus the seasonal factors plus the standard deviation. The lower curve is defined as the average plus the seasonal factors minus the standard deviation. Thus, the width of the "average range" is twice the standard deviation. The ranges are updated every 6 months in April and October.

The lines labeled "observed minimum" on the stock graphs are the lowest inventory levels observed during the most recent 36-month period as published in the *Petroleum Supply Monthly*.

Note 4. Natural Gas

Data contained in tables in the Natural Gas Section are from tables published in the *Natural Gas Monthly*. Data are collected from the following surveys:

Form EIA-191

The Form EIA-191, "Underground Natural Gas Storage Report," collects storage data by State, field, and reservoir. There are approximately 400 operating reservoirs in the United States, owned by 97 companies. It is a multipart form that reports the quantities of gas in storage, injections and withdrawals, and the location (State and county) and capacity of underground storage reservoirs along with peak day sendout during the reporting period.

The response rate as of the filing deadline is approximately 20 percent. Data from the remaining 80 percent of respondents are received in writing and/or by telephone within 3 to 4 days after the filing deadline. All data supplied by telephone are subsequently filed in writing, generally within 15 days of the filing deadline. The final response rate is 100 percent.

Form FERC-11

The Form FERC-11, "Natural Gas Pipeline Company Monthly Statement," is a monthly regulatory reporting form. Form FERC-11 is filed by major interstate natural gas pipeline companies whose combined sales for resale and gas transported interstate or stored for a fee exceeded 50 billion cubic feet in the previous calendar year. Approximately 52 pipeline companies report data on Form FERC-11. Information is collected monthly by mail. Historically, the response rate has been 100 percent.

Form FPC-14

The Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas," is filed annually by each organization or individual having authorization to import and export natural gas regardless of whether any imports or exports took place during the reporting year. In 1994, 409 companies met the reporting criteria, only 214 reported imports or exports of natural gas.

Form EIA-857

The Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers," is a mandatory report. Data collected on the Form EIA-857 include both price and volume data and are considered proprietary. A sample of 382 natural gas companies including interstate pipelines, intrastate pipelines, and local distribution companies report on the Form EIA-857. The sample is selected independently for each of the 50 States and the District of Columbia.

Form EIA-176

The Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," survey universe includes approximately 1,800 companies and 2,039 responses. These companies are interstate and intrastate natural gas pipeline companies, investor and municipally owned natural gas distributors, synthetic natural gas plant operators, and field, well,

or processing plant operators that deliver natural gas directly to consumers (including their own industrial facilities) and/or that transport gas to, across, or from a State border through field or gathering facilities.

AGA Underground Storage Estimate

Since January 1994, the American Gas Association (AGA) has conducted a weekly survey to estimate volumes of natural gas in underground storage. The survey is used to estimate working gas volumes for the United States. Participation in the survey is voluntary. Currently it is completed by 46 companies representing approximately 88 percent of working gas in storage when inventories are full at the beginning of the heating season. Reporting and calculations are done separately for three mutually exclusive groups of States labeled as (1) Producing Region; (2) Consuming Region East; and (3) Consuming Region West.

Each week, responding companies report the volume of working gas in their reservoirs as of 9:00 a.m. the previous Friday. They also report the maximum working gas held in those reservoirs during the previous three years. If a company has storage facilities in more than one AGA storage region, separate reports are filed for operations in each.

Estimated working gas in storage for the each region is calculated by summing both the week's reported working gas volume and the maximum working gas volume for those respondents. The resulting ratio of actual to maximum working gas is then applied to the maximum working gas value in all reservoirs in the region. This latter figure was derived by the AGA by identifying the highest level of working gas in storage reported in the *Natural Gas Monthly* and incorporating changes in working gas due to restructuring and additions to storage capacity. Regional totals are then summed to determine the national estimate of working gas in storage.

Note 5. Prices

The residential No. 2 heating oil and propane prices (excluding taxes) for a given State are based on the results of telephone surveys of a sample of marketers and refiners. Data are collected under the Energy Information Administration (EIA) State Heating Oil and Propane Program.

Sampling Methodology and Estimation Procedures

To estimate aggregate propane and No. 2 heating oil price data for a State, the sample weight and volume sales data were applied to the reported price, summed and divided by the sum of the weighted volume:

$$\frac{\sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij} p_{ij}}{\sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij}} \quad \text{where } w =$$

sample weight, v = volume, p = price, i = respondent, n_j = sample size of stratum j , and s = number of strata, to obtain a volume weighted price.

The volume used for No. 2 heating oil is the company's residential sales volume for 1991 as reported on the EIA-863 "Petroleum Product Sales Identification Survey." The volume used for propane is the company's residential propane sales volume for the previous year obtained by Form EIA-877, "Winter Heating Fuels Telephone Survey," during the first pricing period.

These fixed volume weights indicate the relative importance of the individual companies according to the size of their sales. Therefore, changes in the average price across time reflect only the change in the price being offered by the company, and not changes in the amounts sold. Price indexes constructed using fixed volumes, such as these annual sales, are known as Laspeyres Indexes. The alternative method of weighting, current weights, would require each company to report the number of gallons sold at the reported price each pricing period. This method is more burdensome on the companies and reflects prices over a period of time as compared to a point in time. Therefore, the calculation of average prices tends to lag behind the reference period. Indexes constructed from current period weights are known as Paasche Indexes.

Both methods of weighting are correct; they do, however, vary when current weights are changing. It has been argued that during periods of change, the Laspeyres method has a tendency to overestimate price changes, while the Paasche method tends to underestimate price changes.

In this survey, it is expected that the relative change in volumes monthly is small. Residential sales are not bulk in nature and do not tend to reflect discounts on price for large volume purchases. Absolute changes in volume within a year's time would more likely reflect demand and be consistent across companies within a geographical area.

Reliability of the Data

Two types of errors are associated with data produced from a sample survey—sampling errors and nonsampling errors. Sampling errors occur because the estimates are based on a sample rather than on a census. The particular sample used for the EIA-877 survey is one of a large number of samples of equal size which could have been selected from the sampling frame using the same sample design. Each of these samples would produce a different estimate. If the estimates were averaged over all possible samples, the result would be the same as the estimate derived from a census of the sampling frame. The sampling error is a measure of variability among the estimates from all possible samples and, thus, is a measure of the precision with which an estimate from a particular sample approximates the results of a census.

Nonsampling errors can be attributed to many sources: (1) inability to obtain complete information about all cases in the sample (i.e., nonresponse), (2) response errors, (3) definitional difficulties, (4) differences in the interpretation of questions, (5) mistakes in recording or coding the data obtained, and (6) other errors of collection, response, coverage, and estimation for

missing data. These nonsampling errors also occur in complete censuses.

Although no direct measurement of the biases due to nonsampling errors can be obtained, precautionary steps were taken in all phases of the frame development and data collection, processing, and tabulation processes, in an effort to minimize their influence.

Data in Tables B1 and B2 are based on survey data which are subject to sampling errors. Coefficients of variation, which are estimates of sampling errors, are presented for the propane and No. 2 heating oil prices in the following tables for the 1995/96 survey. The coefficients of variation (CV) were estimated by:

$$CV(\hat{P}) = \frac{\sqrt{VAR(\hat{P})}}{\hat{P}}$$

where:

$$VAR(\hat{P}) = \frac{1}{V^2} \sum_k N_k \left(\frac{1-f_k}{n_k} \right) S_k^2$$

$$S_k^2 = S_{kq}^2 + \hat{P}^2 S_{kv}^2 - 2\hat{P} S_{kqv}^2$$

for heating oil:

$$S_{kq}^2 = \frac{\sum_{i=1}^{n_k} (P_{ik} V_{ik} - \bar{P}_k \bar{V}_k)^2}{n_k - 1}$$

$$S_{kv}^2 = \frac{\sum_{i=1}^{n_k} (V_{ik} - \bar{V}_k)^2}{n_k - 1}$$

$$S_{kqv}^2 = \frac{\sum_{i=1}^{n_k} (P_{ik} V_{ik} - \bar{P}_k \bar{V}_k)(V_{ik} - \bar{V}_k)}{n_k - 1}$$

but for propane:

$$S_{kq}^2 = \frac{\sum_{i=1}^{n_k-1} (P_{ik} V_{ik} - P_{i+1,k} V_{i+1,k})^2}{2(n_k-1)}$$

$$S_{kv}^2 = \frac{\sum_{i=1}^{n_k-1} (V_{ik} - V_{i+1,k})^2}{2(n_k-1)}$$

$$S_{kqv}^2 = \frac{\sum_{i=1}^{n_k-1} (P_{ik} V_{ik} - P_{i+1,k} V_{i+1,k})(V_{ik} - V_{i+1,k})}{2(n_k-1)}$$

n_k = number of respondents in stratum k

N_k = number of population units in stratum k

V_{ik} = reported volume for unit i in stratum k

$\bar{V}_k$ = average volume for sample units in stratum k

$P_{ik} V_{ik}$ = reported revenue for unit i in stratum k

$\bar{P}_k \bar{V}_k$ = average revenue for sample units in stratum k

$\hat{P}$ = weighted average price for each State

Residential No. 2 Heating Oil

For the No. 2 heating oil price data, a sample design similar to that used for the EIA Form EIA-782B, "Resellers'/Retailers' Monthly Petroleum Product Sales Report," sample design was used. The sampling frame was an extract of approximately 11,000 companies from the Form EIA-863, "Petroleum Product Sales Survey," conducted in 1992 and containing 1991 sales volume information. A one-way stratified sample design using No. 2 residential distillate frame sales volumes by State, for each of the 24 States to be sampled, was used. Stratum boundaries were determined by the Dalenius-Hodges procedure. Sample weights were calculated as the inverse of the probability (N/n). Certainty strata were established based on sales volumes and the number of States in which the company has sales. The expected price coefficient of variation is one to two percent.

Residential Propane

Since no volume sales information existed to predetermine the volume sales of propane dealers, two strata for propane dealers was used. A certainty stratum of the known, large, multi-State dealers was created. These companies were identified using establishment lists obtained in deriving the frame. All other dealers were in a second stratum and a random sample from this stratum was selected. Sample weights were calculated as the inverse of the probability (N/n). The name and address list sampling frame was constructed by first extracting from the Form EIA-863, "Petroleum Product Sales Identification Survey," companies who marked the box on the survey indicating they sell propane. This was augmented by companies on the Office of Oil and Gas Master File who have the words propane or liquefied petroleum gas (LPG) in their name. In addition, companies who file the Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report," and report retail propane or the Form EIA-782C, "Monthly Report of Petroleum Products Sold into States for Consumption," and report propane, as well as companies that were active on the Form EIA-174, "Liquefied Petroleum Gas Survey," prior to its discontinuance, were included.

Table B1. Coefficients of Variation for Residential Heating Oil Prices by Region and State
(Cents per Gallon)

Region/State	1995/96 Heating Season											
	10/02	10/16	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	0.01											
East Coast (PADD I)	0.01											
New England (PADD IX)	0.01											
Connecticut	0.01											
Maine	0.01											
Massachusetts	0.02											
New Hampshire	0.02											
Rhode Island	0.03											
Vermont	0.02											
Central Atlantic (PADD IY)	0.02											
Delaware	0.01											
District of Columbia	0.01											
Maryland	0.01											
New Jersey	0.03											
New York	0.02											
Pennsylvania	0.01											
Lower Atlantic (PADD IZ)	0.01											
North Carolina	0.01											
Virginia	0.02											
Midwest (PADD II)	0.01											
Indiana	0.01											
Iowa	0.02											
Kentucky	0.01											
Michigan	0.02											
Minnesota	0.01											
Ohio	0.03											
Wisconsin	0.01											

Source: Based on data collected by State Energy Offices.

Table B2. Coefficients of Variation for Residential Propane Prices by Region and State
(Cents per Gallon)

Region/State	1995/96 Heating Season											
	10/02	10/16	11/06	11/20	12/04	12/18	01/01	01/15	02/05	02/19	03/04	03/18
Average	0.00											
East Coast (PADD I)	0.00											
New England (PADD IX)	0.00											
Connecticut	0.03											
Maine	0.04											
Massachusetts	0.04											
New Hampshire	0.01											
Rhode Island	0.01											
Vermont	0.01											
Central Atlantic (PADD IV)	0.02											
Delaware	0.00											
Maryland	0.02											
New Jersey	0.02											
New York	0.04											
Pennsylvania	0.06											
Lower Atlantic (PADD IZ)	0.00											
North Carolina	0.01											
Virginia	0.02											
Midwest (PADD II)	0.00											
Indiana	0.01											
Iowa	0.02											
Kentucky	0.01											
Michigan	0.01											
Minnesota	0.03											
Missouri	0.03											
North Dakota	0.02											
Ohio	0.03											
South Dakota	0.01											
Wisconsin	0.01											

Source: Based on data collected by State Energy Offices.

Table B3. Revision Rates for Residential Heating Oil Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season											
	10/03	10/17	11/07	11/21	12/05	12/19	01/02	01/16	02/06	02/20	03/06	03/20
Average	1.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Coast (PADD I)	1.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
New England (PADD IX)	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.0
Connecticut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maine	0.3	0.1	0.0	0.0	0.0	1.5	0.0	0.5	0.0	0.0	0.0	0.0
Massachusetts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
New Hampshire	0.6	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Rhode Island	0.8	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vermont	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Central Atlantic (PADD IV)	2.2	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Delaware	0.8	0.0	0.0	0.3	0.0	0.0	1.9	0.5	0.0	0.0	0.0	0.0
District of Columbia	0.0	0.0	0.0	0.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maryland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New York	4.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennsylvania	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Lower Atlantic (PADD IZ)	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Carolina	0.8	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Virginia	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Midwest (PADD II)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indiana	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Iowa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kentucky	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Michigan	0.0	0.0	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Minnesota	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ohio	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wisconsin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Based on data collected by State Energy Offices.

Table B4. Revision Rates for Residential Propane Prices by Region and State
(Cents per Gallon)

Region/State	1994/95 Heating Season											
	10/03	10/17	11/07	11/21	12/05	12/19	01/02	01/16	02/06	02/20	03/06	03/20
Average	0.9	0.7	0.0	0.9	0.2	0.7	0.0	0.6	0.0	0.0	0.0	0.0
East Coast (PADD I)	0.5	0.6	0.1	0.8	1.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
New England (PADD IX)	0.9	1.2	0.6	0.2	0.1	0.1	0.2	0.4	0.0	0.0	0.0	0.0
Connecticut	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.1	0.0	0.0
Maine	0.1	1.3	1.3	0.0	0.0	0.7	5.7	3.2	0.0	0.0	0.0	0.0
Massachusetts	0.1	1.8	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
New Hampshire	2.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rhode Island	14.1	0.2	2.9	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0
Vermont	2.0	3.1	1.1	0.9	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Central Atlantic (PADD IV)	0.0	0.5	0.0	0.3	1.8	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Delaware	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maryland	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Jersey	0.8	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New York	0.1	1.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Pennsylvania	0.4	0.0	0.0	2.9	5.7	0.0	0.0	0.4	0.0	0.0	0.1	0.0
Lower Atlantic (PADD IZ)	1.1	0.4	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Carolina	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Virginia	2.1	0.8	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Midwest (PADD II)	0.1	0.4	0.1	0.1	0.0	0.1	0.1	0.5	0.1	0.0	0.0	0.0
Indiana	1.2	1.0	0.0	0.0	0.0	0.8	0.0	0.1	0.0	0.0	0.0	0.0
Iowa	3.1	2.5	0.1	0.6	0.0	3.6	0.0	0.7	0.0	0.0	0.0	0.0
Kentucky	0.4	0.3	0.0	0.0	0.0	5.1	0.0	0.1	0.0	0.0	0.0	0.0
Michigan	0.0	0.2	0.4	0.0	0.0	0.0	0.3	0.1	0.1	0.0	0.0	0.0
Minnesota	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Missouri	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Dakota	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Ohio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
South Dakota	1.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wisconsin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0

Note: • Data in table appear in absolute values.

Source: Based on data collected by State Energy Offices.

After unduplicating these companies, the initial frame file contained approximately 5,100 companies. Additional companies were obtained from an extract of a current Dun and Bradstreet file of SIC code 5984(9903), primary and secondary retail propane dealers, containing 3,283 names and addresses. Removal of duplicates within this file and between it and the initial frame file was performed using tailored automated match programs with manual review, and resulted in approximately 1,000 potential adds to the initial file. Similarly, additional names and addresses were furnished by industry associations and journals and by State Energy Offices, yielding another 7,429 names. Again, removal of duplicates through the match programs yielded an approximate potential add of 900 companies. Another 800 companies were identified as residing on the Master File but not previously selected as potential propane sellers. Further matching, merging and unduplicating reduced the final total frame count to approximately 6,000 companies. Reseller/retailer propane price data were unavailable to calculate a target coefficient of variation. However, it was expected that residential propane price variances were similar to heating oil. Increases in variances were expected as a result of lack of detailed stratification, but were only expected to reach three to four percent.

Revision Error

The numbers in Tables B3 and B4 display revision errors for heating oil and propane prices collected during the 1994/95 survey season. Numbers may be revised in the publication based on data received late or receipt of revised data. Numbers are published as preliminary and final. The difference between preliminary and final data is called the revision error.

Response Rate

Response rates are generally 95 to 100 percent.

Note 6. Provisions Regarding Confidentiality of Information

The Office of Legal Counsel of the Department of Justice concluded on March 20, 1991, that the Federal Energy Administration Act requires the Energy Information Administration to provide company-specific data to the Department of Justice, or to any Federal agency when requested for official use, which may include enforcement of Federal law. The information contained on this form may also be made available, upon request, to another component of the Department of Energy (DOE), to any Committee of Congress, the General Accounting Office, or other Congressional agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.

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Glossary

Downstream processing units are used to upgrade petroleum products.

Natural Gas. A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions.

Natural Gas Processing Plant. A gas processing plant is a facility designed (1) to achieve the recovery of natural gas liquids from the stream of natural gas which may or may not have been processed through lease separators and field facilities, and (2) to control the quality of the natural gas to be marketed. Cycling plants are classified as gas processing plants.

Net Production. Petroleum products produced at a refinery, natural gas processing plant, or blending plant. Published production of these products equals production minus input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Pipeline. Crude oil and product pipelines used to transport crude oil and petroleum products respectively, (including interstate, intrastate, and intracompany pipelines) within the 50 States and the District of Columbia.

Population-Weighted Degree-Days. Heating or cooling degree-days weighted by the population of the area in which the degree-days are recorded. To compute national population-weighted degree-days, the Nation is divided into nine Census regions comprised of from three to eight States which are assigned weights based on the ratio of the population of the region to the total population of the Nation. Degree-day readings for each region are multiplied by the corresponding population weight for each region and these products are then summed to arrive at the national population weighted degree-day figure.

Product Supplied. Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus imports, plus unaccounted for crude oil, (plus net receipts when calculated on a PAD District basis), minus stock change, minus crude oil losses, minus refinery inputs, minus exports.

Propane (C₃H₈). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

Propylene (C₃H₆). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes.

Refinery. An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Report Dates. The official report dates for the residential and wholesale price surveys are the first and third Mondays. The official day for the primary stock survey is 7 a.m. on the Friday preceding the report date.

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

Residential Heating Oil Price. The price charged for home delivery of No. 2 heating oil, exclusive of any discounts such as those for prompt cash payment. Prices do not include taxes paid by the consumer.

Residential Propane Price. The "bulk keep full" price for home delivery of consumer grade propane intended for use in space heating, cooking, or hot water heaters in residences.

Storage Additions. Volumes of gas injected or otherwise added to underground natural gas reservoirs or liquefied natural gas storage.

Storage Withdrawals. Volumes of gas withdrawn from underground storage or liquefied natural gas storage.

Supplemental Gaseous Fuels Supplies. Synthetic natural gas, propane-air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Underground Storage. The storage of natural gas in underground reservoirs at a different location from which it was produced.

Underground Storage Injections. Gas from extraneous sources put into underground storage reservoirs.

Underground Storage Withdrawals. Gas removed from underground storage reservoirs.

United States. For the purpose of this report, the 50 States and the District of Columbia. Data for the Virgin Islands, Puerto Rico, and other U.S. territories are not included in the U.S. Totals.

Wholesale Price. The rack price charged for No. 2 heating oil; that is, the price charged customers who purchase No. 2 heating oil free-on-board at a supplier's terminal and provide their own transportation for the product.

Definitions of Petroleum Products and Other Terms

Balancing Item. Represents differences between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperatures and pressure bases and converting to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Barrel. A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. This measure is used in most statistical reports.

Bulk Terminal. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline.

Commercial Consumption. Gas used by nonmanufacturing establishments or agencies primarily engaged in the sale of goods or services. Included are such establishments as hotels, restaurants, wholesale and retail stores and other service enterprises; gas used by establishments engaged in agriculture, forestry, and fisheries; and gas used by local, State, and Federal agencies engaged in nonmanufacturing activities.

Degree-Day Normals. Simple arithmetic averages of monthly or annual degree-days over a long period of time (usually the 30-year period 1961-1990). These may be simple degree-day normals or population-weighted degree-day normals.

Distillate Fuel Oil. A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on-and-off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation. Included are products known as No. 1, No. 2, and No. 4 fuel oils; No. 1, No. 2, and No. 4 diesel fuels. Distillate fuel oil is reported in the following sulfur categories: 0.05% sulfur and under and Greater than 0.05% sulfur.

No. 1 Distillate. A petroleum distillate which meets the specifications for No. 1 heating or fuel oil as defined in ASTM D 396 and/or the specifications for No. 1 diesel fuel as defined in ASTM Specification D 975 with distillation temperatures of 420° F at the 10-percent recovery point and 550° F at the 90-percent recovery point, and kinematic viscosities between 1.4 and 2.2 centistokes at 100° F.

No. 2 Distillate. A petroleum distillate which meets the specifications for No. 2 heating or fuel oil as defined in ASTM D 396 and/or the specifications for No. 2 diesel fuel as

defined in ASTM Specification D 975 with distillation temperatures of 540° and 640° F at the 90-percent recovery point, and kinematic viscosities between 2.0 and 4.3 centistokes at 100° F.

No. 4 Fuel Oil. A fuel oil for commercial burner installations not equipped with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D396 or Federal Specification VV-F-815C; with minimum and maximum kinematic viscosities between 5.8 and 26.4 centistokes at 100° F. Also included is No. 4-D, a fuel oil for low and medium-speed diesel engines that conforms to ASTM Specification D975.

Dry Natural Gas Production. Marketed production less extraction loss.

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

Ending Stocks. Primary stocks of crude oil and petroleum products held in storage as of the end of a specific report period. For the monthly report period this is as of 12 midnight on the last day of the month. For the weekly report period, 7 a.m. each Friday. Primary stocks include crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

Exports. Shipments of goods from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Heating Degree-Days. The number of degrees per day the daily average temperature is below 65 degrees F. The daily average temperature is the mean of the maximum and minimum temperature for a 24-hour period.

Imports. Receipts of goods into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

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

Liquefied Natural Gas (LNG). Natural gas (primarily methane) that has been liquefied by reducing its temperature to minus 260 degrees Fahrenheit at atmospheric pressure.

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